

MAYOR & COUNCIL AGENDA COVER SHEET

MEETING DATE:

September 14, 2009

CALL TO PODIUM:

Fred Felton
Assistant City Manager

RESPONSIBLE STAFF:

Fred Felton

Greg Ossont

Rob Robinson

AGENDA ITEM:
(please check one)

<input type="checkbox"/>	Presentation
<input type="checkbox"/>	Proclamation/Certificate
<input type="checkbox"/>	Appointment
<input type="checkbox"/>	Public Hearing
<input type="checkbox"/>	Historic District
<input type="checkbox"/>	Consent Item
<input type="checkbox"/>	Ordinance
<input type="checkbox"/>	Resolution
<input type="checkbox"/>	Policy Discussion
<input checked="" type="checkbox"/>	Work Session Discussion Item
<input type="checkbox"/>	Other:

PUBLIC HEARING HISTORY:

(Please complete this section if agenda item is a public hearing)

Introduced	
Advertised	
Hearing Date	
Record Held Open	
Policy Discussion	

TITLE:
Guidance on the City's Position on the I270/US15 Multi-Modal Corridor Study Alternatives

SUPPORTING BACKGROUND:
<p>The Alternatives Analysis/Environmental Assessment of the I-270/US15 Multi-Modal Corridor Study was released in May of 2009. Public hearings on the document were held in Gaithersburg on June 16, 2009 and in Frederick on June 18, 2009. As you know, this study has developed alternative highway and transit options for the corridor.</p> <p>The Montgomery County Council is scheduled to vote on a recommended highway and transit alternate on September 15, 2009, and the City needs to provide input to the County Council. Additionally, it is anticipated that Governor O'Malley will select a locally preferred alternative for both components of the I-270/US15 Study in the near future, and the Maryland Department of Transportation (MDOT) is seeking input from local officials.</p> <p>Based on past discussions and transmittals to other levels of government, staff believes the following summarizes the City's position on the Corridor Cities Transitway (CCT):</p> <ul style="list-style-type: none"> While the City prefers a light rail mode and has strongly advocated light rail as the preferred mode for the (CCT) for many years, we understand that based on the current Cost Effective Ratio of the project, light rail would not qualify for federal transit funding. Given that costs associated with light rail inhibit the competitiveness of the project for Federal funding, the City is supportive of a bus rapid transit (BRT) mode. However, should there be a change in the applicable formulas, available federal resources, or data relied upon (such as ridership, planned densities, etc.), the City would prefer light rail if it becomes feasible in the future.

DESIRED OUTCOME:
Provide guidance to staff.

MAYOR & COUNCIL AGENDA COVER SHEET

Supporting Background (Continued):

- The City is very supportive of the alternative alignments that would serve both the Crown Farm and Kentlands.
- If the CCT mode is BRT, the City strongly opposes locating the operations and maintenance facility at Site 6 on Metropolitan Grove Road.

The Mayor and City Council have not yet taken a position on a highway alternative, but staff recommends the following:

- The City support Alternative 7 with two restricted lanes in each direction between Sam Eig Highway and MD-85; however, the City would prefer High Occupancy Toll (HOT) lanes rather than Express Toll Lanes (ETL). This alternative would provide significant congestion relief while providing a funding source to support construction.
- Recognizing that Alternative 7 will cause some displacement, the City requests that the State Highway Administration work closely with affected homeowners, communities, and businesses to minimize impacts and ensure that the remaining communities are sustainable. Additionally, the State should offer to purchase impacted properties as soon as possible rather than waiting for actual construction.

Attachment:

Memorandum dated August 12, 2009 from Planner Rob Robinson

MEMORANDUM TO: Mayor and City Council

FROM: Rob Robinson, Planner

DATE: August 12, 2009

SUBJECT: Preliminary Background Report: Synopsis of Highway Alternatives 1 – 7 Associated with the I-270 Multi-Modal Corridor Study

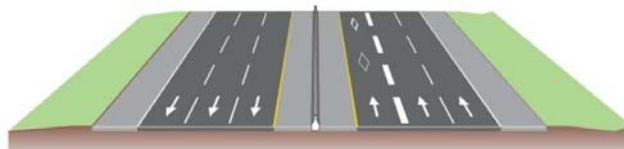
In preparation for the Mayor & Council worksession on the I-270 project, staff has prepared a background report that summarizes the various highway alternatives: their components and potential impacts to the City of Gaithersburg. The scope of this report does not involve those issues related solely to the portions of I-270 sited within Frederick County and Upper Montgomery County.

Alternative 1: No-Build Alternative

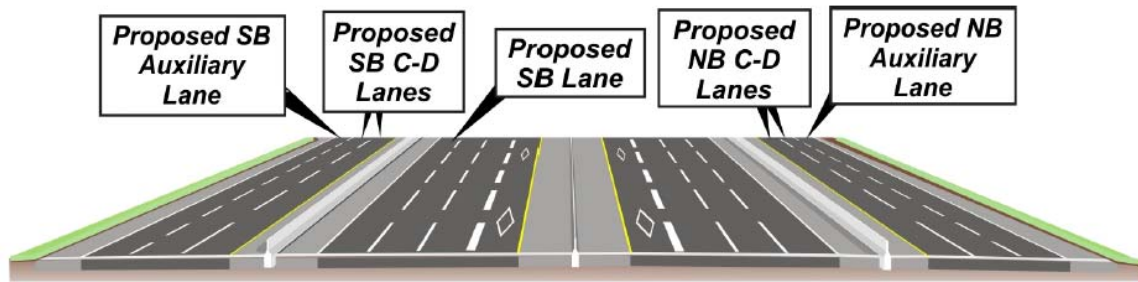
The No-Build Alternative includes the existing condition and proposed transportation improvements listed in the Metropolitan Washington Council of Governments *Constrained Long Range Plan*. No major capacity improvements would be made on I-270 or US 15 and only routine maintenance or spot improvements (i.e. resurfacing, signing and/or lighting) would be conducted.

