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# *Evaluation of Ramps and Interchanges*

## *Tysons Corner Transportation & Urban Design Study*

Prepared for:

Fairfax County Department of Transportation

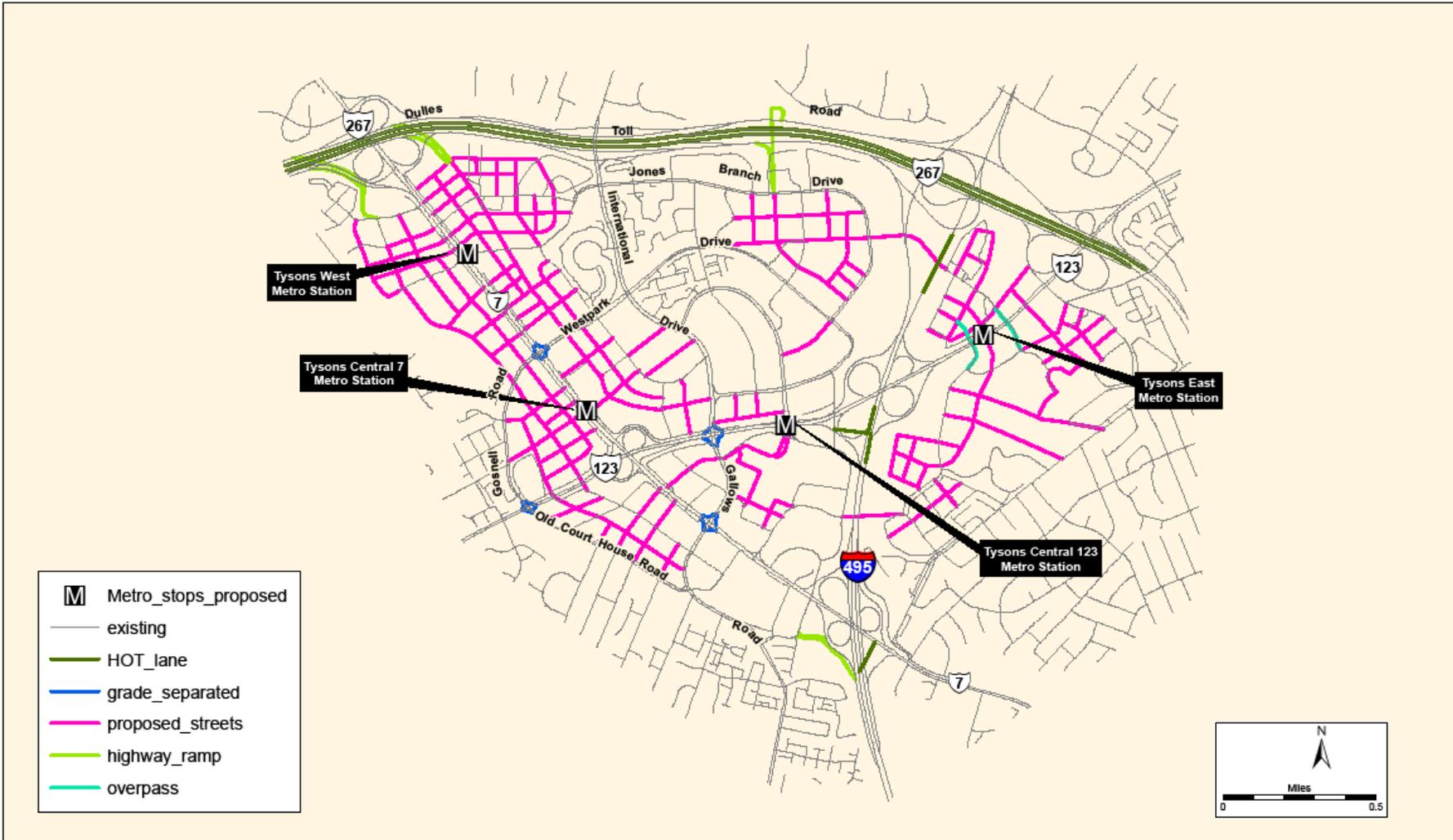
Prepared by:



In conjunction with Cambridge Systematics, Inc.

- ❑ This Study was tasked with examining the engineering and operational feasibility of additional:
  - Ramp connections to the Dulles Toll Road and Capital Beltway
  - Capital Beltway overpasses
  - Grade separated interchanges within the internal road network
- ❑ Designs were studied at the conceptual level
  - Several alternatives were evaluated for the proposed ramp connections with the most feasible option being recommended for additional analysis
  - Impacts associated with a single-point urban interchange were assessed for internal interchanges

