Tysons Corner Urban Design and Transportation Study

Discussion of Transportation Analysis

presented to

Tysons Land Use Task Force

presented by

Donald Vary

Cambridge Systematics, Inc.

March 26, 2007

Transportation leadership you can trust.

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Transportation Analysis

- The current challenge
- The transportation analysis
- The basics of the analysis
- Additional analyses
- Potential TOD/TDM impacts
- Next steps

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The Current Challenge
Traffic Conditions

- Tysons is congested during the morning and evening peaks
- A mix of local and through traffic contributes
- Weekend traffic can be as bad or worse than weekday traffic
- It is difficult to get around many areas by foot

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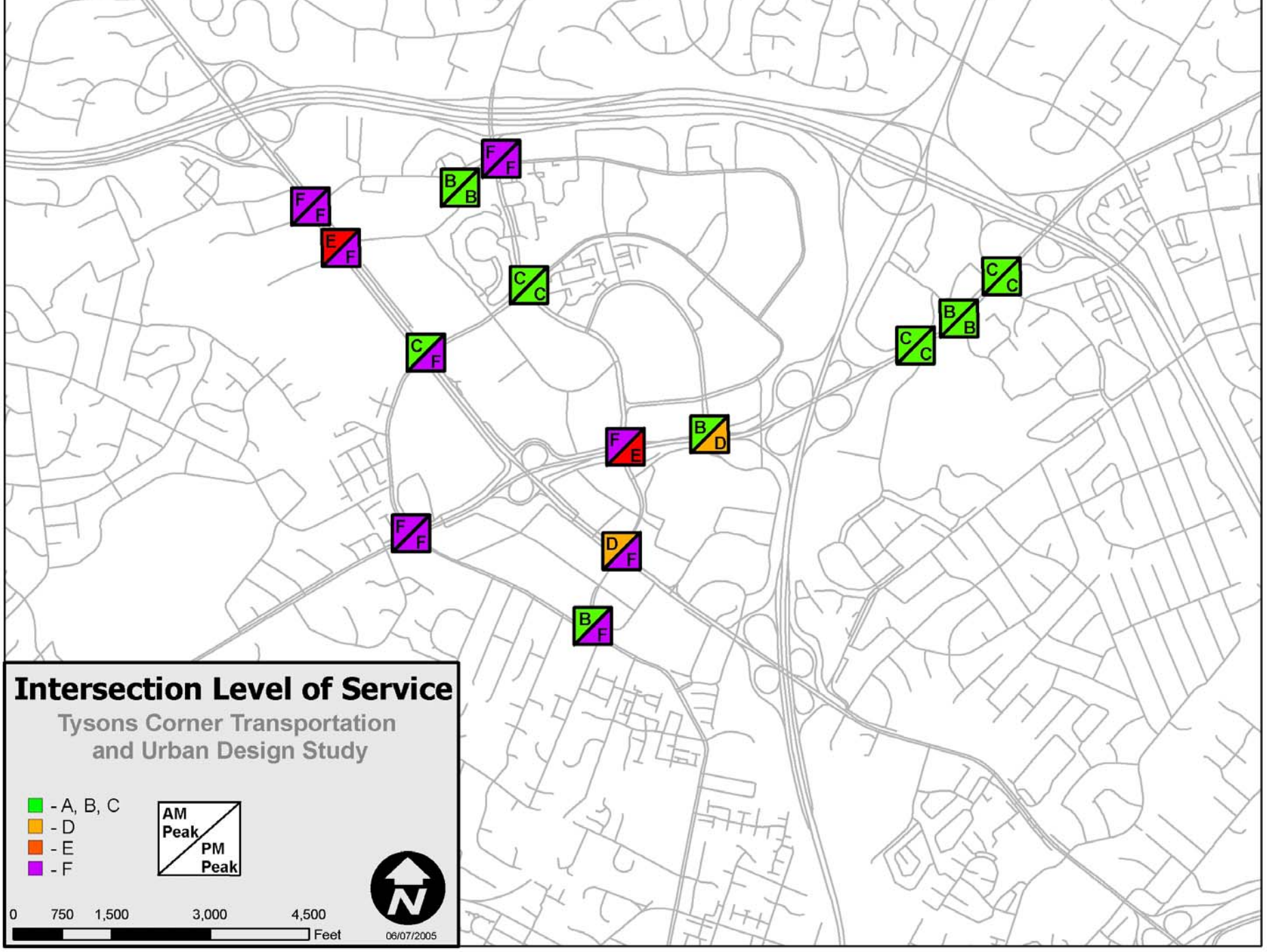
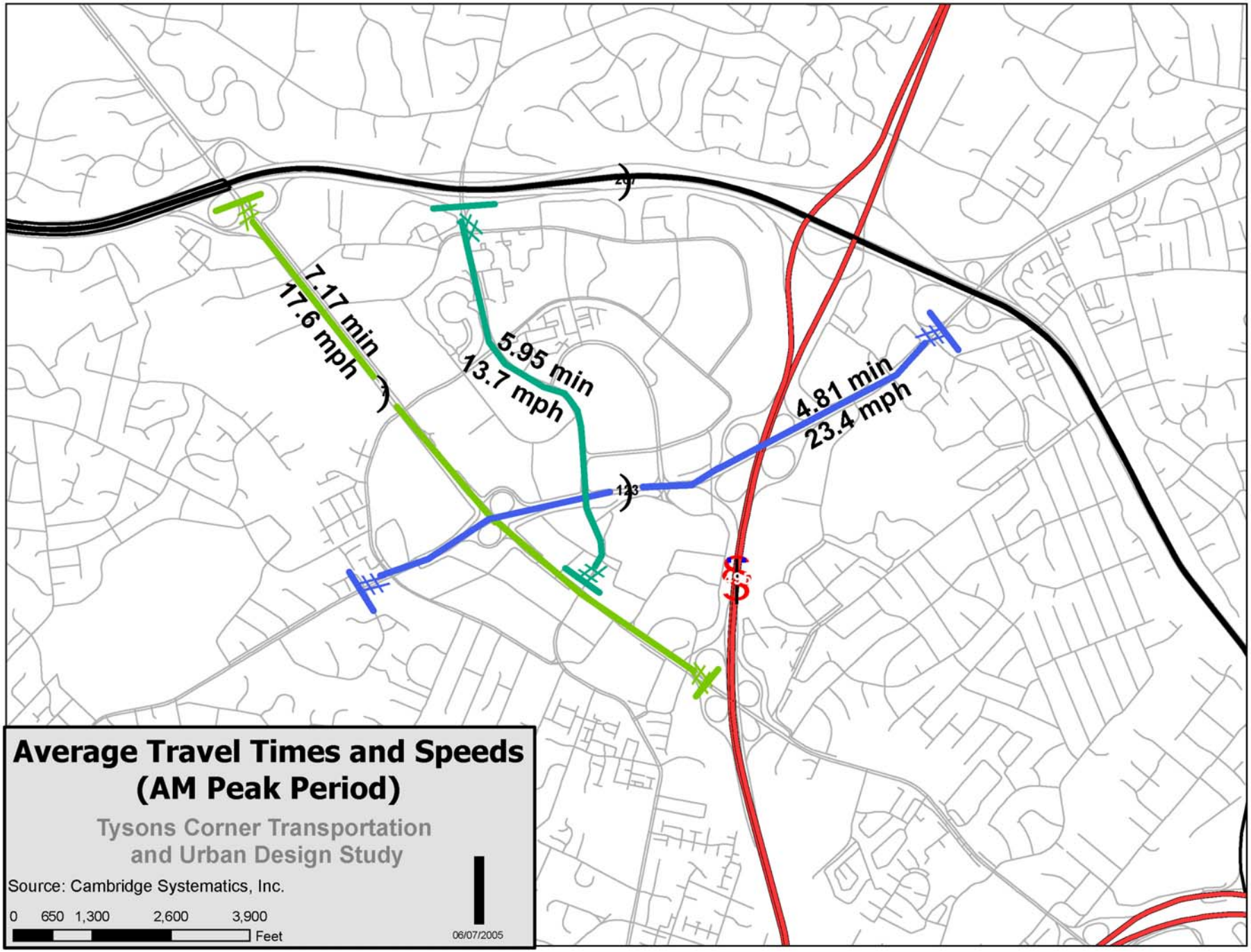
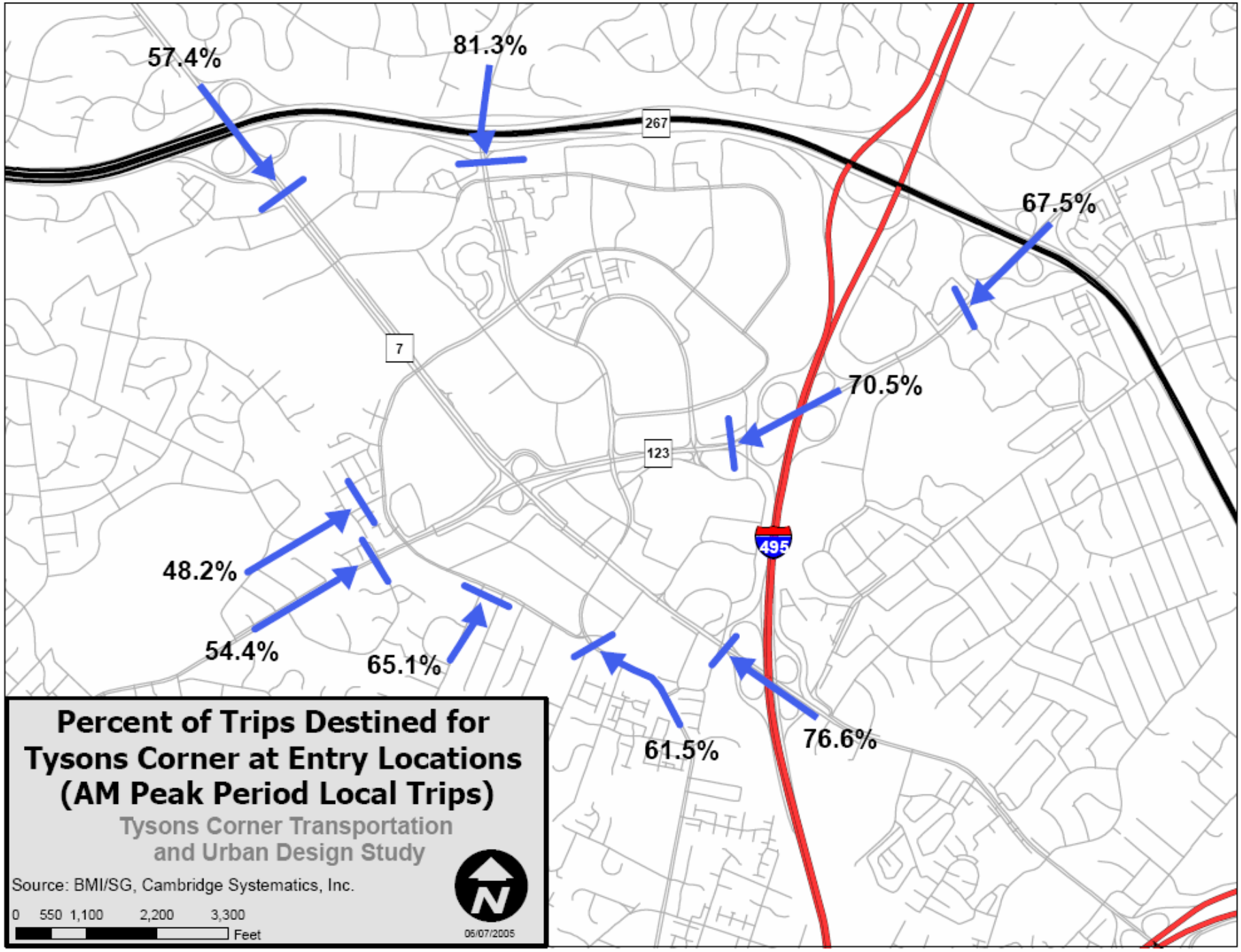
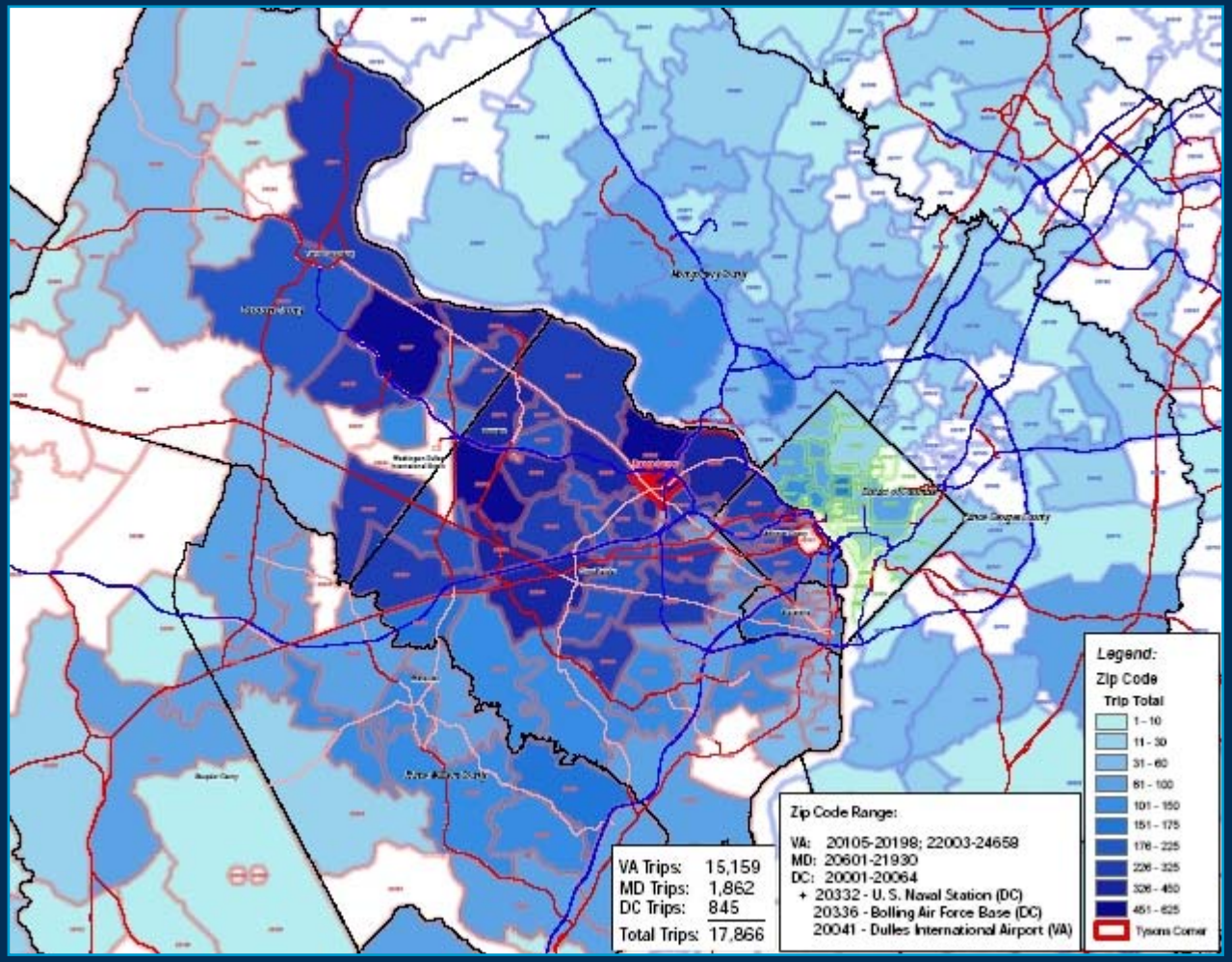