Alternative 2: Transportation System Management/Transportation Demand Management

The Transportation System Management / Transportation Demand Management Alternative represents measures to improve overall transportation operations without adding capacity, and strategies to reduce the number of vehicle trips on the corridor highways. These measures and strategies include additional park-and-ride lots, an enhanced rideshare program, and improved pedestrian access to transit stations.



Typical section of existing I-270 as found in the City of Gaithersburg



Typical section of Alternatives 3, 4, & 5 as they are found in the City of Gaithersburg¹

Alternative 3: Master Plan HOV with Corridor Cities Transitway (CCT)

Alternative 3 involves the addition of a HOV lane on I-270 up to I-70. The lane addition would occur for southbound I-270 in the I-270 South segment, and for both northbound and southbound I-270 in the I-270 North segment. On US 15, a general-purpose lane and an auxiliary lane would be added between I-70 and MD 26.

Between I-370 and Middlebrook Road, Alternate 3 consists of converting the existing I-270 southbound inside general-purpose lane (GP) to an HOV lane. For Collector-Distributor Lanes (C-D) Alternate 3 would extend the I-270 C-D lanes, that currently begin at I-370 (southbound) and end at MD 124 (northbound), to Father Hurley Boulevard. In the northbound direction, the two-lane C-D roadway would be extended from just south of MD 124 to Father Hurley Boulevard. Slip ramps from the mainline lanes to the C-D lanes would be located between MD 124 and Watkins Mill Road (one-lane slip ramp); Middlebrook Road and MD 118 (one-lane slip ramp); and MD 118 and Father Hurley Boulevard (two-lane slip ramp). A one-lane slip ramp from the C-D lanes to the mainline lanes would be located between Middlebrook Road and MD 118. The C-D lanes would join the mainline lanes north of Father Hurley Boulevard. An auxiliary lane would be located along the C-D lanes between the Watkins Mill Road and Middlebrook Road interchanges. An auxiliary lane would also be located between the slip-ramp from the mainline lanes at Middlebrook Road to the slip ramp from the C-D lanes, south of MD 118.

In the southbound direction, the two-lane C-D roadway would begin north of Father Hurley Boulevard and would tie into the existing C-D lanes, south of I-370. One-lane slip ramps from the mainline lanes to the C-D lanes would be located between Middlebrook Road and Watkins Mill Road and MD 117 and I-370. One-lane slip ramps from the C-D lanes to the mainline lanes would be located between Father Hurley Boulevard and MD 118; MD 118 and Middlebrook Road; and MD 124 and MD 117. An auxiliary lane would be located along the C-D lanes between the Father Hurley Boulevard and MD 118 interchanges; between the Middlebrook Road and Watkins Mill Road interchanges; between the Watkins Mill Road and MD 124 interchanges; and between the MD 117 and I-370 interchanges. An auxiliary lane would also be located between the slip-ramp from the C-D lanes north of MD 117 to the slip ramp from the mainline lanes south of MD 117.

¹ For detailed sectional breakdown, please refer to attached plan sheet taken from 2002 DEIS Ex. 1

Alternative 4: Master Plan General-Purpose with CCT

Alternative 4 includes a TSM/TDM component and the addition of a general-purpose lane on I-270 from MD 121 to I-70. In addition, the existing collector-distributor lanes would be extended from I-370 to Father Hurley Boulevard. On US 15, a general-purpose lane and an auxiliary lane would be added between I-70 and MD 26. The proposed TSM/TDM component is the same as described in Alternate 2.

The proposed highway component is the same as described in Alternate 3 except along I-270 between MD 121 and I-70. Along this section of I-270, one general-purpose lane per direction would be added in place of the HOV lane described in Alternate 3. (The proposed I-270 section between MD 121 and I-70 consists of three general-purpose lanes in each direction). Alternatives 3 and 4 would have the same design within the City of Gaithersburg.

Alternative 5: Enhanced Master Plan HOV + General-Purpose with CCT or Premium Bus

Alternative 5 includes a TSM/TDM component and the addition of a HOV lane and a general-purpose lane on I-270. The HOV lane addition would occur for southbound I-270 in the I-270 South segment, and for both northbound and southbound I-270 in the I-270 North segment. The general-purpose lane addition would occur on I-270 from MD 121 to I-70. In addition, the existing collector-distributor lanes would be extended from I-370 to Father Hurley Boulevard. On US 15, a general-purpose lane and an auxiliary lane would be added between I-70 and MD 26. It is to be noted Alternative 5C would replace the CCT with Premium Bus service operating on the highway HOV lanes.

The proposed Alternative 5 is the same as described in Alternative 3 except along I-270 between MD 121 and I-70. Along this section of I-270, one general-purpose lane per direction would be added in addition to the HOV lanes described in Alternate 3. (The proposed I-270 section between MD 121 and I-70 consists of three general-purpose lanes and one HOV lane in each direction.) Alternatives 3, 4, and 5 would have the same typical section design within the City of Gaithersburg.

Impacts to the City of Gaithersburg from Alternatives 3, 4, and 5²

As the proposed designs for Alternatives 3, 4, and 5 are the same within the City of Gaithersburg, the impacts are also essentially the same.

