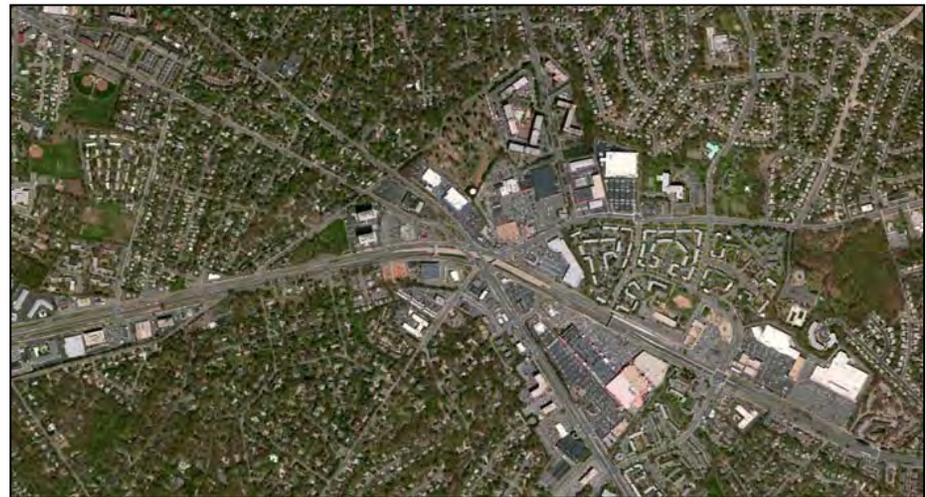




County of Fairfax, Virginia

Seven Corners Transportation Study Phase II Preliminary Findings

Seven Corners Task Force Meeting
March 11, 2014





Presentation Outline

- Transportation Study Objectives
- Overview of Three Transportation Network Concepts
- Measures of Effectiveness (MOEs)
- Preliminary Traffic Analysis Assessment
- Evaluation of non-vehicular Measures



Objectives

- Seven Corners Transportation Study – Phase II
 - Assess future land use scenario and transportation networks developed by the Seven Corners Task Force.
 - Identify multimodal transportation solutions for the Seven Corners
 - Identify and evaluate alternative interchange concepts.
 - Identify mitigation measures to address current and future traffic problems.



Evaluation Criteria for Six Concepts

Six Concepts Presented Three Analyzed Further

| Theme | Evaluation Criteria | Alt 1: Diverging Diamond | Alt 2: Split Diamond with Couplet | Alt 3: Single Point Interchange | Alt 4: Two Half Diamonds | Alt 5: Four Corners | Alt 6: Jughandle Configuration |
|--|---|--------------------------------|---|---------------------------------------|--------------------------------|---------------------------|--------------------------------------|
| 1 Vehicle Mobility | | | | | | | |
| A | Includes a new overcrossing of US-50 | ● | ● | ● | ● | ● | ● |
| B | Provides local roadway connectivity | ○ | ◐ | ○ | ● | ◐ | ● |
| C | Impacts to high volume origin-destination routes | ○ | ◐ | ○ | ◐ | ◐ | ◐ |
| D | Improve vehicle mobility | ◐ | ● | ◐ | ◐ | ◐ | ◐ |
| 2 Land Use | | | | | | | |
| A | Facilitates implementation of Seven Corners Task Force Land Use plan | ◐ | ● | ◐ | ● | ◐ | ● |
| B | Impacts to Eden Center (physical and/or access) | ◐ | ◐ | ○ | ◐ | ◐ | ◐ |
| C | Ramp locations impede parcel access | ◐ | ◐ | ○ | ● | ○ | ● |
| 3 Constructability | | | | | | | |
| A | Ability to phase and maintain traffic during construction | ○ | ◐ | ○ | ● | ◐ | ● |
| B | Construction costs | ○ | ○ | ○ | ○ | ◐ | ○ |
| 4 Right-of-way Impacts | | | | | | | |
| A | Right-of-way impacts | ◐ | ○ | ○ | ● | ● | ● |
| B | Impacts to Oakwood Cemetery | ◐ | ◐ | ○ | ◐ | ◐ | ◐ |
| C | Impacts to existing stable residential neighborhoods (physical and/or access) | ○ | ◐ | ○ | ◐ | ● | ◐ |
| 5 Transit, Pedestrian, and Bicycle Mobility | | | | | | | |
| A | Ability to accommodate transit services | ◐ | ● | ◐ | ● | ◐ | ◐ |
| B | Pedestrian and bicycle travel on VA 7 | ○ | ◐ | ○ | ● | ◐ | ● |

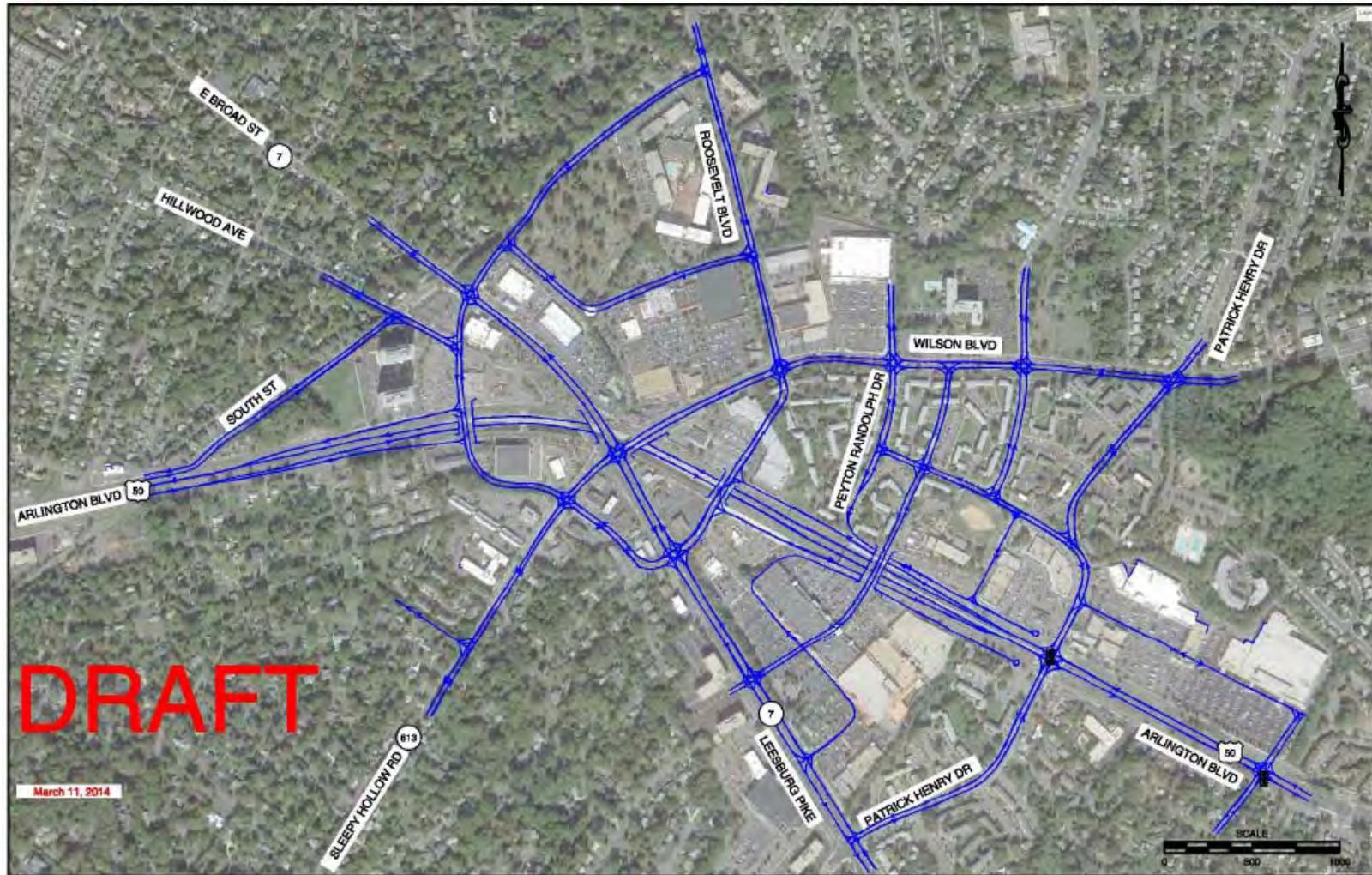
○ Low (undesirable) ◐ Medium ● High (desirable)