Intersection Level of Service
Tysons Corner Transportation and Urban Design Study
- A, B, C
- D
- E
- F
AM Peak
PM Peak
0 750 1,500 3,000 4,500
Feet
06/07/2005
F/F
B/B
F/F
E/F
C/C
C/F
C/C
B/B
C/C
B/D
F/E
F/F
D/F
B/F


7.17 min
17.6 mph
5.95 min
13.7 mph
4.81 min
23.4 mph
123
Average Travel Times and Speeds
(AM Peak Period)
Tysons Corner Transportation
and Urban Design Study
Source: Cambridge Systematics, Inc.
0 650 1,300 2,600 3,900
Feet
06/07/2005


57.4%
81.3%
267
67.5%
7
70.5%
123
495
48.2%
54.4%
65.1%
61.5%
76.6%
Percent of Trips Destined for
Tysons Corner at Entry Locations
(AM Peak Period Local Trips)
Tysons Corner Transportation
and Urban Design Study
Source: BMI/SG, Cambridge Systematics, Inc.
0 550 1,100 2,200 3,300
Feet
N
06/07/2005

The Current Challenge
Where Workers Come From

- Many Tysons Corner workers live along the VA7 and I-66 Corridors



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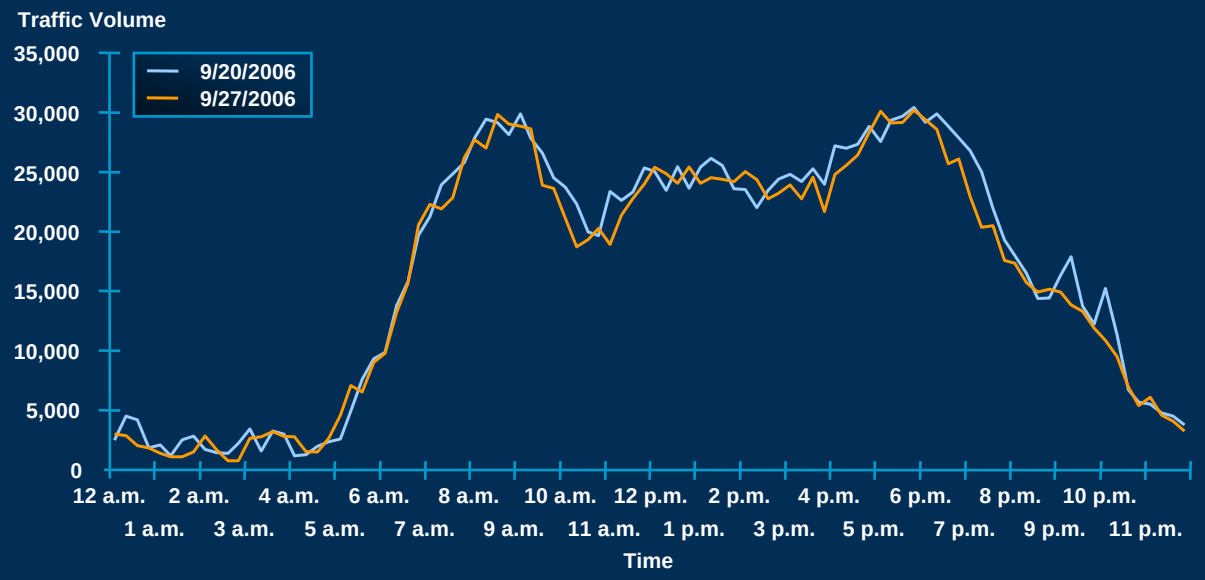
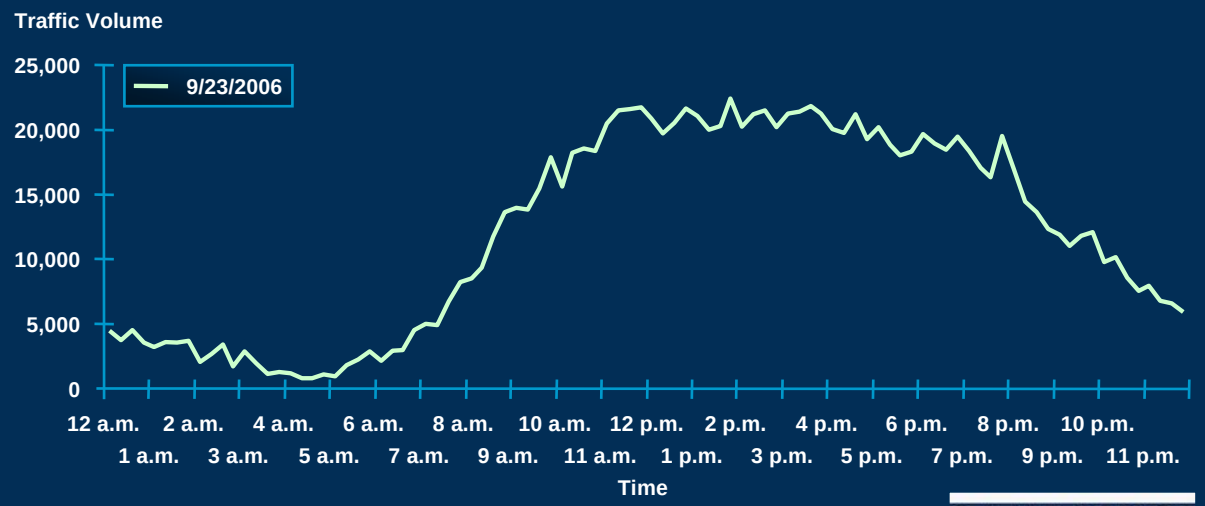
The Current Challenge
Weekday versus Weekend Traffic