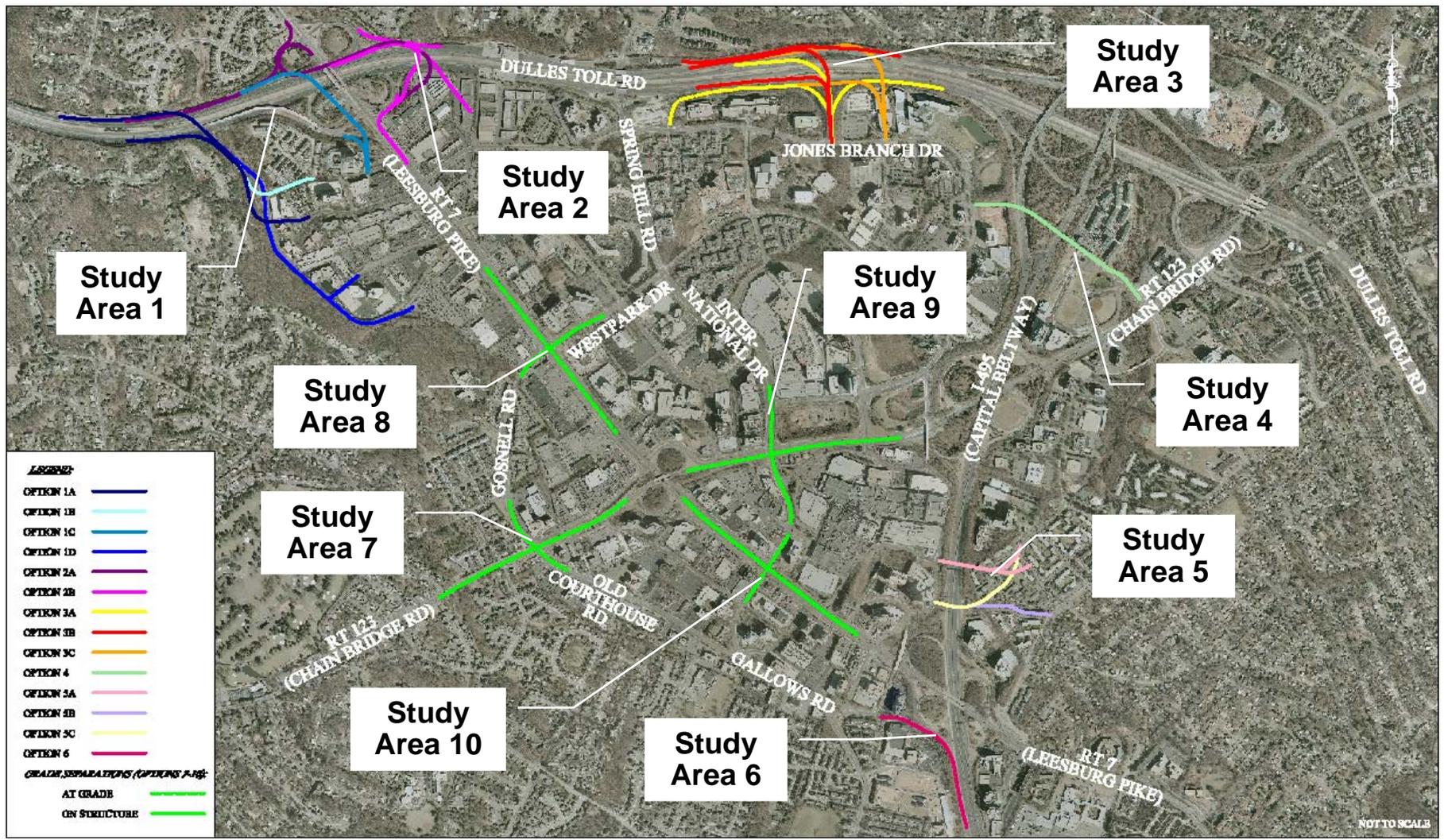
# Proposed Grid of Streets & Ramp Connections



# Proposed Grid of Streets & Ramp Connections

- ❑ The preferred grid of streets provides circulation within the boundaries of Tysons Corner but improved access points are needed to move traffic in and out of the area
- ❑ Three types of improvements were examined
  - New or modified existing ramp connections to/from the Dulles Toll Road (Study Areas 1-3)
  - Capital Beltway overpasses and connections (Study Areas 4-6)
  - Internal roadway grade separations (Study Areas 7-10)

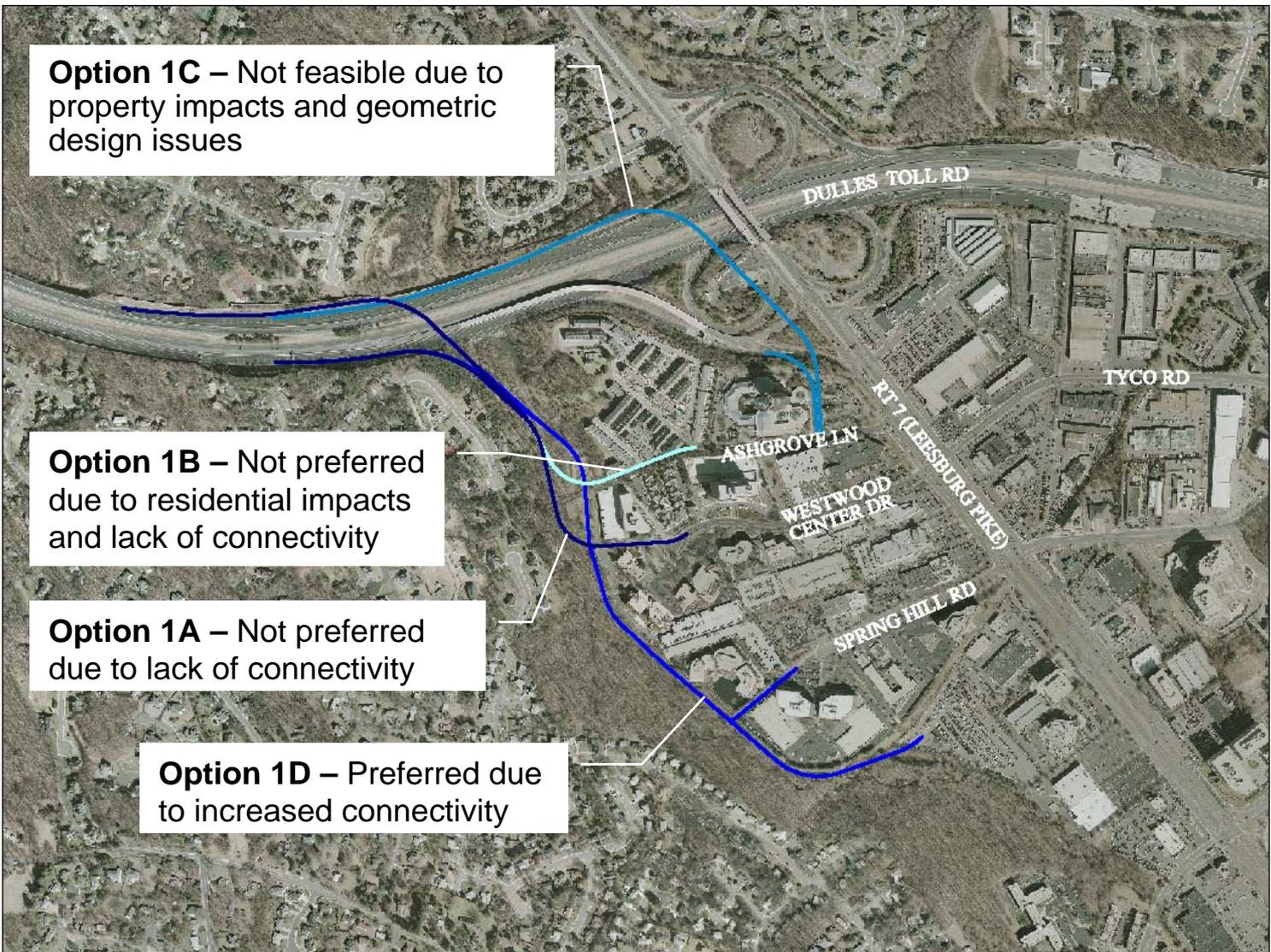
# Additional Access Points



# Additional Access Points

- ❑ Conceptual Design factors considered include:
  - AASHTO and VDOT requirements for:
    - Horizontal and vertical design criteria
    - Interchange ramp spacing
    - Weaving and merging conflict points
  - Property impacts
  - Site access
  - Utility conflicts
  - Right-of-way impacts
  - Environmental impacts
- ❑ Cost was not a consideration at this conceptual level of analysis