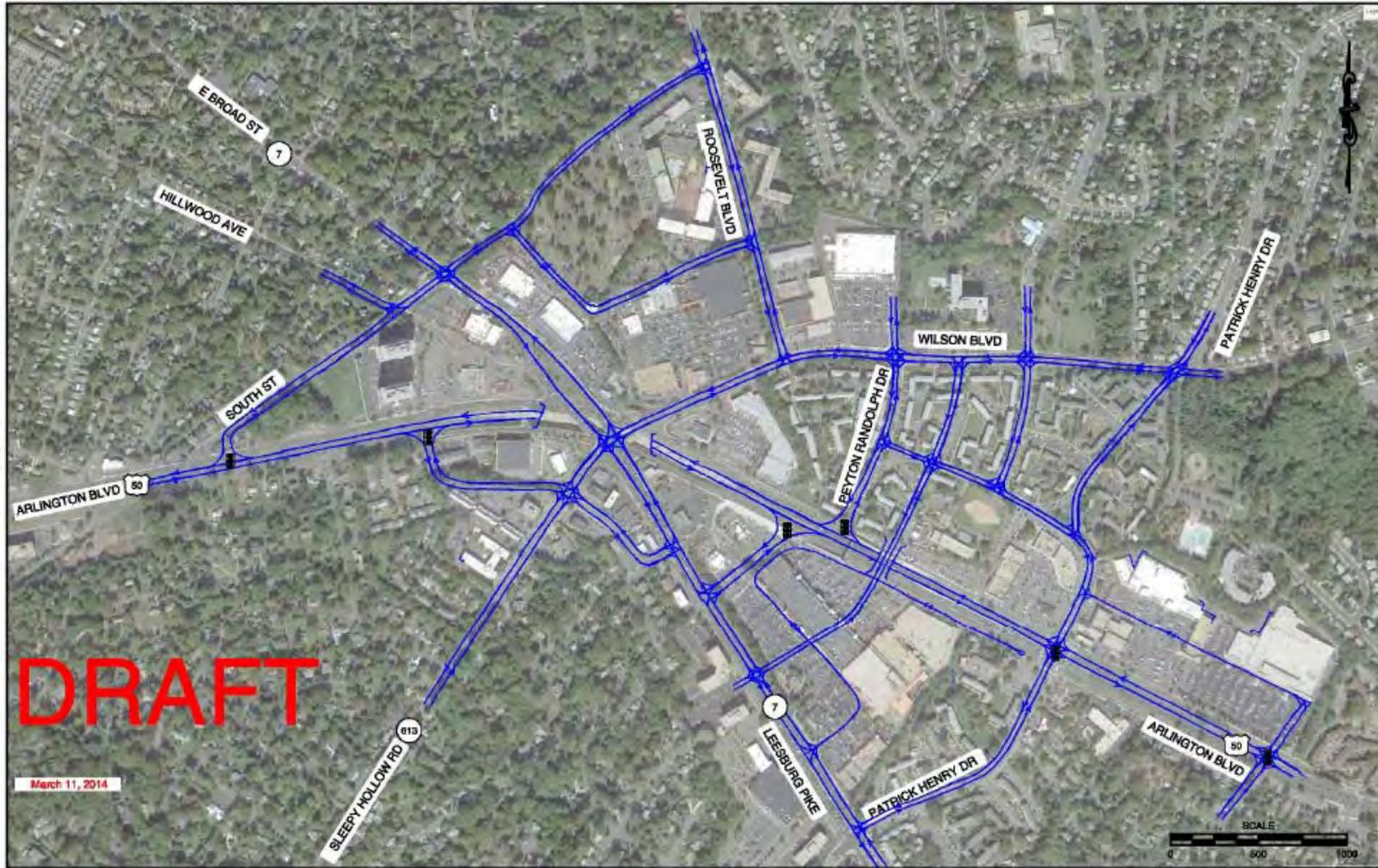
Interchange Concept A- Split Diamond with Couplet (formerly Concept 2A/5B)



Interchange Concept B- Two Half Diamonds (formerly Concept 4)



Interchange Concept C- Jughandles (formerly Concept 6)





Measures of Effectiveness (MOEs)

- Multimodal Connectivity
 - Vehicular Movement
 - Pedestrian and Bicycle Access
 - Transit Services
 - Regional and Local