- Weekday traffic peaks are spreading out…



- And weekend traffic is spread across the afternoon



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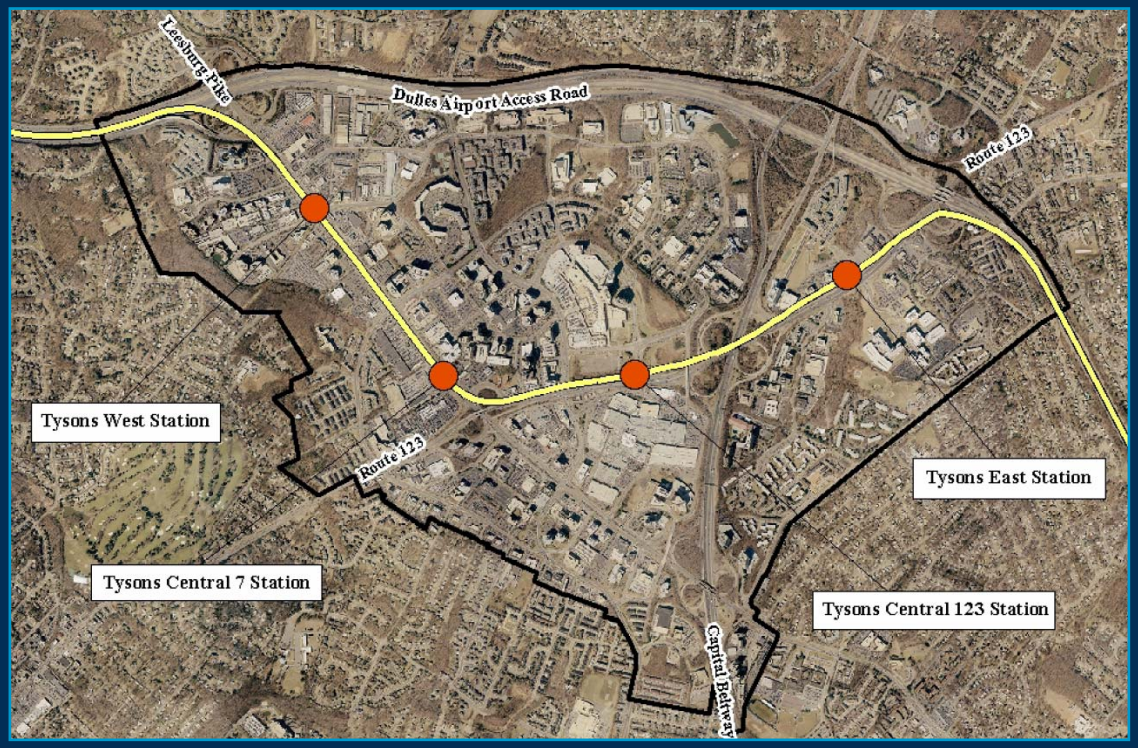
Transportation Analysis
Guiding Principles

- "Reduce the suburban focus on…surface parking and moving vehicles through Tysons Corner…"
- "Reduce the time, cost and inconvenience of accessing and moving within Tysons Corner…"



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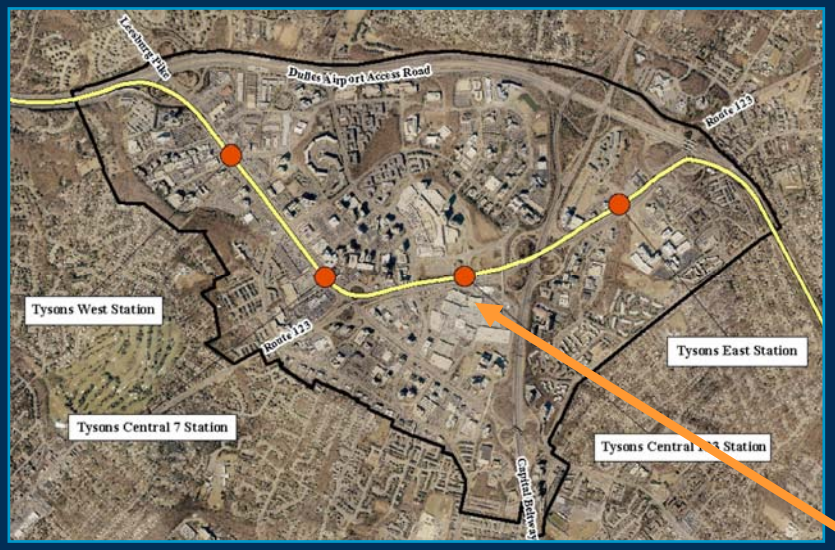
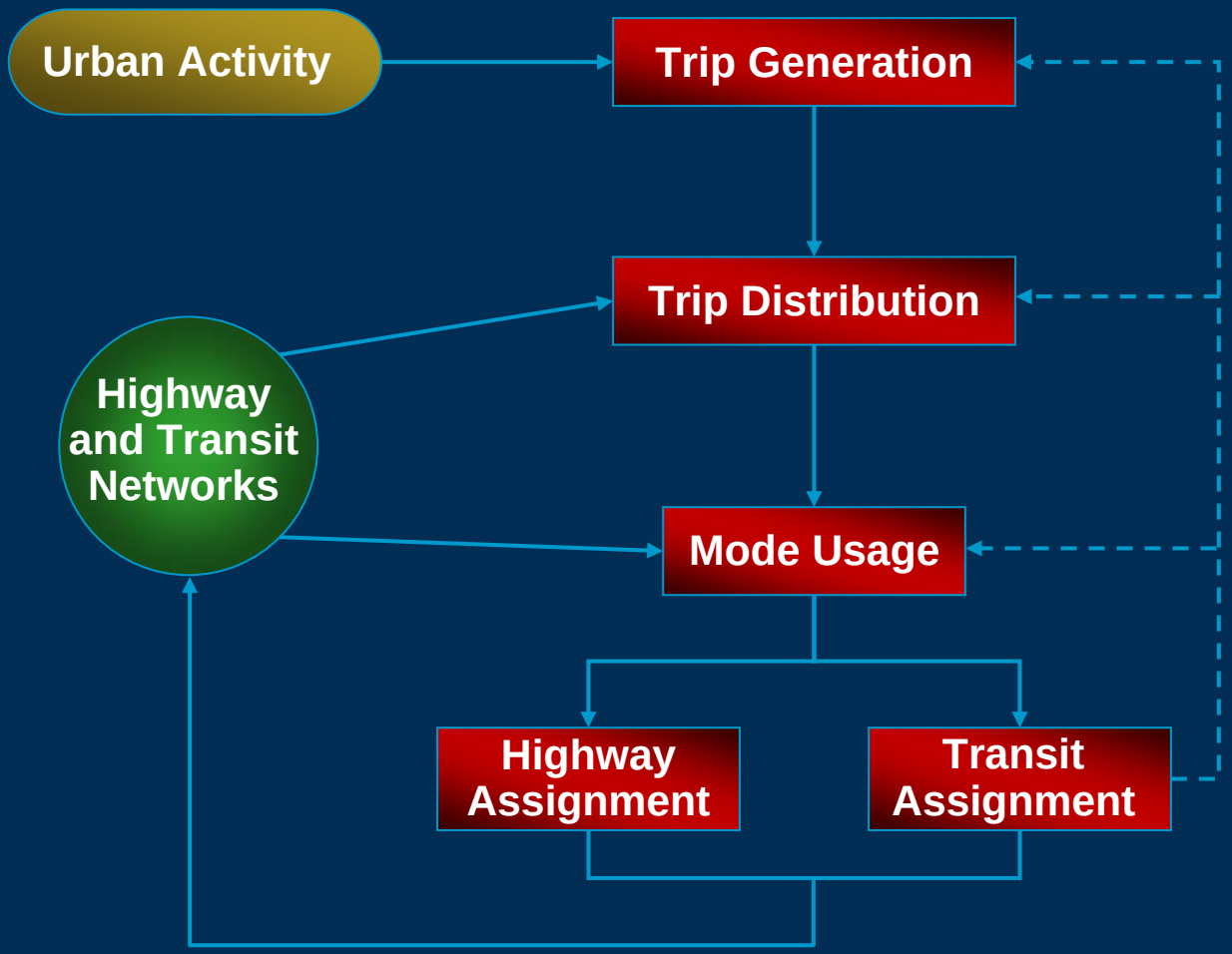
Transportation Analysis
The Technical Challenge