# Study Area 1



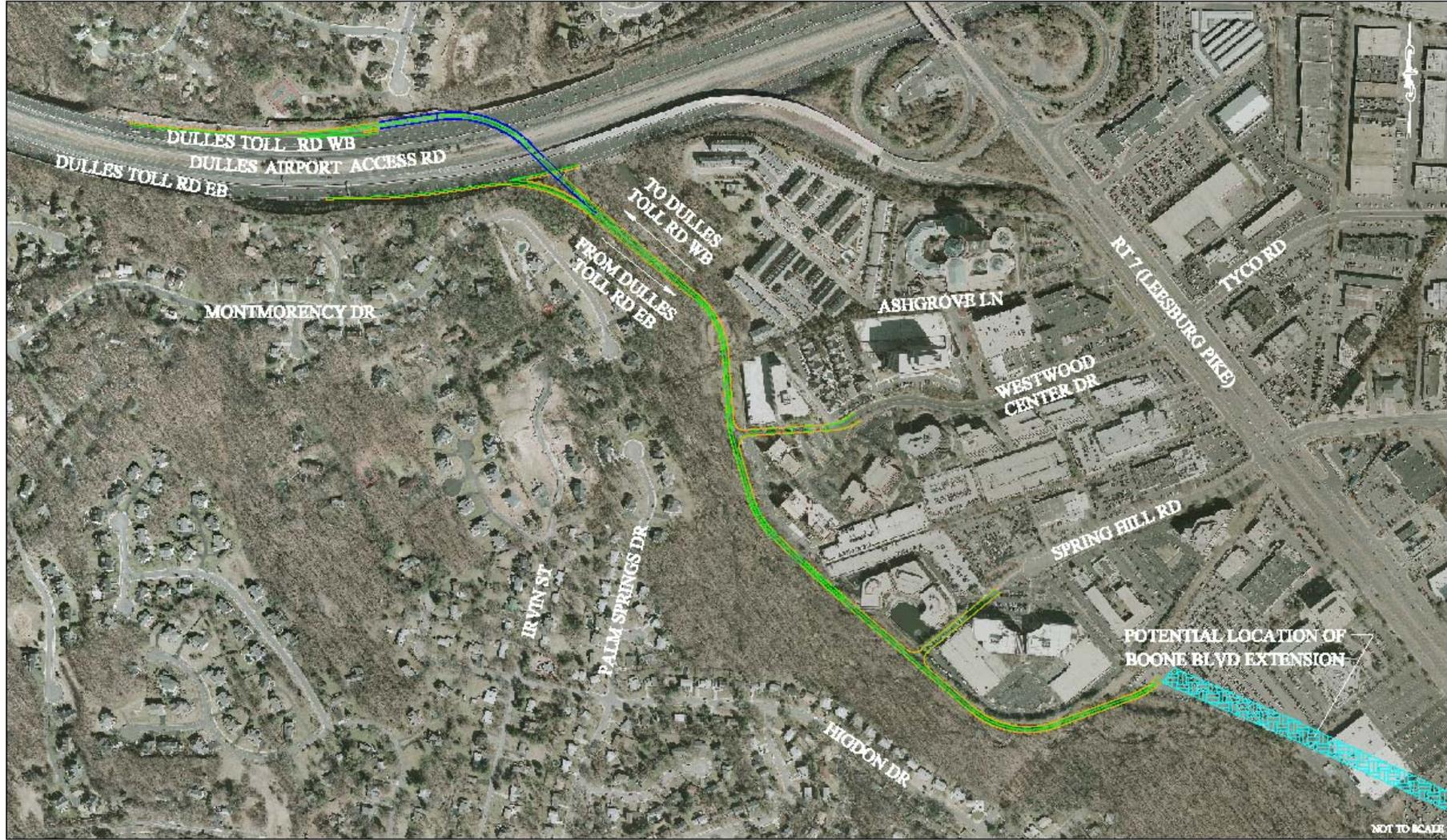
**Option 1C** – Not feasible due to property impacts and geometric design issues