- Implementation
 - Cost/Right-of-Way
 - Phasing

- Task Force Land Use Vision

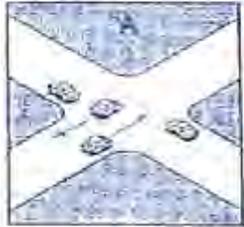
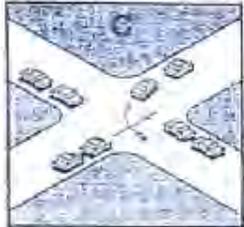
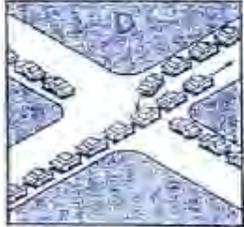
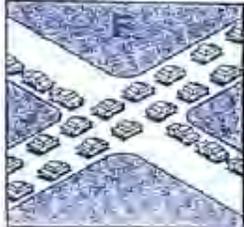


Metrics Used to Assess Traffic Conditions

- Level of Service (LOS)/Delay
- Queue lengths at intersections
- Intersection Configuration (ease of use)



Intersection Level of Service (LOS)

| | <u>L.O.S.</u> | Roadway Segments or Controlled Access Highways | <u>Intersections</u> | |
|-------------|---------------|--|---|---|
| ≤ 10 Sec | A | Free flow, low traffic density. | No vehicle waits longer than one signal indication. |  |
| > 10-20 Sec | B | Delay is not unreasonable, stable traffic flow. | On a rare occasion motorists wait through more than one signal indication. |  |
| > 20-35 Sec | C | Stable condition, movements somewhat restricted due to higher volumes, but not objectionable for motorists. | Intermittently drivers wait through more than one signal indication, and occasionally backups may develop behind left turning vehicles, traffic flow still stable and acceptable. |  |
| > 35-55 Sec | D | Movements more restricted, queues and delays may occur during short peaks, but lower demands occur often enough to permit clearing, thus preventing excessive backups. | Delays at intersections may become extensive with some, especially left-turning vehicles waiting two or more signal indications, but enough cycles with lower demand occur to permit periodic clearance, thus preventing excessive back-ups. |  |
| > 55-80 Sec | E | Actual capacity of the roadway involves delay to all motorists due to congestion. | Very long queues may create lengthy delays, especially for left turning vehicles. | |
| 10 > 80 Sec | F | Forced flow with demand volumes greater than capacity resulting in complete congestion. Volumes drop to zero in extreme cases. | Backups from locations downstream restrict or prevent movement of vehicles out of approach creating a storage area during part or all of an hour. | |