- Many people
- Many places
- Many ways to travel



Basic Transportation Analysis
Trip Generation



- How many trips?
- Home to Work, Shop, Other, and Non-home
- Sensitive to
  - Income
  - Auto ownership and household size

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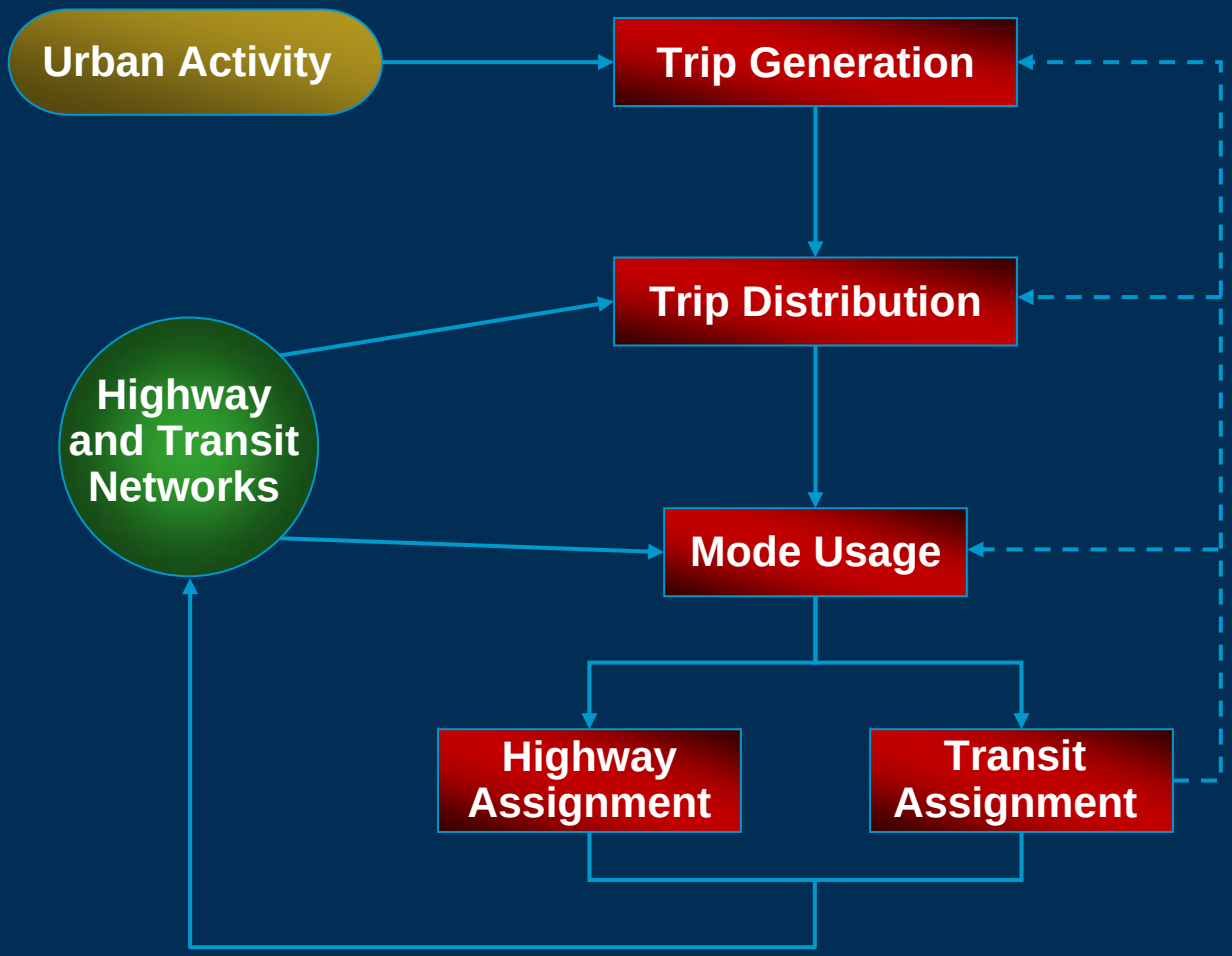
Basic Transportation Analysis
Trip Distribution



- Where do trips begin and end?
- Sensitive to
  - Travel time
  - "Resistance" to traveling extra distance