**Option 1B** – Not preferred due to residential impacts and lack of connectivity

**Option 1A** – Not preferred due to lack of connectivity

**Option 1D** – Preferred due to increased connectivity

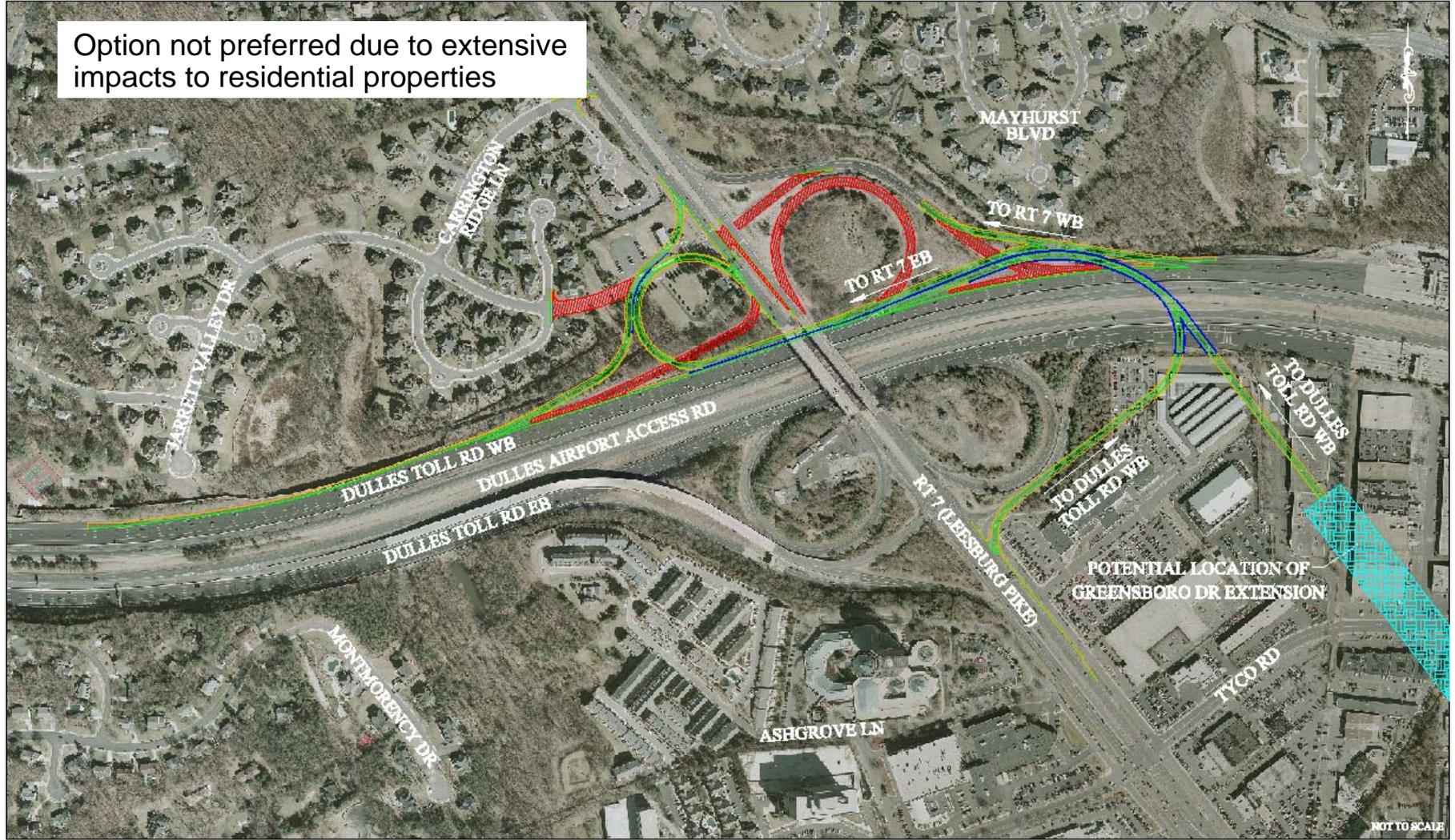
# Study Area 1 – Recommended Concept



**Option 1D – Dulles Toll Road to Boone Boulevard Extension**

# Study Area 2

Option not preferred due to extensive impacts to residential properties