The 2002 DEIS states, "An analysis of the potential residential displacements that would result from each build alternate was based on preliminary right-of-way estimates. Residences that are located within the proposed right-of-way area required to construct the build alternates are counted as probable displacements. Also, residences that would be impacted in the following ways from the proposed construction are counted as displacements: access is denied, or the right-of-way required from the property is substantial that practical use of the property/structure would no longer be possible."³

Alternatives 3 and 4 would require the displacement of between 59 and 123 residences/townhouse units along the I-270/US 15 Corridor, depending upon the

² A full comparison chart of all the alternatives' impacts, taken from the 2009 AA/EA document has been attached Ex.2

³ 2002 DEIS Plan showing both residential and business potential displacements attached Ex. 3

construction of retaining walls. Construction of retaining walls in various locations along the Corridor would reduce the overall highway residential impacts from between 91 and 123 residences to between 59 and 96 residences. The displacements in the City would occur:

- *I-270 Southbound, North of I-370 (Brighton West Community)* Sixty-one (61) to eighty-one (81) townhouse units would be displaced in this area. Construction of an approximately 2,300-foot retaining wall would reduce the residential impacts in this area from a maximum of 81 to a minimum of 50. This retaining wall could also be used to reduce business impacts at the Festival at Muddy Branch shopping center.

Alternatives 5A/B would include the same impacts described for Alternates 3 and 4 and would increase those impacts by one, to a maximum of 124 residences. The additional residential displacement is located along the northbound side of I-270, south of Comus Road. Alternate 5C would impact between 210 and 385 residences, compared with the 91 to 124 residences/townhouse units described in Alternates 5A/B. These additional residential displacements are due to the proposed I-370 direct access ramps, and are located in the following areas:

- *I-270 Northbound, North of I-370 interchange-* Eighty-seven (87) to 144 townhouse units would be displaced in this area. Construction of an approximately 1,200-foot retaining wall would reduce the residential impacts in this area from 144 to 68.
- *I-270 Northbound, South of MD 117-* Thirty-two (32) to 117 townhouse units would be displaced in this area. Construction of an approximately 1,500 foot retaining wall could avoid displacing all of these units. Overall, retaining wall construction would avoid displacing up to 258 residences/townhouse units in Alternate 5C, resulting in 127 residential displacements.

A sectional summary of residential displacements in or near the City of Gaithersburg are as follows:

**TABLE III-10
SUMMARY OF RESIDENTIAL DISPLACEMENTS**

Location	Plan Number*	Alternates	Displacements without Retaining Wall ¹	Displacements with Retaining Wall ¹
<i>Highway Residential Displacements</i>				
I-270 Southbound North of I-370 Brighton West Townhouses	HWY 1	3A/B, 4A/B, 5A/B/C	61-81 residences	50-81 residences
I-270 Northbound North of I-370 (with I-370 direct access ramps)	HWY 1	5C	87-144 residences	68-120 residences
I-270 Northbound South of MD 117	HWY 1, 2	5C	32-117 residences	0 residences
I-270 Southbound South of Great Seneca Creek/ Game Preserve Rd.	HWY 2	3A/B, 4A/B, 5A/B/C	1 residence ²	0 residences ²

From 2002 DEIS

Aside from the residential displacements, there are also business displacements associated with Alternatives 3, 4, and 5. Alternatives 3 and 4 would displace up to a total of 8 businesses. Construction of retaining walls would reduce the number of potential business displacements from 8 to one (1) business. Two (2) businesses are on the southbound side of I-270, north of I-370 in the Festival at Muddy Branch Shopping Center. Construction of an approximately 300-foot retaining wall may avoid displacing both businesses. Another business is on the southbound side of I-270, north of MD 117. Construction of an approximately 1,200-foot retaining wall could avoid displacing this business.

Alternates 5A/B would increase the highway impacts described above by a total of one additional business, for a total of up to nine (9) displacements, which would be displaced on the northbound side of I-270, north of Comus Road. Alternate 5C would increase the highway impacts described in Alternates 5A/B up to a total of two additional businesses, which would be displaced in the following locations:

- One business is on the southbound side of I-270, north of I-370 in the Festival at Muddy Branch Shopping Center. Construction of an approximately 1,400-foot retaining wall could avoid displacing both businesses.

A sectional summary of business displacements in or near the City of Gaithersburg are as follows:

**TABLE III-11
SUMMARY OF BUSINESS DISPLACEMENTS**

Location	Plan Number*	Alternates	Displacements without Retaining Wall ¹	Displacements with Retaining Wall ¹
<i>Highway Business Displacements</i>				
I-270 southbound, north of I-370 (Festival at Muddy Branch Shopping Center)	HWY 1	3A/B, 4A/B, 5A/B/C	2 businesses	0-2 businesses
I-270 southbound, north of I-370 with I-370 direct access ramps (Festival at Muddy Branch Shopping Center)	HWY 1	5C	1 business	1 business
I-270 southbound, north of MD 117	HWY 2	3A/B, 4A/B, 5A/B/C	1 business	0

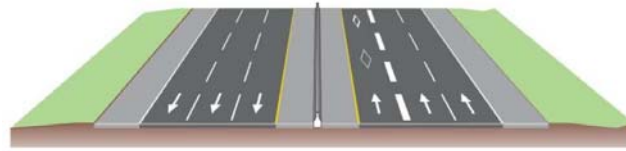
From 2002 DEIS

Finally, Alternatives 3, 4, and 5 will require right-of-way from publicly-owned public parks located in the City of Gaithersburg. The build alternatives will have impacts on the following parks based on the original design using 2:1 slope limits:

Morris Park: Morris Park contains 37.2 acres and is owned by the City of Gaithersburg. Morris Park will be impacted along its southern and western boundary with I-270 by Alternative 5C only, as a result of northbound I-270 highway improvements. Under this alternate, the addition of C/D lanes, and an HOV direct access ramp require that 100 linear feet to 200 linear feet be acquired for additional right-of-way. The proposed improvements require that 0.99 acres of the park's 37.2 acres will be impacted.