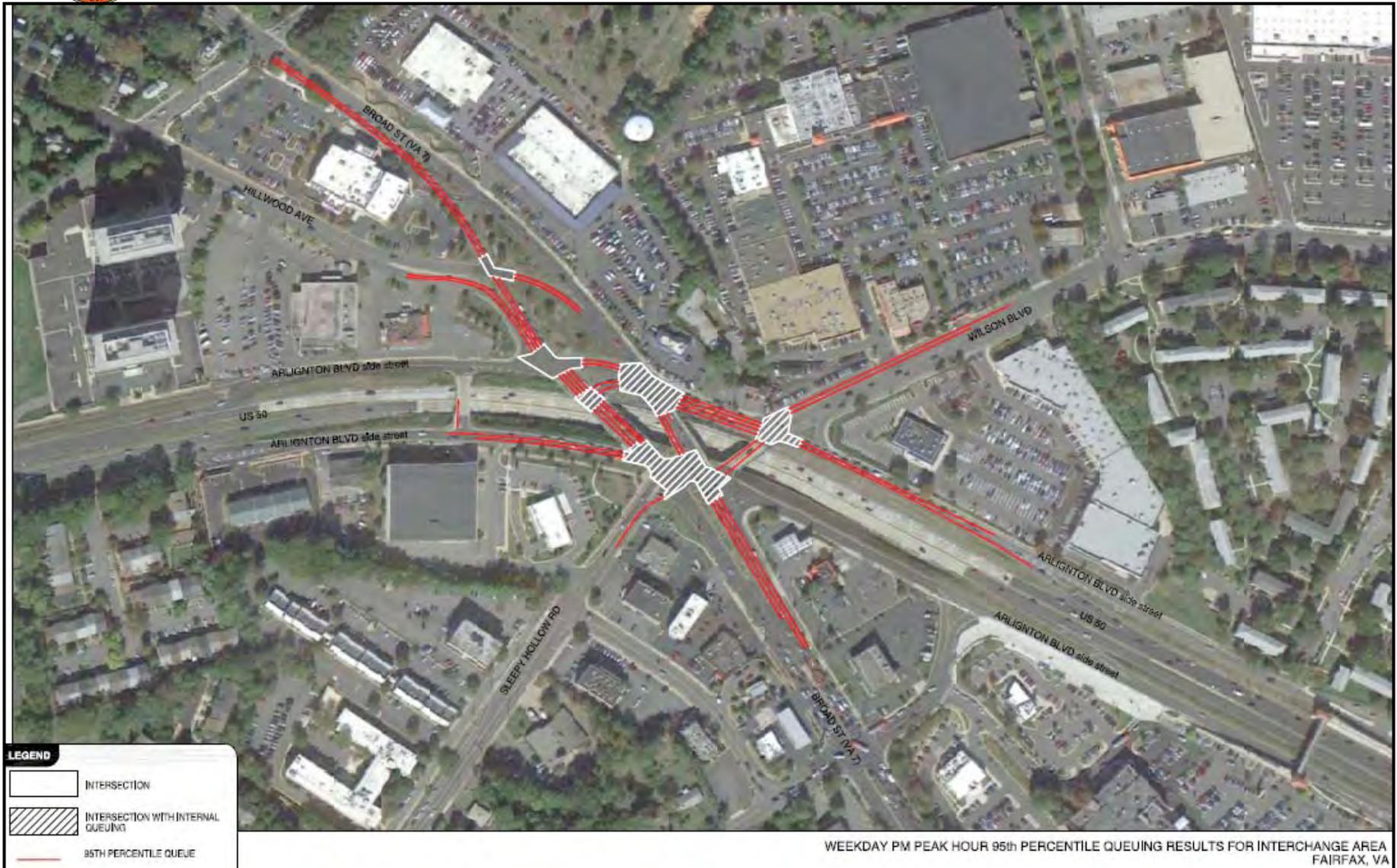


Existing Conditions – PM LOS Results





Existing Conditions – PM Queuing Results

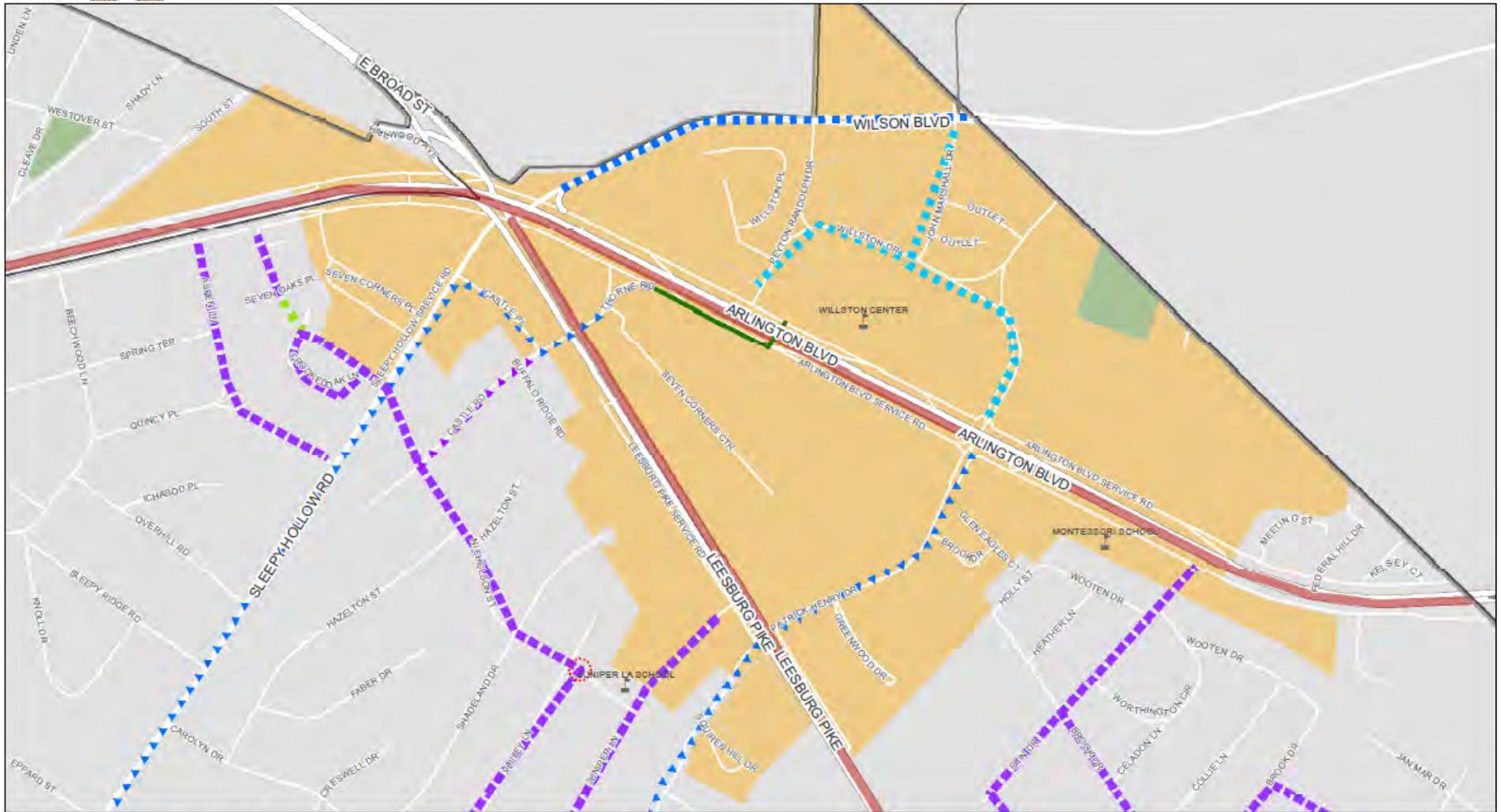


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Measures of Effectiveness – Multimodal Connectivity

- Vehicular Movement
 - Simplified Interchange area
 - Connections across Route 50
 - More direct path connections
 - Improved connection of the Sleepy Hollow Community with the Business area
- Pedestrian and Bicycle Access
 - Ability to implement goals of the Bicycle Master Plan
 - Multiuse trail along Route 50
 - Ability to walk/bike from Falls Church to Fairfax County along Route 7