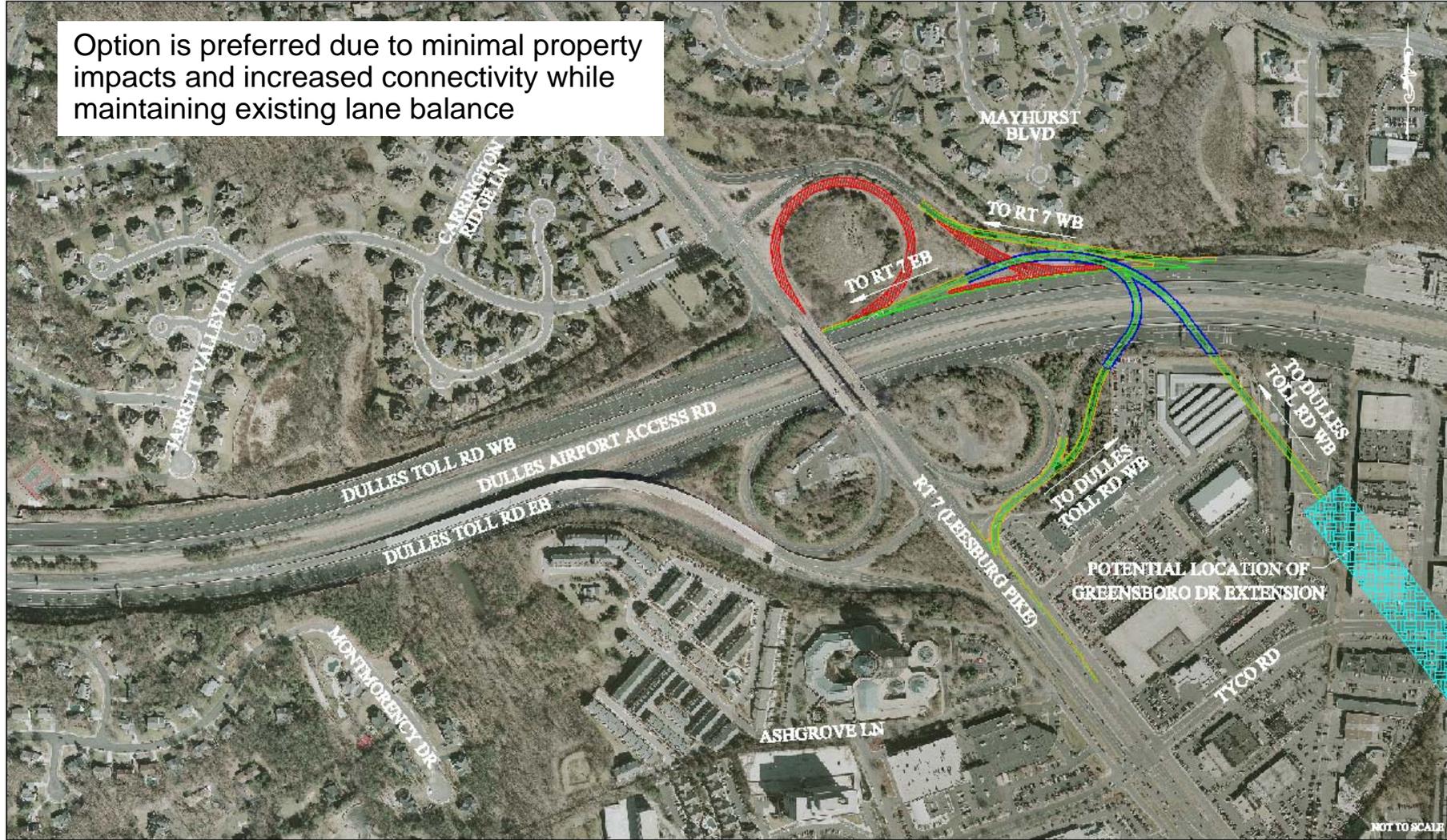
NOT TO SCALE

## Option 2A – Dulles Toll Road to Greensboro Drive Extension



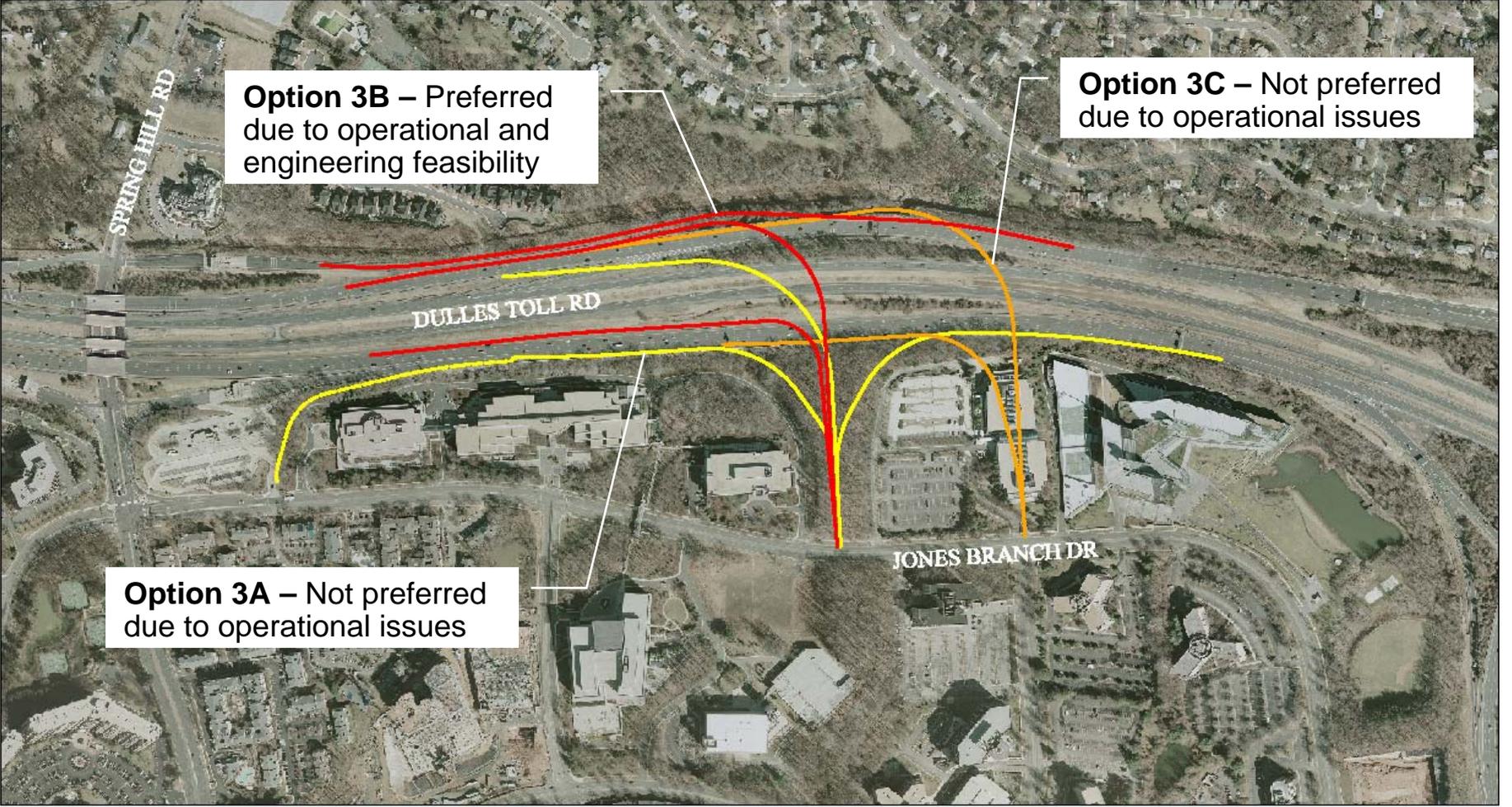
# Study Area 2 – Recommended Concept

Option is preferred due to minimal property impacts and increased connectivity while maintaining existing lane balance