Malcolm King Park: Malcolm King Park contains 72.9 acres and is owned by the City of Gaithersburg. Under Alternatives 3, 4, and 5, I-270 southbound would be widened to include the addition of C/D lanes on the southbound side from Father Hurley Boulevard to I-370. For Alternates 3, 4, and 5A/B the proposed C/D lanes pass adjacent to the

south side of Malcolm King Park and the widening would require the acquisition of 0.49 acres for additional right-of-way from the 72.9-acre park. The impact occurs over a length of approximately 300 linear feet. The proposed alignment will shift the embankment 100 feet towards and into the park, impacting the edge of the forested area. In addition, Alternate 5C provides direct access ramps from the proposed I-270 HOV lanes to I-370. Construction of these direct access ramps would require further widening of I-270 causing a slightly greater impact to Malcolm King Park. The additional 0.09-acre of land required would result in a total of 0.58 acres required from Malcolm King Park.



Typical section of existing I-270 as found in the City of Gaithersburg



Typical section of Alternatives 6 and 7 as they are found in the City of Gaithersburg north of MD⁴ 124 to Newcut Road

Alternative 6: Master Plan ETL with CCT

Alternative 6 includes the addition of ETLs and a general-purpose lane on I-270. The ETL addition would consist of implementing two ETLs in the I-270 South segment from I-370 to the proposed Newcut Road interchange. One ETL would be constructed in the I-270 North segment from the proposed Newcut Road interchange to north of MD 80. One general-purpose lane would be added in the I-270 North segment from north of MD80 to I-70. The existing northbound collector-distributor lanes (from I-370 to MD 124) and the existing HOV would be removed. On US 15, a general-purpose lane and an auxiliary lane would be added between I-70 and MD 26.

Alternative 6 would add GP lanes, ETLs, auxiliary lanes, and direct access ramps along I-270 and GP lanes and auxiliary lanes along US 15. ETLs would terminate north of MD 80 at the open access area south of the Monocacy National Battlefield in Frederick County Between I-370 and north of MD 80, Alternative 6 would provide up to two ETLs

⁴ For detailed sectional breakdown, please refer to attached plan sheet taken from 2009 EA/AA Ex. 4

in each direction in the median lanes, barrier-separated from highway GP lanes and served by direct access ramps at designated interchanges and open access areas. The highway component would provide:

- **Four GP lanes and two ETLs in each direction between Shady Grove Road and MD 124.**
- **Three GP lanes and two ETLs in each direction between MD 124 and proposed Newcut Road.**
- Three GP lanes and one ETL in each direction between proposed Newcut Road and MD 121.
- Two GP lanes and one ETL in each direction between MD 121 and north of MD 80, where the ETLs will terminate in the vicinity of Park Mills Road.
- Three GP lanes in each direction from north of MD 80 in the vicinity of Park Mills Road to Biggs Ford Road.

Auxiliary lanes would provide additional travel lanes between interchanges as needed to provide capacity. The direct access ramps for ETLs only, would be provided south of I-370 and north of MD 80 at the ETL termini; at the interchanges of I-270 with I-370, MD 118, at the proposed Newcut Road; from the proposed Metropolitan Grove Road Extended (the only full access ETL interchange proposed within the City); and via open access ramps between MD 121 and MD 109 and between MD 75 and MD 80.

Alternative 7: Enhanced Master Plan ETL with CCT

Alternative 7 would add GP lanes, ETLs, auxiliary lanes, and direct access ramps along I-270 and GP lanes and auxiliary lanes along US 15. ETLs would terminate north of MD 80 at the direct access ramps south of the Monocacy National Battlefield in Frederick County. The highway typical section for Alternative 7 is identical to the section for Alternative 6 except between proposed Newcut Road and north of MD 80. In this section, Alternative 7 would have two (2) ETLs per direction, with a four-foot inside offset to the median barrier.

Impacts to the City of Gaithersburg from Alternatives 6 and 7⁵

Alternatives 6 and 7 would require the potential displacement of 251 residential units along the I-270/US 15 Corridor. Construction of retaining walls in various locations along the Corridor would reduce the overall highway residential impacts from between 9 to 74 residences. The following chart, taken from the 2009 EA/AA document, shows the breakdown of the displacements in or near the City of Gaithersburg:

⁵ 2009 EA/AA Plan showing both residential and business potential displacements attached Ex. 5

Table IV-11: Summary of Residential Displacements – Alternatives 6A/B and 7A/B

LOCATION	PLAN SHEET COUNTY Appendix A	MAXIMUM DISPLACEMENTS WITHOUT MINIMIZATION	MINIMIZED DISPLACEMENTS WITH MINIMIZED SHOULDERS AND/OR RETAINING WALLS ¹
Highway Residential Displacements			
I-270 Southbound, North of I-370 Brighton West Townhouses	HWY 1 (Montgomery)	81 residences	6 - 10 residences
I-270 Northbound, North of I-370 (with I-370 direct access ramps) Fireside Condominiums	HWY 1 (Montgomery)	0 residences ²	0 residences ²
I-270 Northbound, South of MD 117 London Deny Apartments/ Montgomery Club	HWY 2 (Montgomery)	150 residences	0 - 61 residences ³
I-270 Southbound, South of Great Seneca Creek/ Game Preserve Road	HWY 2 (Montgomery)	1 residence ⁴	0 residences

It is to be noted that the maximum displacements shown for the Brighton West townhouses are the same as for Alternatives 3, 4, and 5. The Fireside Condominiums may incur impacts to facilitate stormwater management, but that cannot be determined until further engineering is conducted and that is beyond the scope of the current project stage.