 - Better/Safer Access to regional amenities (parks and trails in area)
- Transit services
 - Accommodates transit center (today and in the future)
 - More direct connection to East Falls Church Metro
 - Ability to accommodate high quality on Route 7
 - Allows for circulator system to operate efficiently



Recommended Bikeway Network

Seven Corners Bicycle Master Plan



- Bike Access Links and Crossings
- Bike Lane
- Sharrow
- Climbing Lane
- Shared Use Roadway
- Shared Roadway with Safety Treatment
- Shared Use Path



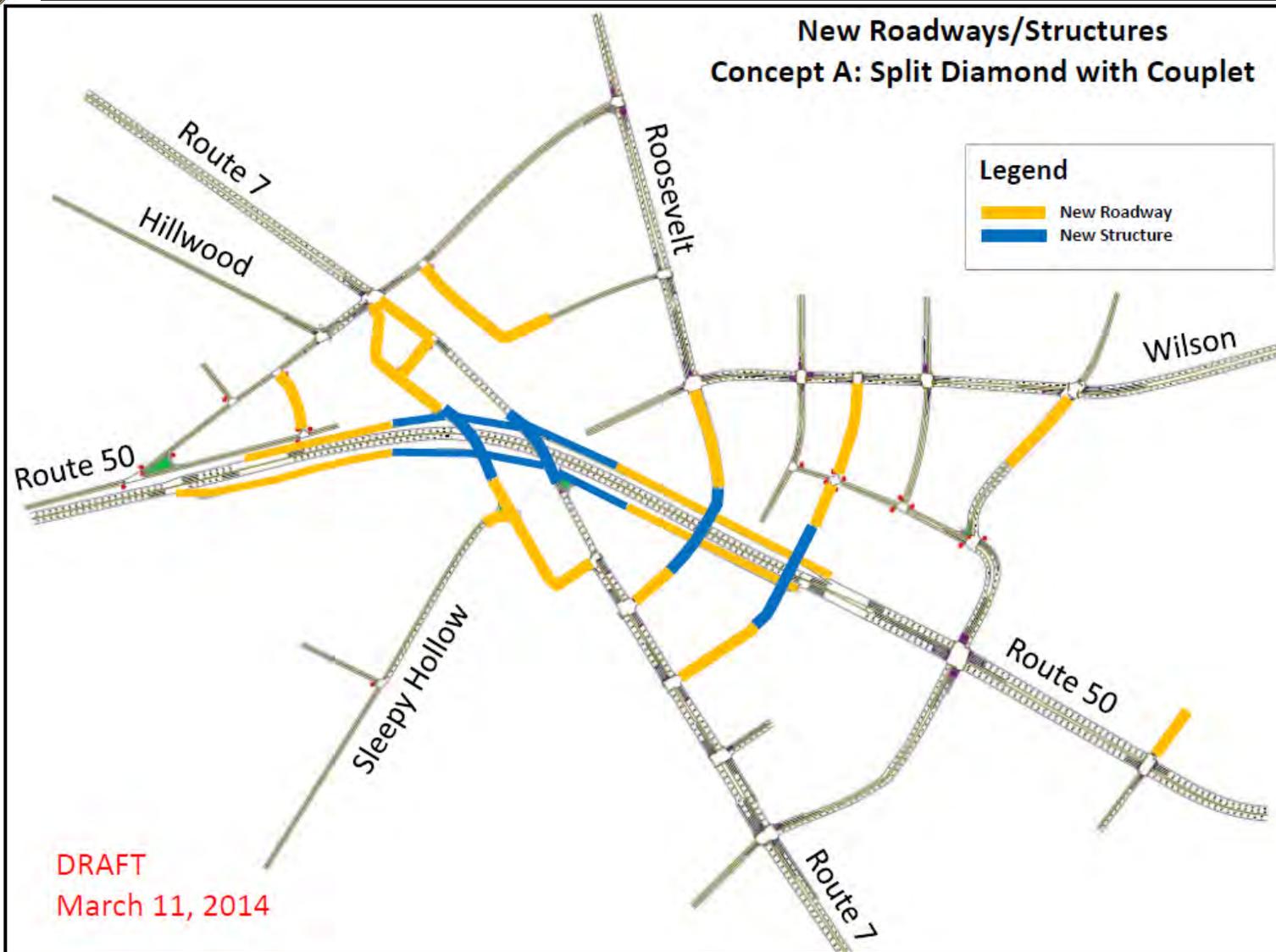
Measures of Effectiveness - Implementation