Option 2B – Dulles Toll Road to Greensboro Drive Extension

# Study Area 3



# Study Area 3 – Recommended Concept



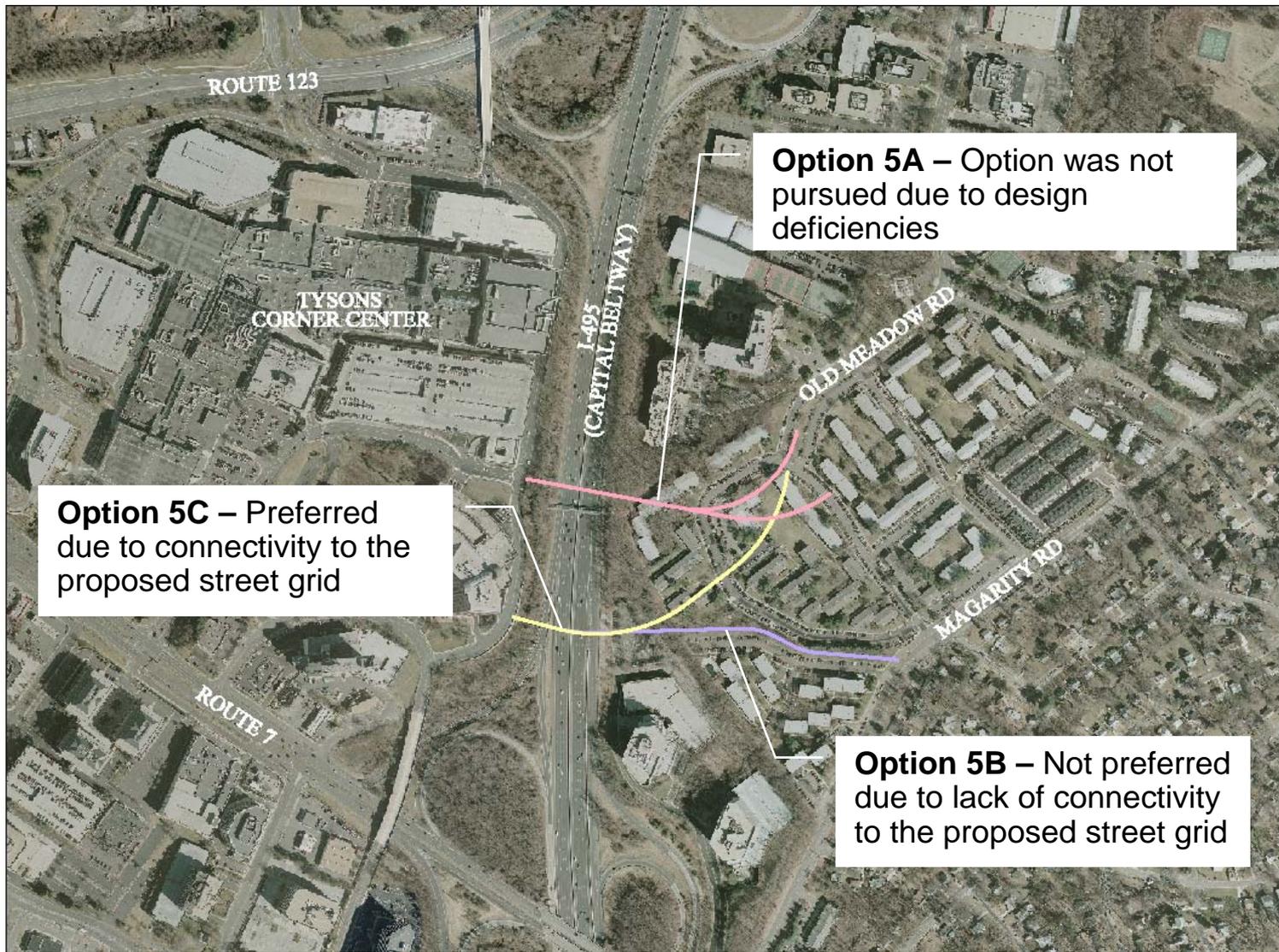
Option 3B – Dulles Toll Road to Jones Branch Drive

# Study Area 4



**Option 4 – I-495 Overpass Near Dulles Toll Rd Interchange**

# Study Area 5



# Study Area 5 – Recommended Concept



Option 5C – I-495 Overpass at Tysons Corner Center

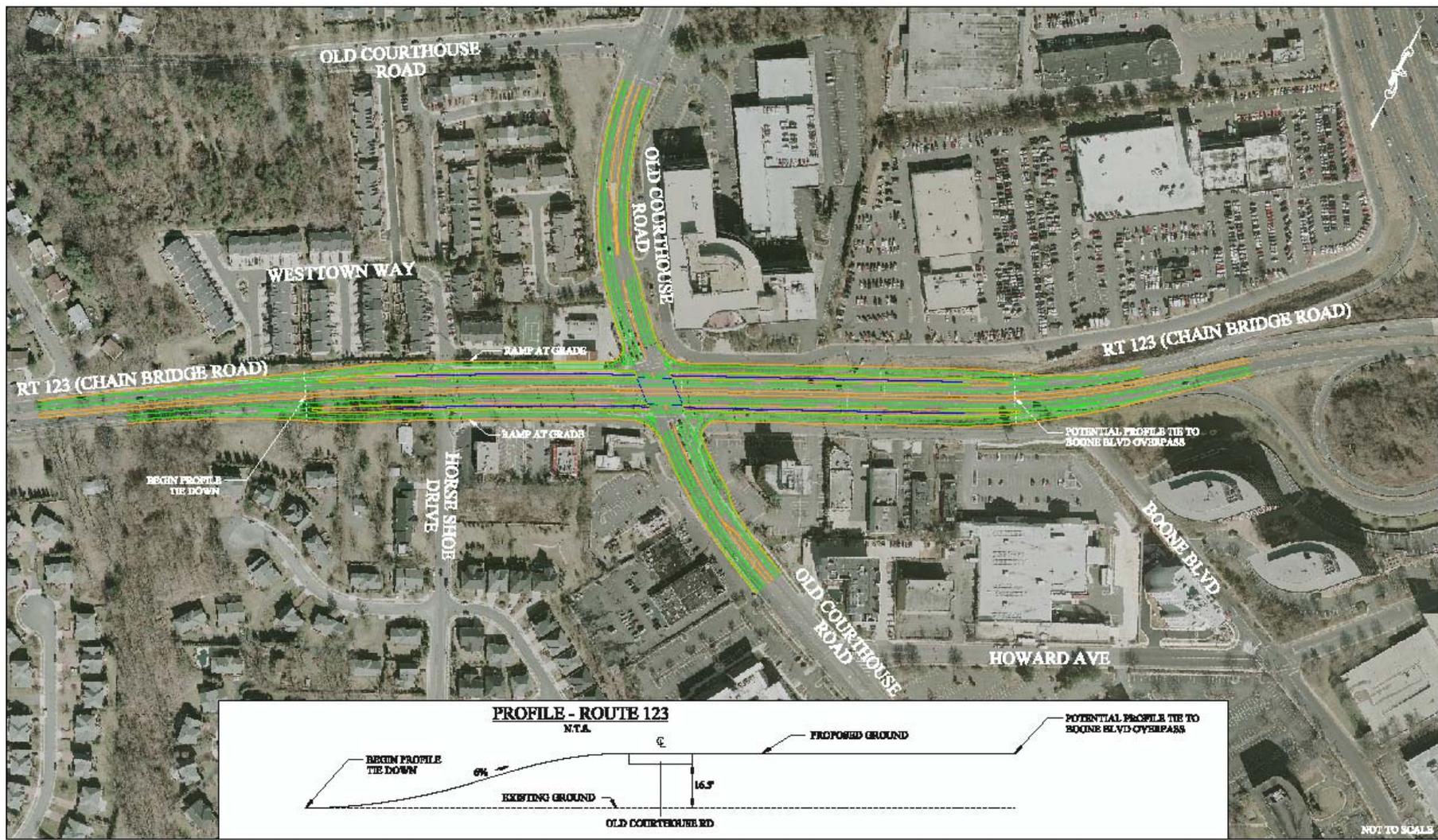
# Study Area 6



Option not pursued due to operational issues, length of interchange modification approval process and physical constraints