Aside from the residential displacements, there are also business displacements associated with Alternatives 6 and 7. A total of five (5) businesses have been identified within the City of Gaithersburg. Three (3) of which are located within the Festival at Muddy Branch Shopping Center. Construction of retaining walls could reduce the number of potential business displacements from none to two (2). The following chart taken from the 2009 EA/AA provides a sectional breakdown:

Table IV-12: Summary of Business Displacements – Alternatives 6A/B and 7A/B

LOCATION	PLAN SHEET COUNTY Appendix A	MAXIMUM DISPLACEMENTS WITHOUT MINIMIZATION	MINIMIZED DISPLACEMENTS WITH RETAINING WALLS ¹
Highway Business Displacements			
I-270 northbound, south of I-370 (beginning of ETL facility)	HWY 1 (Montgomery)	1 business	0 businesses
I-270 southbound, north of I-370 (Festival at Muddy Branch Shopping Center)	HWY 1 (Montgomery)	3 businesses	0 - 2 businesses
I-270 southbound, north of MD 117	HWY 2 (Montgomery)	1 business	0 businesses

Finally, Alternatives 6 and 7 will also require right-of-way from publicly-owned public parks located in the City of Gaithersburg. The build alternatives will have impacts on the following parks:

Morris Park: Morris Park contains 37.2 acres and is owned by the City of Gaithersburg. Morris Park will be impacted along its southern and western boundary with I-270 through the realignment of the I-370 ramp to northbound I-270 to access new northbound lanes. The proposed improvements require that 0.21 acres of the park's 37.2 acres will be impacted. This would mainly be forest edge.

Malcolm King Park: Malcolm King Park contains 72.9 acres and is owned by the City of Gaithersburg. Alternatives 6 and 7 will require the southbound widening of I-270 to add an ETL direct access ramp, one southbound lane, and extend accel/decel lanes. The widening would require the acquisition of 0.75 acres for additional right-of-way from the 72.9-acre park, taken from an existing grassy embankment with some trees.

It is to be noted that the proposed direct access ramps at Metropolitan Grove Extended will require dedication of City land, currently master planned as open-space, and possibly private land acquisition. Detailed engineered plans are beyond the scope of the current project stage, therefore specific acreages and locations are unavailable from the State Highway Administration.

Glossary:

- **General Purpose (GP)** lanes are regular traffic lanes designed to accommodate all motor vehicle traffic on interstate and state highways, generally posted at speeds of 55 miles per hour or higher.
- **High Occupancy Vehicle (HOV)** lanes are dedicated lanes which can only be used by vehicles with two or more occupants or by motorcycles. They may be separated from the GP lanes by striping or by a barrier. HOV lanes are managed lanes which are designed to encourage carpooling. I-270 currently has one HOV lane, designated as HOV-2, in both the northbound and southbound directions. HOV-2 requires at least two persons per vehicle.
- **Express Toll Lanes (ETLs)** are another type of managed lanes designed to alleviate congestion in GP lanes and provide relatively free-flowing traffic. ETLs are limited-access, tolled interstate highway lanes that are usually barrier-separated from GP lanes. Motorists who wish to travel in the less congested ETLs pay a toll that is collected at highway speeds by an E-ZPass™ transponder.
- **Collector/Distributor (C-D)** lanes are one-way roads next to the interstate that operate similar to frontage roads. CD lanes provide relatively free-flowing lanes for shorter trips and are used to collect entering and exiting traffic at interchanges. This helps to eliminate weaving traffic in the main lanes of the interstate. CD lanes are barrier-separated from GP lanes and access between the CD and GP lanes is limited. I-270 currently uses a CD lane system designated as the “local” lanes.
- **Direct Access ramps** provide direct, barrier-separated access to/from managed lanes at a limited number of locations along the highway. The direct access ramps provide continuity of travel and eliminate the necessity of merging managed lane and GP lane traffic at exits and entrances.
- **Acceleration/deceleration (accel/decad)** lanes extend the length of entry and exit ramps to provide adequate distance for entering vehicles to reach highway speeds before merging with through traffic or allow exiting vehicles to slow to appropriate ramp speeds.
- **Auxiliary lanes** are acceleration and deceleration lanes connected between consecutive interchange ramps, so that vehicles traveling from one interchange to the next do not have to merge with the through highway lanes. They may eliminate some weaving between interchanges and provide a longer distance for vehicles entering the roadway to reach highway speeds.