(Draft and Preliminary)

- Ability to Phase
- Cost
- Feasibility (Right of Way impacts)

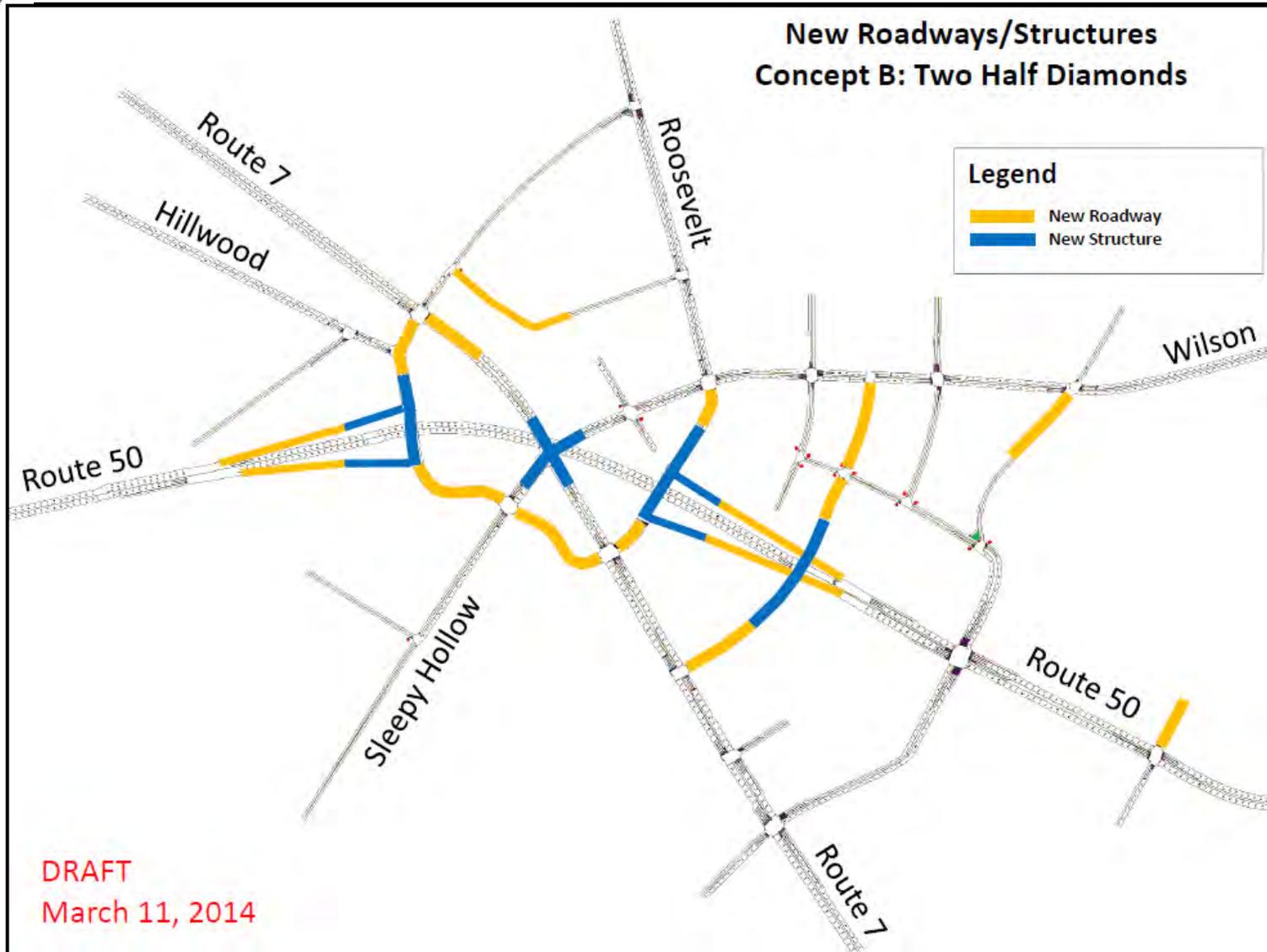


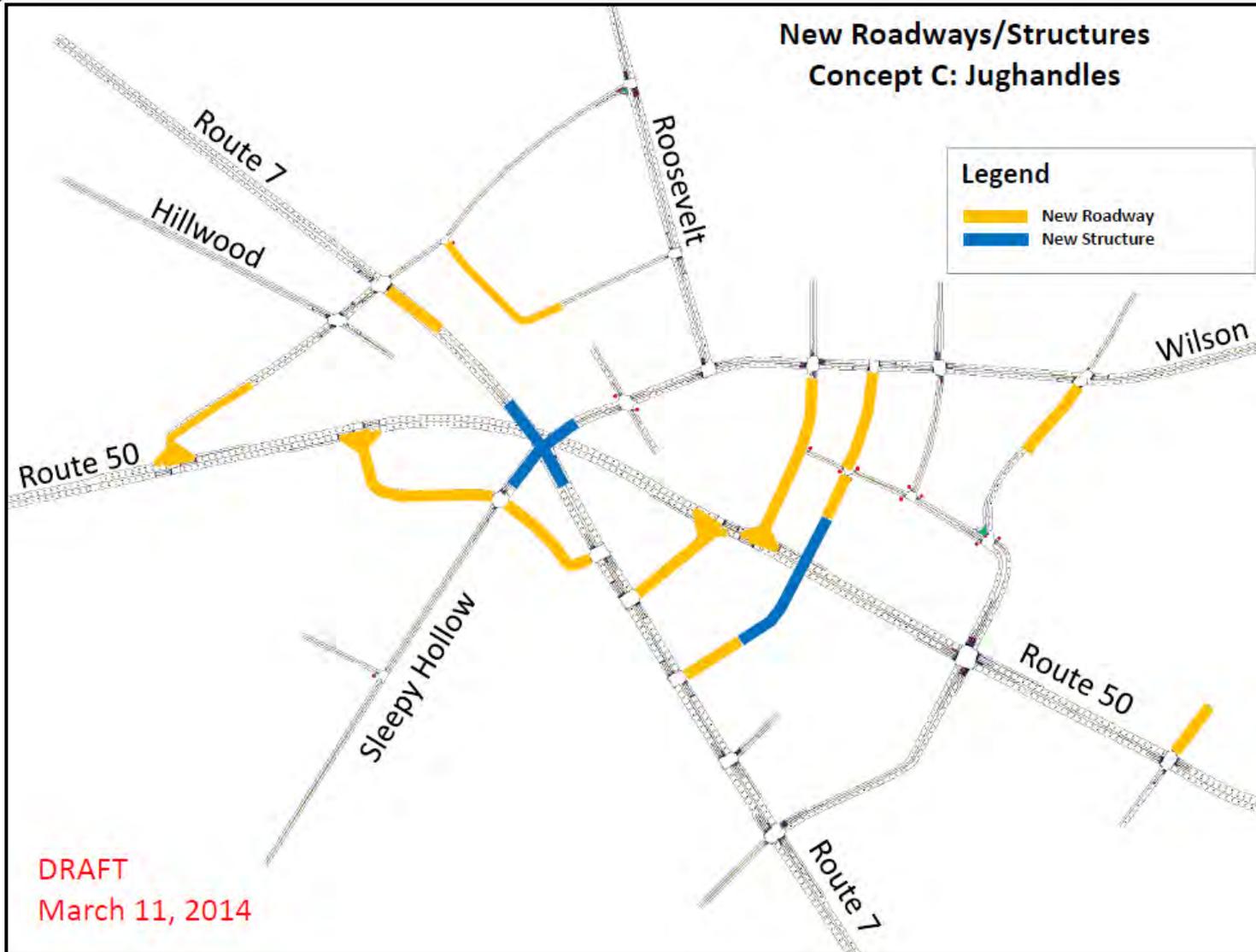