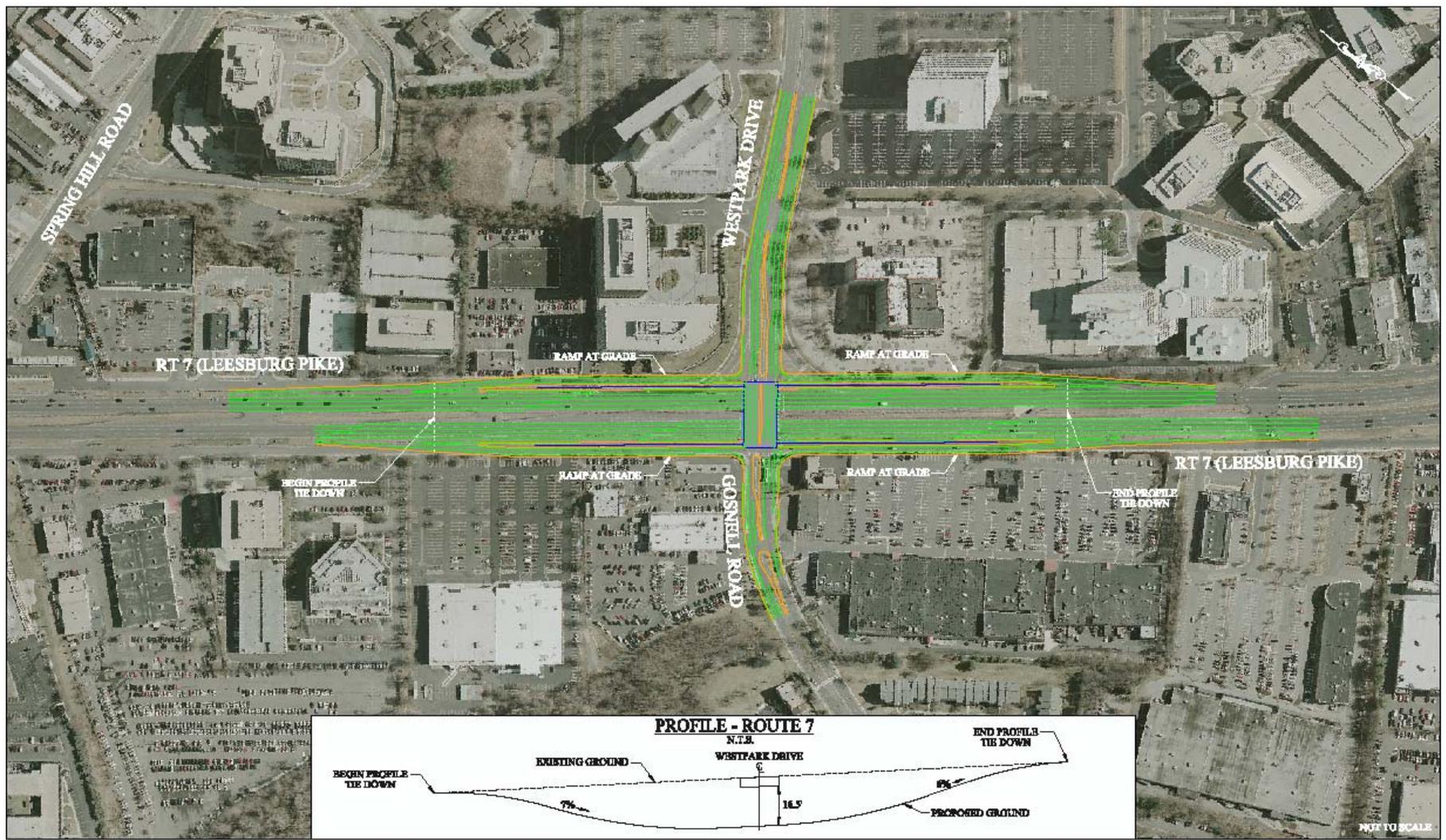
## Option 6 – Ramp to I-495 South via Route 7 EB Ramp

# Study Area 7 – Conceptual Interchange



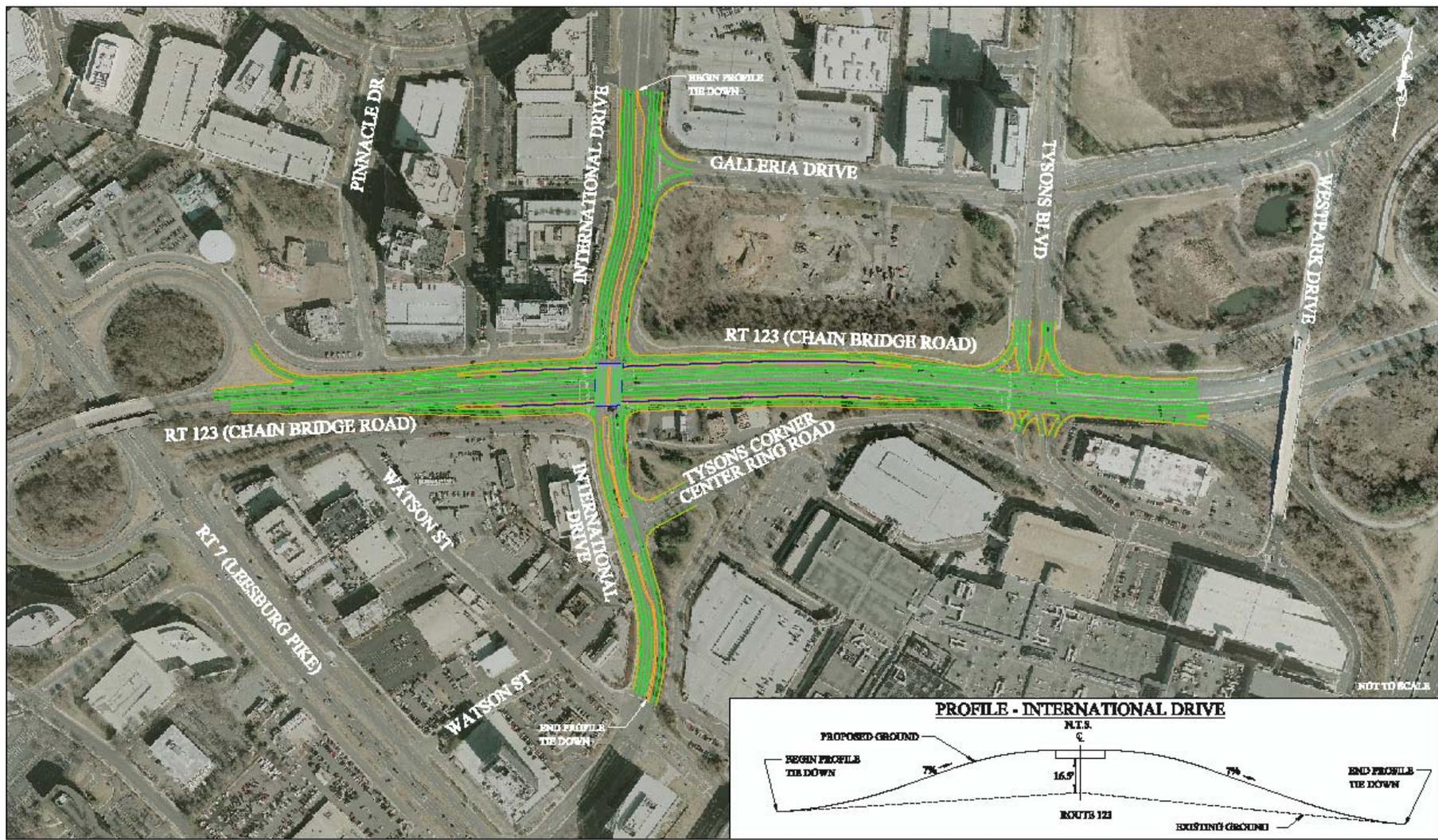
Option 7 – Route 123 and Old Courthouse Road