Figure II-1: Alternatives 3A/B, 4A/B, and 5A/B/C 2002 DEIS

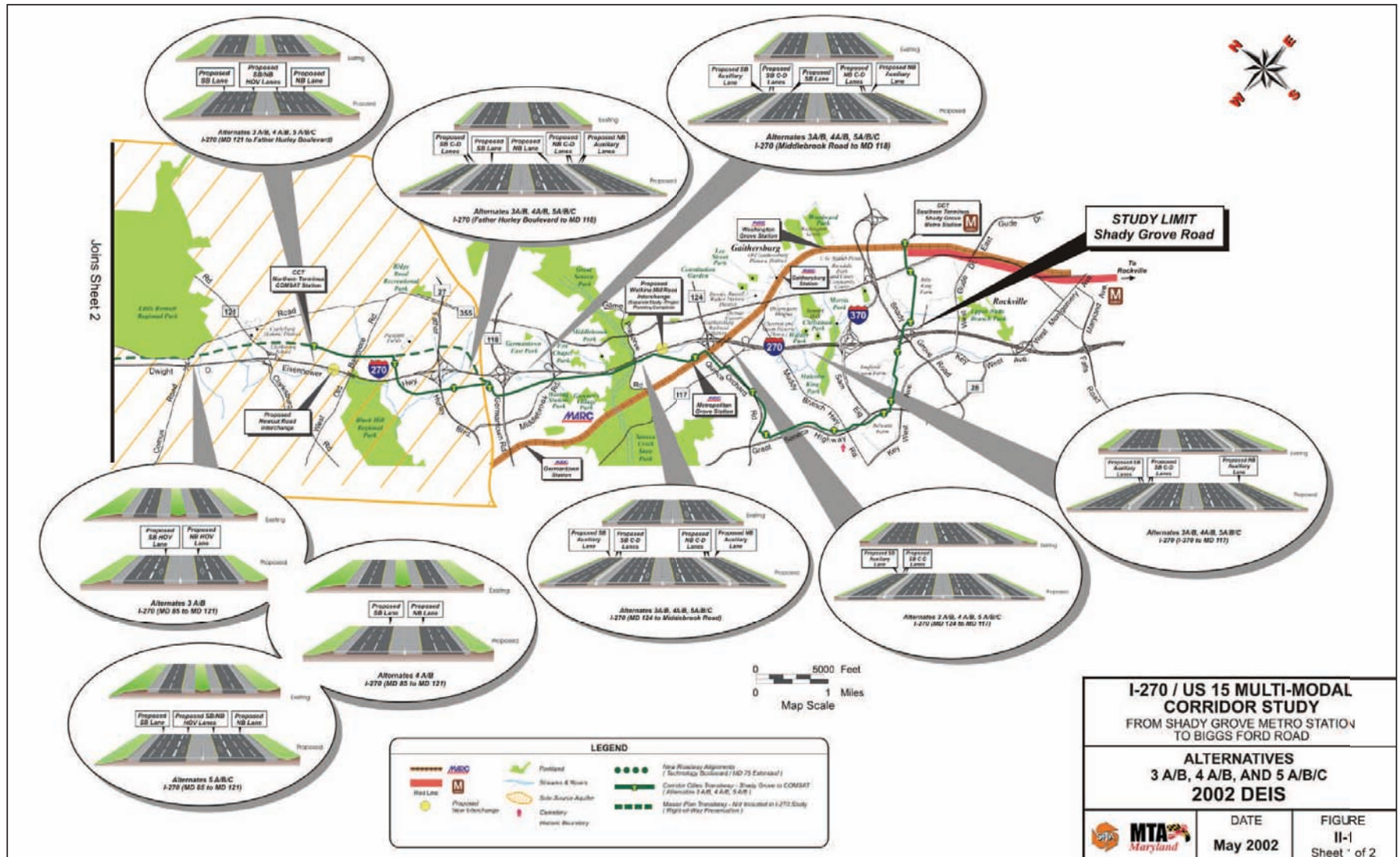


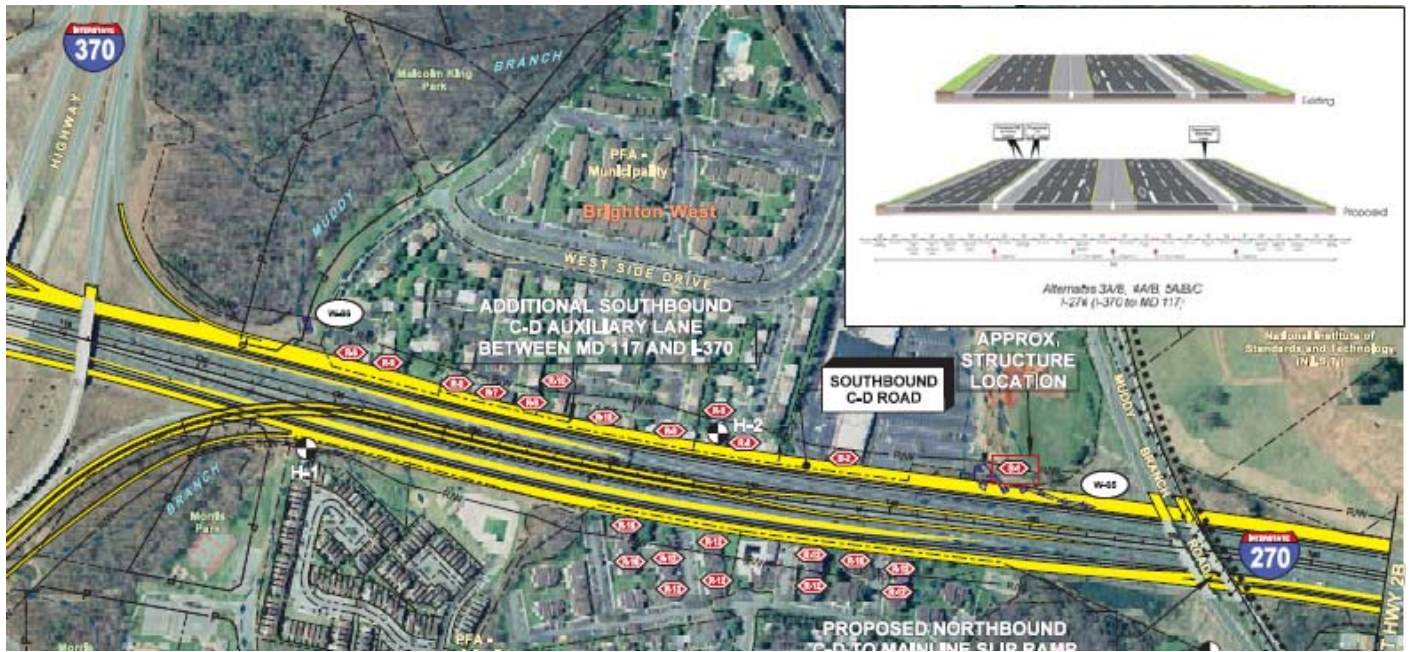


Table S-2: Summary of Impacts of All Build Alternatives

RESOURCE	ALTERNATIVES 3A/B ¹	ALTERNATIVES 4A/B ¹	ALTERNATIVES 5A/B ¹	ALTERNATIVE 5C ¹	ALTERNATIVES 6A/B ²	ALTERNATIVES 7A/B ²	NOTES:
Natural Environment	DEIS Alternatives				AA/EA Alternatives		
Total Limit of Disturbance (Edge of Pavement to new ROW)					1,476 acres	1,476 acres	
Highway Component					1,192 acres	1,192 acres	
Transitway Component					284 acres ⁴	284 acres ⁴	
Prime Farmland Soils					742.6 acres	742.6 acres	
Total	284.6 acres	284.6 acres	290.2 acres	207.7 acres	642 acres	642 acres	
Highway component	195.8 acres	195.8 acres	202.4 acres	207.7 acres	25.6 acres	25.6 acres	
Transitway component	88.8 acres	88.8 acres	88.8 acres	n/a	100.6 acres ⁴	100.6 acres ⁴	
Soils of Statewide Importance					488.7 acres	488.7 acres	
Total	367 acres ³	367 acres ³	391.9 acres ³	339.6 acres ³	460 acres	460 acres	
Highway component					28.7 acres ³	28.7 acres ³	
Transitway component							
Number of farmlands	30	30	30	27	38 parcels	38 parcels	
Active Farmland required	133 acres	133 acres	143 acres	106 acres	191 acres	191 acres	
Floodplains – Total	23 acres	23 acres	24 acres	21 acres	28.4 acres	28.4 acres	
Highway component	20 acres	20 acres	21 acres	21 acres	25.6 acres	25.6 acres	
Transitway component	3 acres	3 acres	3 acres	n/a	2.8 acres ⁴	2.8 acres ⁴	
Forest – Total	183 acres	183 acres	199 acres	180 acres	295.8 acres ⁴	295.8 acres ⁴	
Highway component	156 acres	156 acres	172 acres	180 acres	268.6 acres	268.6 acres	
Transitway component	27 acres	27 acres	27 acres	n/a	27.2 acres	27.2 acres	
Rare, Threatened and Endangered Species					Potential ⁵	Potential ⁵	
Waters of the US – Total Streams ⁷	14,185 linear feet streams ^{6,7}	14,185 linear feet streams ^{6,7}	16,331 linear feet streams ^{6,7}	13,407 linear feet streams ^{6,7}	24,204 linear feet streams ^{6,7}	24,204 linear feet streams ^{6,7}	
Waters of the US – Total Wetlands	10.7 acres wetlands	10.7 acres wetlands	11.6 acres wetlands	10.7 acres wetlands	15.6 acres wetlands	15.6 acres wetlands	
Highway Component							
Streams	11,245 linear feet	11,245 linear feet	13,391 linear feet	13,407 linear feet	20,198 linear feet	20,198 linear feet	
Ephemeral channels ⁷	–	–	–	–	10,812 linear feet ⁷	10,812 linear feet ⁷	
Wetlands	9.1 acres	9.1 acres	10.0 acres	10.7 acres	13 acres	13 acres	
Transitway Component							
Streams	2,940 linear feet	2,940 linear feet	2,940 linear feet	n/a	4,006 linear feet	4,006 linear feet	