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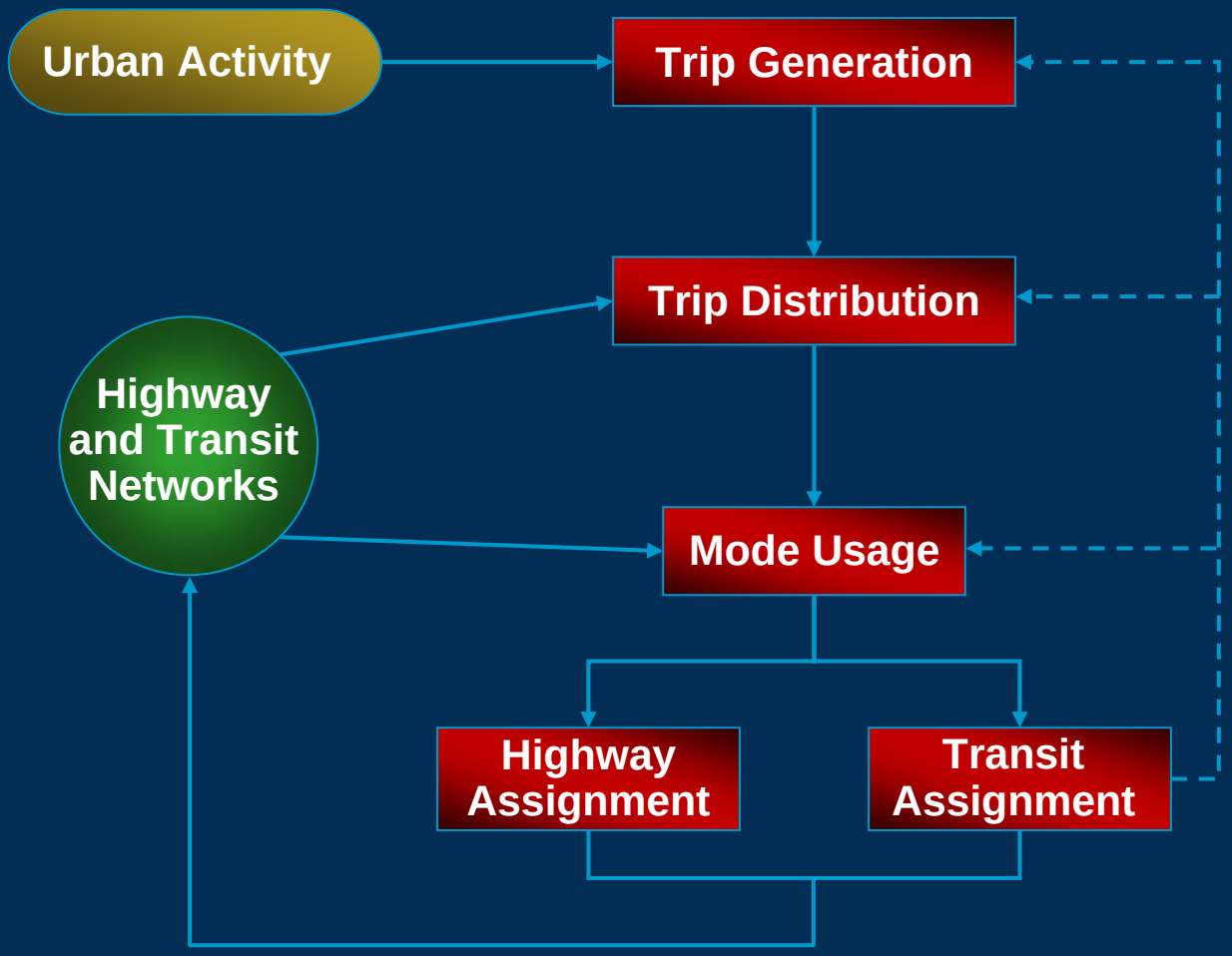
Basic Transportation Analysis
Mode Usage



- What mode of travel do you use?
- Sensitive to
  - Travel time (walk, wait, in-vehicle)
  - Cost (fare, parking, tolls, operating cost)

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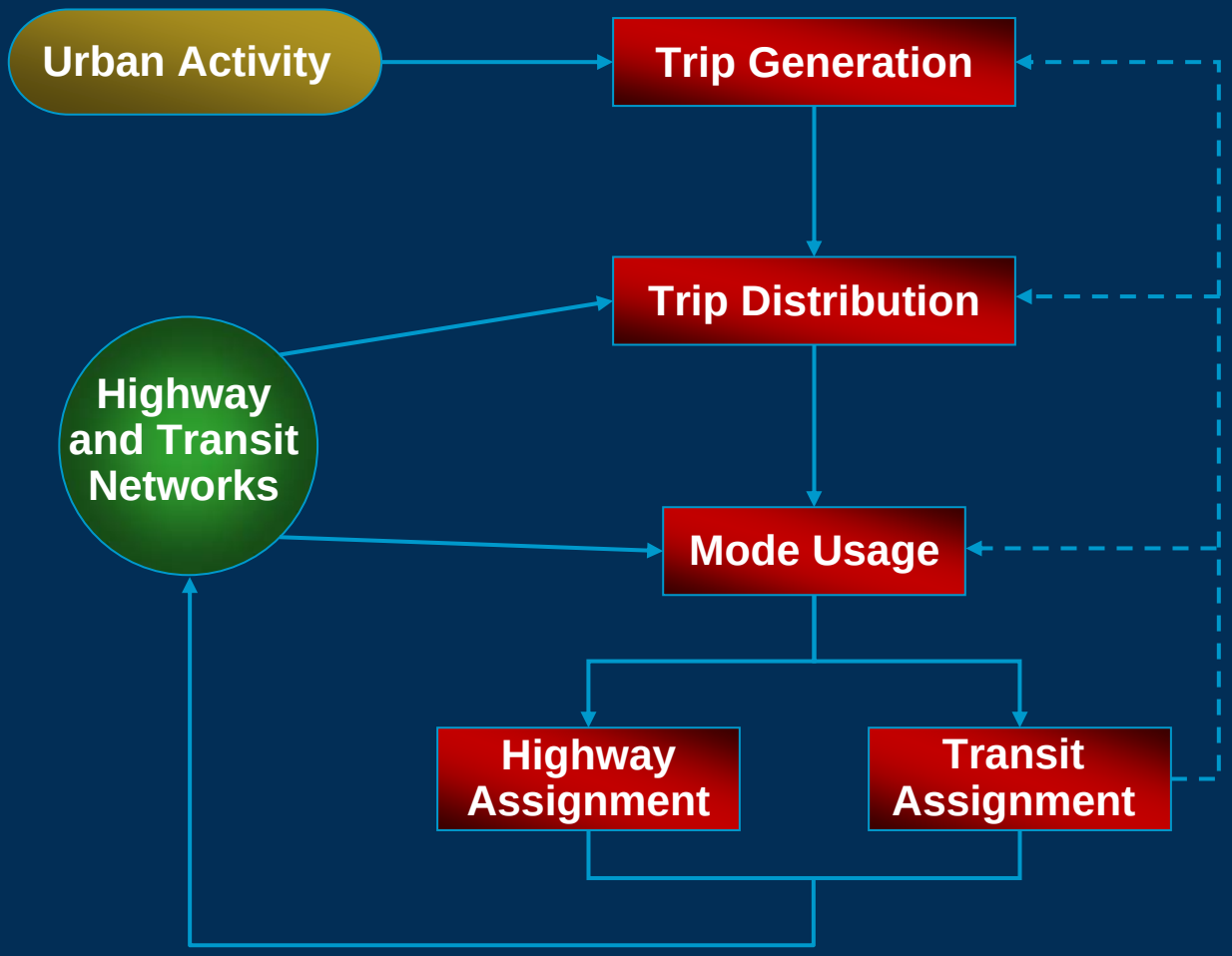
Basic Transportation Analysis
Assignment



- What route do you use?
- Sensitive to
  - Distance
  - Congestion/ time
  - Tolls (highway)
- Highway – three time periods
- Transit – two time periods

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Additional Transportation Analysis
Current Process