# Study Area 8 – Conceptual Interchange



Option 8 – Route 7 and Westpark Drive / Gosnell Road

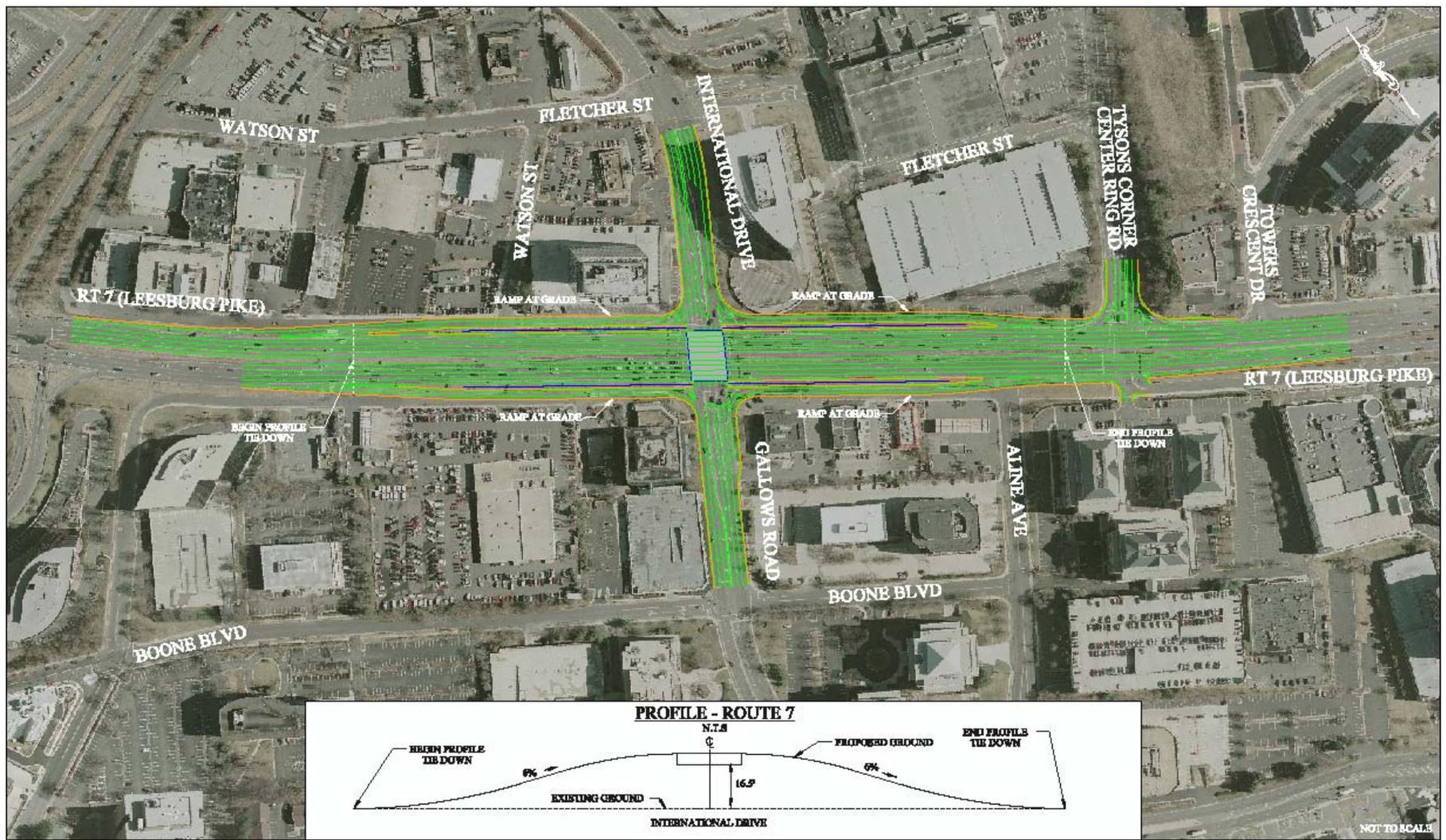
# Study Area 9 – Conceptual Interchange



Option 9 – Route 123 and International Drive



# Study Area 10 – Conceptual Interchange



Option 10 – Route 7 and International Drive / Gallows Road

# Potential Network



# Closing Remarks

- ❑ Alternatives presented were only examined at the conceptual design level and need additional engineering before being pursued further
- ❑ Further coordination is needed with:
  - VDOT regarding the HOT lanes, interchanges and the Dulles Rail Project
  - MWAA regarding impacts to the Dulles Toll Road and Dulles Airport Access Highway
  - The Boone Boulevard and Greensboro Drive study
- ❑ Traffic operations of the Dulles Toll Road need additional analysis
- ❑ Questions??