MOE - Implementation



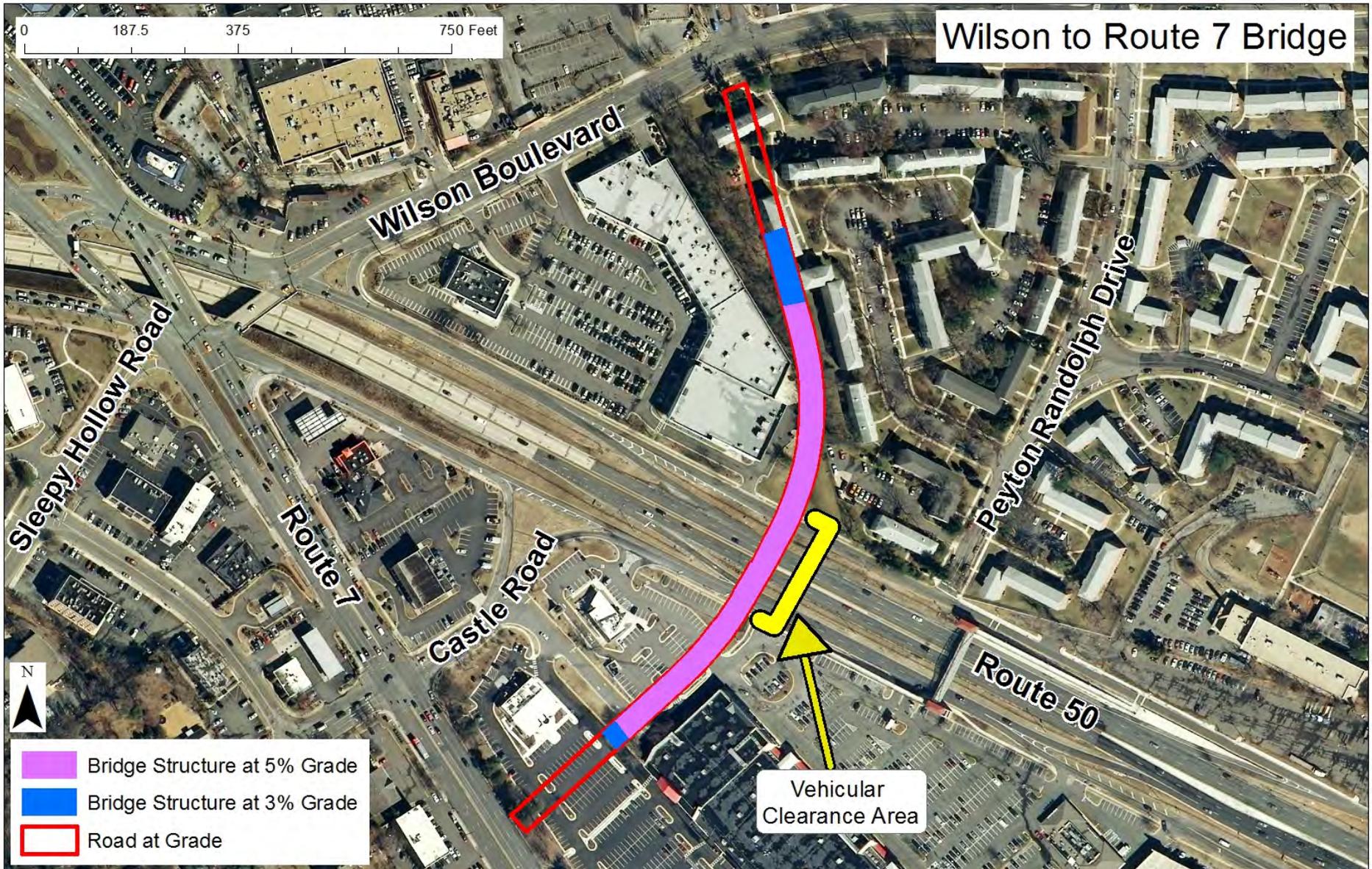


MOE - Implementation

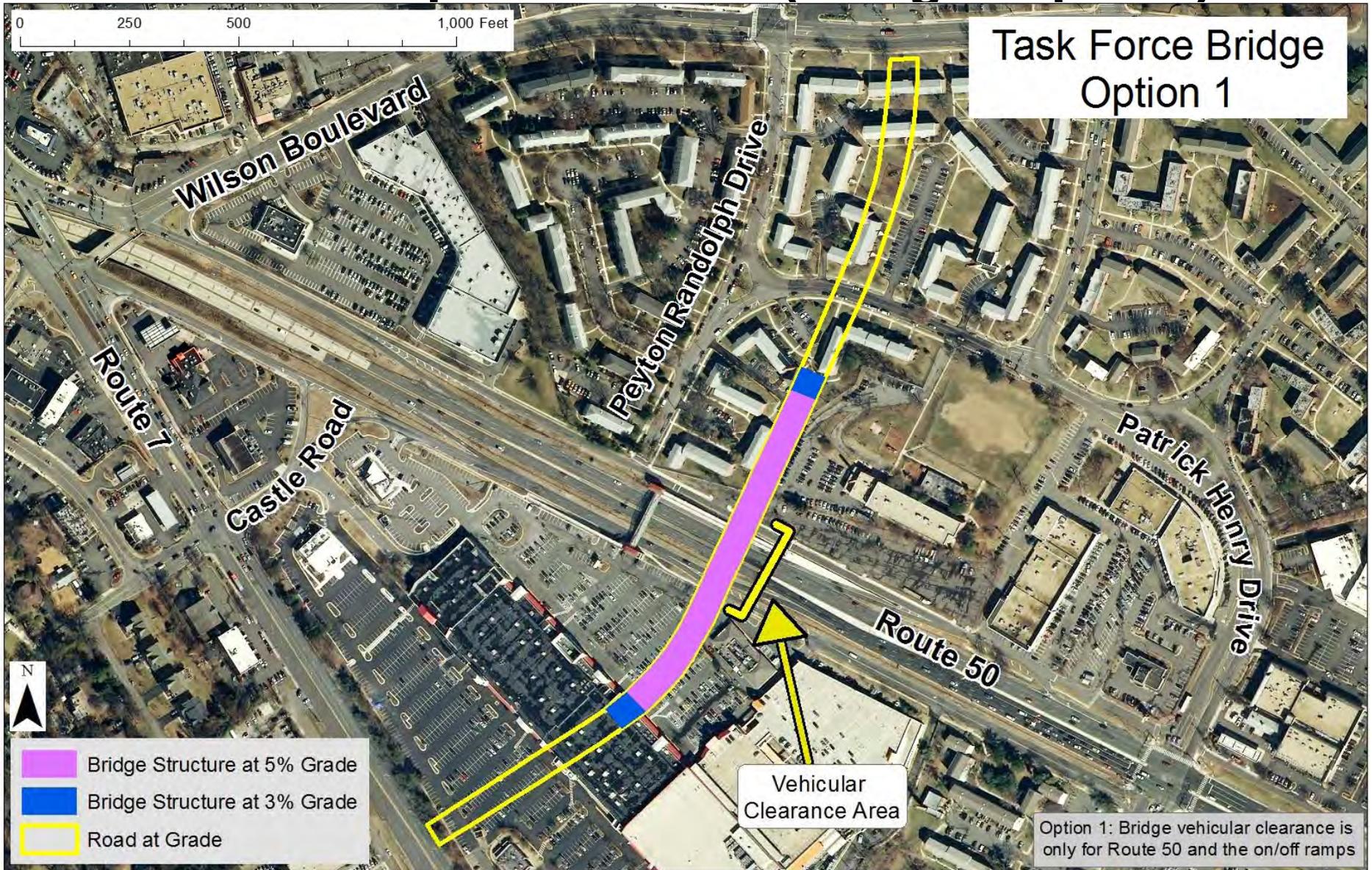




MOE – Implementation (Bridge Impacts)