Regional Forecast	Subarea Forecast	Detailed Analysis

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Additional Transportation Analysis
Need for Post-Processing

- Predicting walk, bike, and circulator transit modes
- Analyzing micro-scale design characteristics
- Estimating impacts of transportation demand management policies and programs
- Predicting auto ownership impacts

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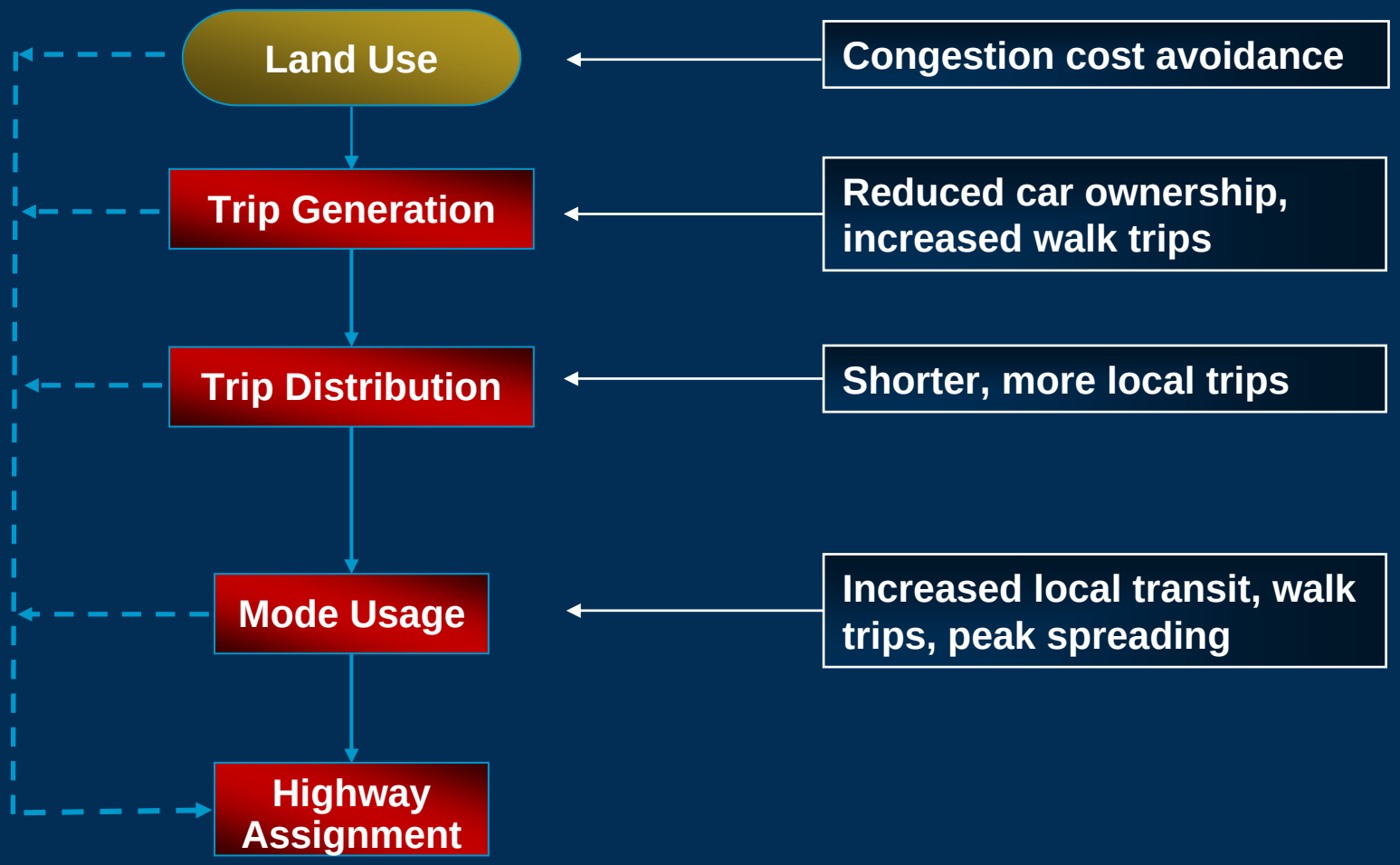
Additional Transportation Analysis
TOD Analysis – Post Processing



Source: Cervero, 2006.

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Additional Transportation Analysis
TOD Analysis – Factors

- Analysis of factors that influence transit ridership at TODs
  - Housing density
  - Land use mix
  - Vehicle ownership
  - Feeder bus service

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Additional Transportation Analysis
Transportation Demand Management

- Key TDM policies
  - Pricing-based
    - Parking
    - Fare subsidies
  - Service-based
    - Circulator bus
    - Guaranteed ride home
    - Flex time

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Transit-Oriented Development Potential
2005 WMATA Ridership Survey

- Ballston
- Court House
- Dunn Loring
- Eisenhower Ave.
- Farragut West
- Friendship Heights
- Gallery Place
- Grosvernor
- King Street
- New Carrolton
- Silver Spring
- U Street

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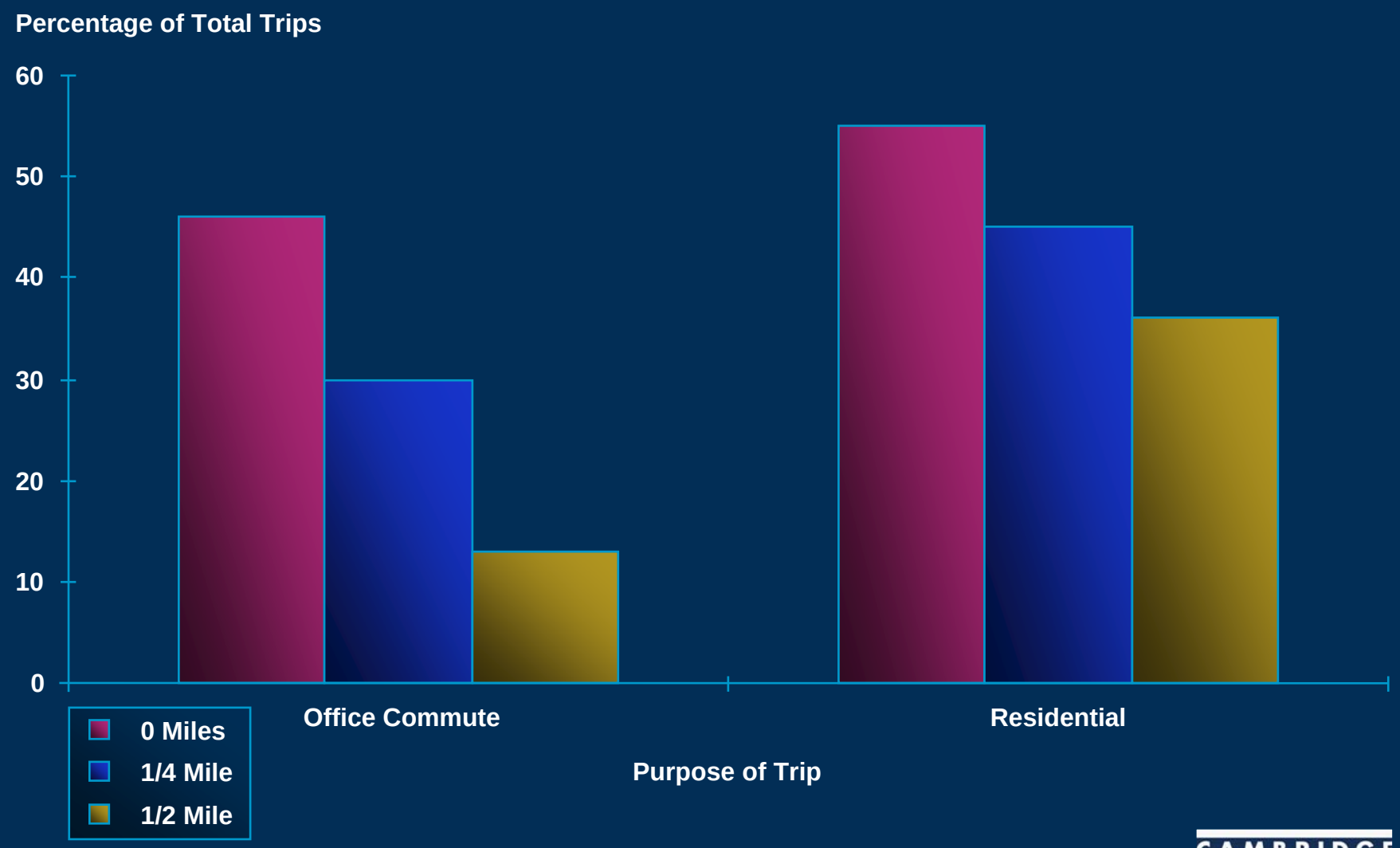
Transit Trips by Purpose and Distance from Station