Ephemeral channels ⁷	–	–	–	–	1,646 linear feet	1,646 linear feet	
Wetlands	1.6 acres	1.6 acres	1.6 acres	n/a	2.6 acres	2.6 acres	
Cultural Resources							
Historic Properties	7 properties ⁸	7 properties ⁸	7 properties ⁸	5 properties ⁸	7 properties/43.28 acres ⁹	7 properties/43.28 acres ⁹	
Highway component (number/acres)					5/31.17 acres	5/31.17 acres	
Transitway component (number/acres)					3/12.11 acres	3/12.11 acres	
Socioeconomic Resources							
Public Parks – Total	11 parks/37 acres	11 parks/37 acres	12 parks/44 acres	13 parks/48 acres	13 parks/42.72 acres ¹⁰	13 parks/42.72 acres ¹⁰	
Highway component (number/acres)					13/37.56 acres	13/37.56 acres	
Transitway component (number/acres)					1/5.16 acres	1/5.16 acres	
Right-of-Way – Total ¹¹	562 acres	562 acres	592 acres	446 acres	748 acres	748 acres	
Highway component	392 acres	392 acres	422 acres	446 acres	578 acres	578 acres	
Transitway component (not including O&M facility)	170 acres	170 acres	170 acres	n/a	170 acres	170 acres	
Residential Displacements ¹² – Total	64-127	64-127	64-128	127-385	256-260	256-260	
Highway component					251	251	
Transitway component					5-9	5-9	
Business Displacements ¹⁴ – Total	4-11	4-11	4-12	2-11	13-43	13-43	
Highway component					10-11	10-11	
Transitway component (not including O&M facility)					3-32	3-32	
Air Quality - Number of receptors with CO violations	0	0	0	0	0	0	
Noise – Highway	55 locations	55 locations	55 locations	55 locations	55 locations	55 locations	
Total monitored/modeled locations	26 residential impacts	26 residential impacts	26 residential impacts	35 residential impacts	27 residential impacts	26 residential impacts	
Locations exceeding abatement criteria	10 non-residential impacts	10 non-residential impacts	9 non-residential impacts	9 non-residential impacts	13 non-residential impacts	13 non-residential impacts	
Transitway	15 locations	15 locations	15 locations	5 locations	5 locations	25 locations	
Total monitored/modeled locations	13 residential impacts with horn noise (LRT)	13 residential impacts with horn noise (LRT)	13 residential impacts with horn noise (LRT)	4 residential impacts (LRT)	4 residential impacts (LRT)	4 residential impacts (LRT)	
Locations exceeding abatement criteria	7 residential impacts without horn noise (LRT)	7 residential impacts without horn noise (LRT)	7 residential impacts without horn noise (LRT)				
Hazardous Materials – Number of affected properties	6 (4 highway, 2 transitway)	6 (4 highway, 2 transitway)	6 (4 highway, 2 transitway)	4 (highway)	6 (4 highway, 2 transitway)	6 (4 highway, 2 transitway)	