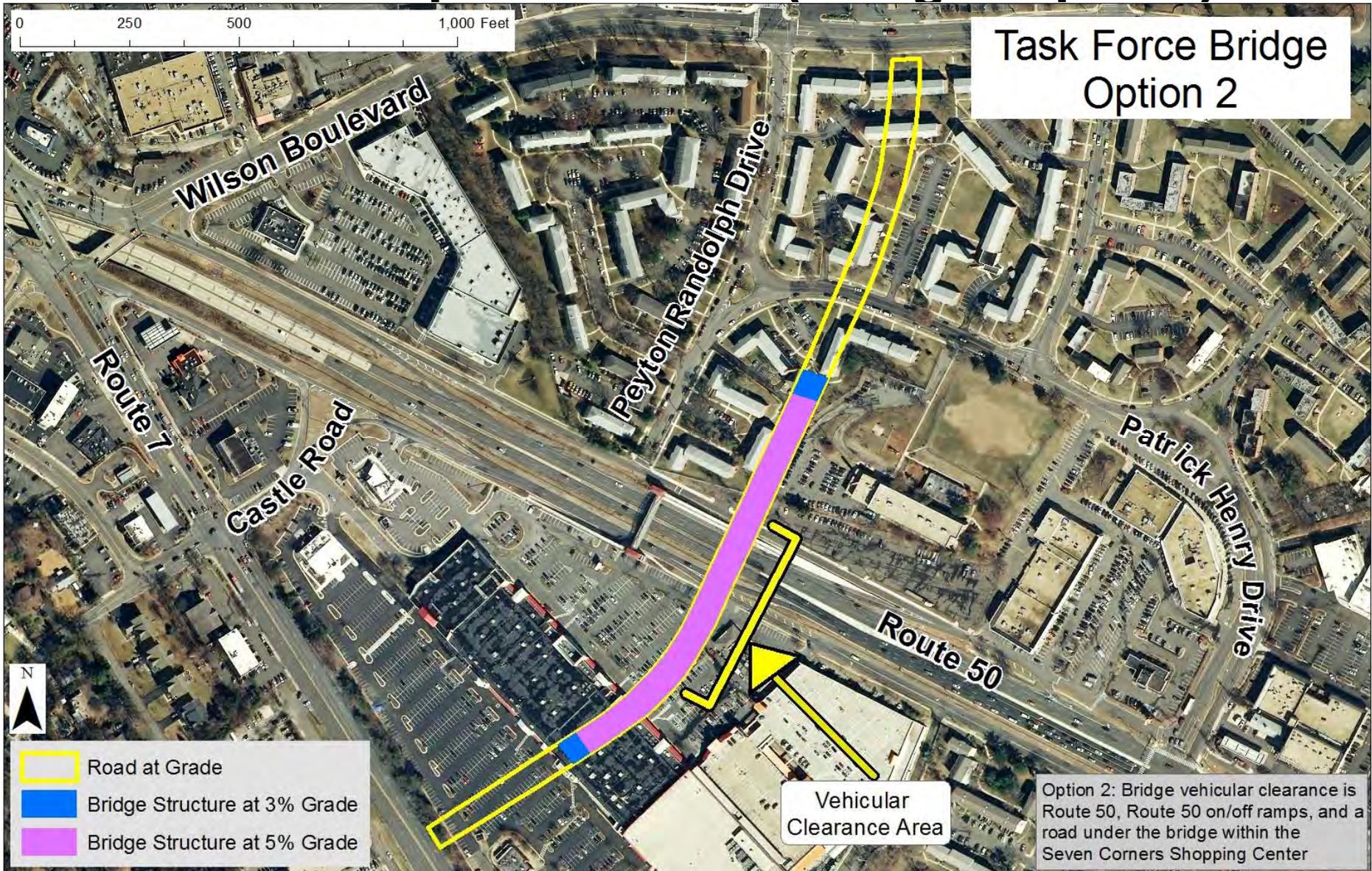


MOE – Implementation (Bridge Impacts)



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MOE – Implementation (Bridge Impacts)

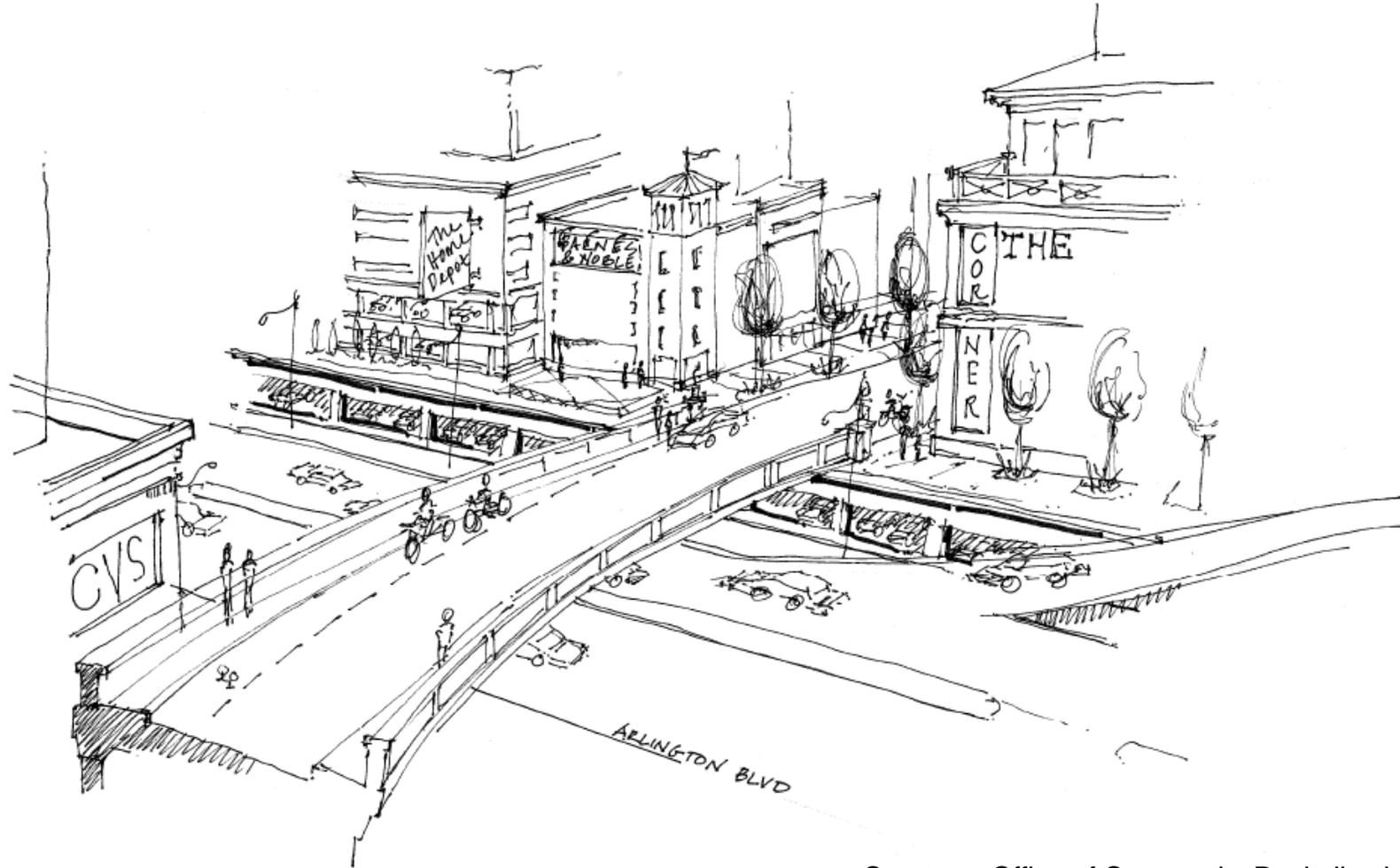


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Conceptual Development adjacent to Task Force Bridge



Courtesy: Office of Community Revitalization



Measures of Effectiveness – Land Use

- New land uses and proposed street grid are integral: without the grid, intensification is may be limited
- More urban and less auto-dependent
- Efficient at moving people, both with and without vehicles
- Adds to the character of place - provides opportunities for community interaction
- Protect existing single family neighborhoods
- Allows for increased density where appropriate



Transportation Schedule

- Meet with other jurisdictions and VDOT
- Finalize conceptual design results (March)
- Further analysis on selected concept (March-April)
- Present Additional Findings at next Task Force meeting (April)
- Complete Phase II Final report (End of April)
- VDOT Submittal (May)



Task Force Discussion and Ranking of the Three Concept Networks