Residential Mode Share for All Trips by Location

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Mode Share for Midday Trips at Office Sites

- 28% Transit
- 28% Walk
- 43% Auto

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Transportation Analysis
TOD/TDM Analysis

- **Rosslyn-Ballston (1997-2004)**
  - **+ 17.5% office growth**
  - **+ 21.5% residential growth**
  - **+ 2.3% traffic growth**
  - **Residents' transit mode share is 47% (2000)**

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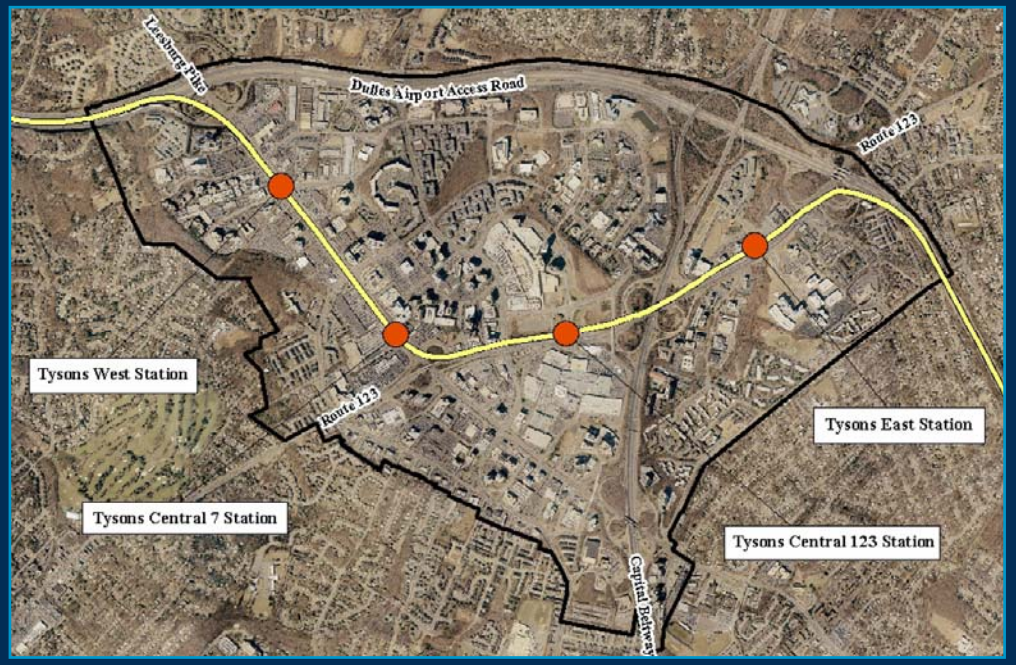
Transportation Analysis
TOD/TDM Analysis

- CalTrans TOD Study (2002)
  - Regional Impact
    - + 5% transit use
    - - 5% VMT
  - Neighborhood Impact
    - + 50% station boardings
    - - 25 to 30% VMT



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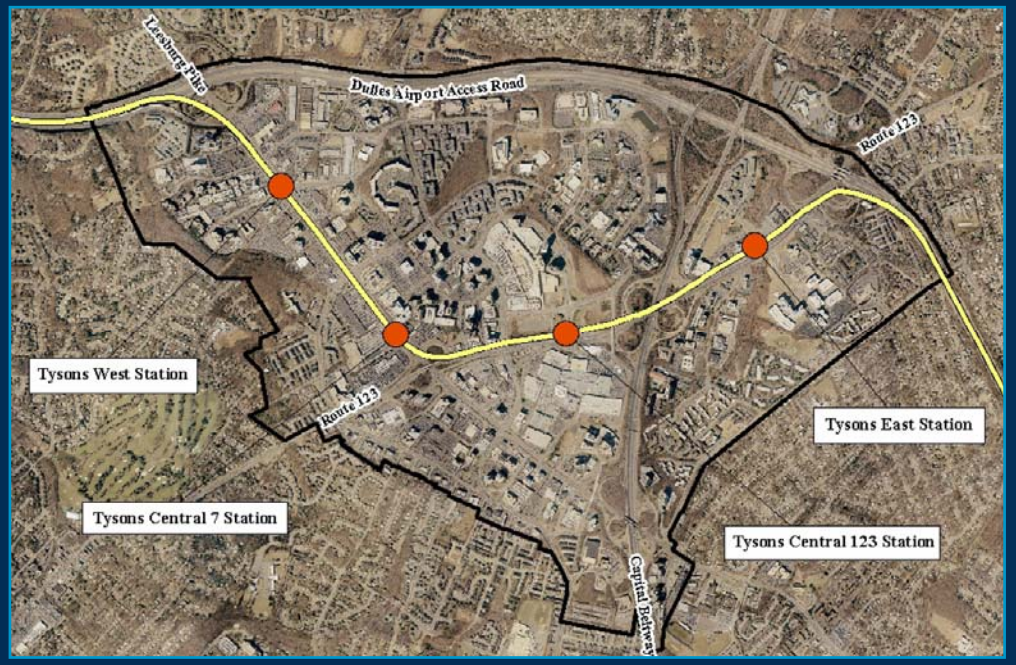
Transportation Analysis
Next Steps

- Define and test urban center model alternatives
- Define and test policy alternatives



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