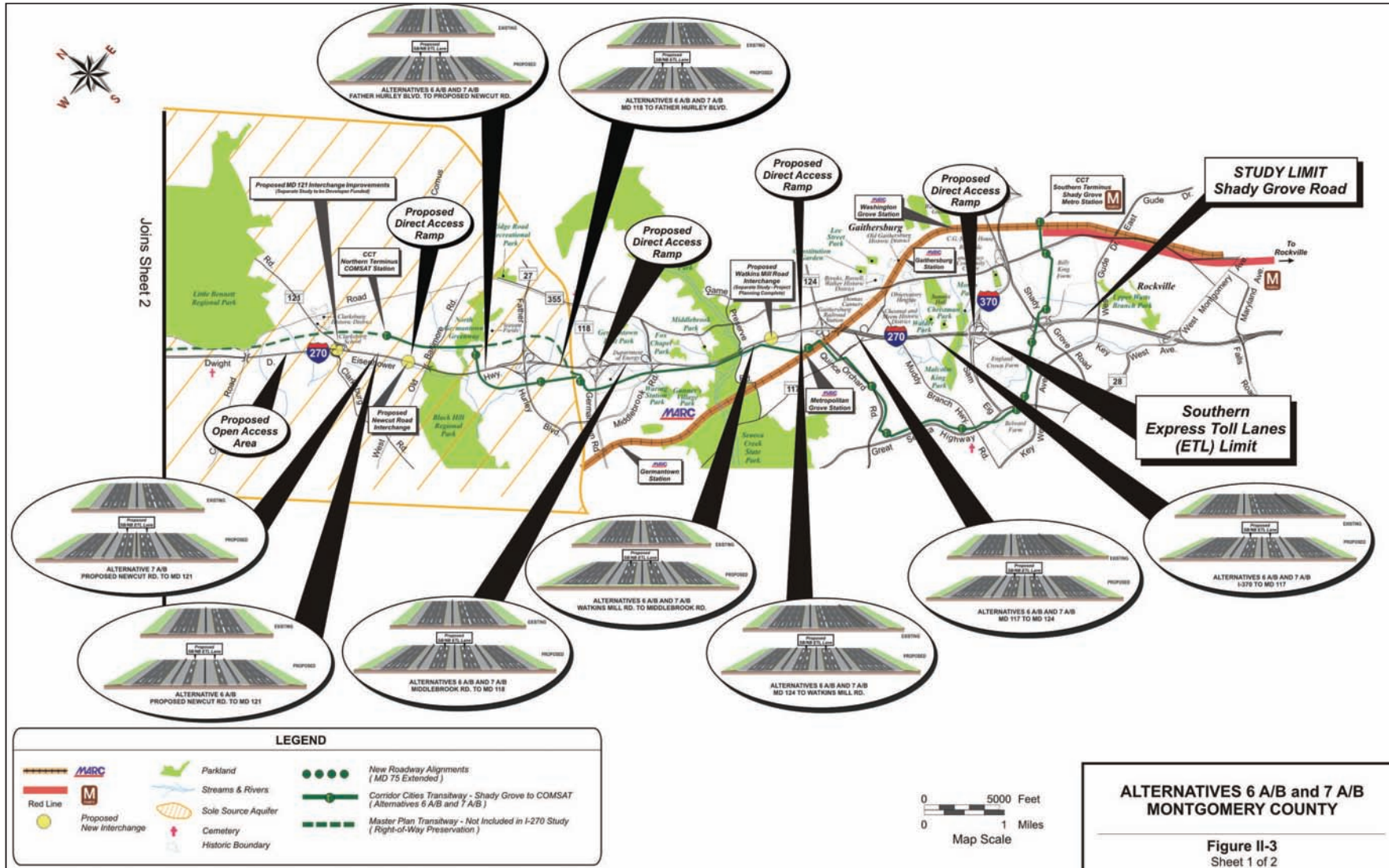
- Impacts of Alternatives 3A/B, 4A/B, 5A/B and 5C are from the 2002 DEIS.
 - Alternatives 6A/B and 7A/B have an identical highway footprint.
 - Total includes all soils in Frederick County (including prime farmland and soils of statewide importance) plus soils of statewide importance in Montgomery County (as calculated in the 2002 DEIS).
 - Does not include potential impacts of transit O&M facilities, as only one may be chosen.
 - Potential direct and indirect impacts to two fish species: pearl dace and comely shiner.
 - Does not include ephemeral streams
 - Since 2002, the USACE has broadened the definition of waters of the US to include ephemeral channels. Ephemeral channels were not quantified in the 2002 DEIS.
 - The Atomic Energy Commission Building was not evaluated for eligibility in the 2002 DEIS and is not included in these numbers. It is presumed that the DEIS alternatives 3A/B, 4A/B and 5A/B would have similar impacts as Alternatives 6A/B and 7A/B. Alternative 5C would only have highway impacts.
 - Two resources, Seneca Creek State Park and the Atomic Energy Commission Building, are impacted by both highway and transitway. One additional property is only affected by noise.
 - One park is impacted by both the highway and transit components.
 - Highway component for Alternatives 6A/B and 7A/B includes one park and ride lot. Highway component for the 2002 DEIS alternatives includes three park and ride lots.
 - Updates to displacements are ongoing.
- For O&M facility impacts, see **Table S-3**.

Alternatives 3, 4, and 5 Potential Residential and Business Displacements

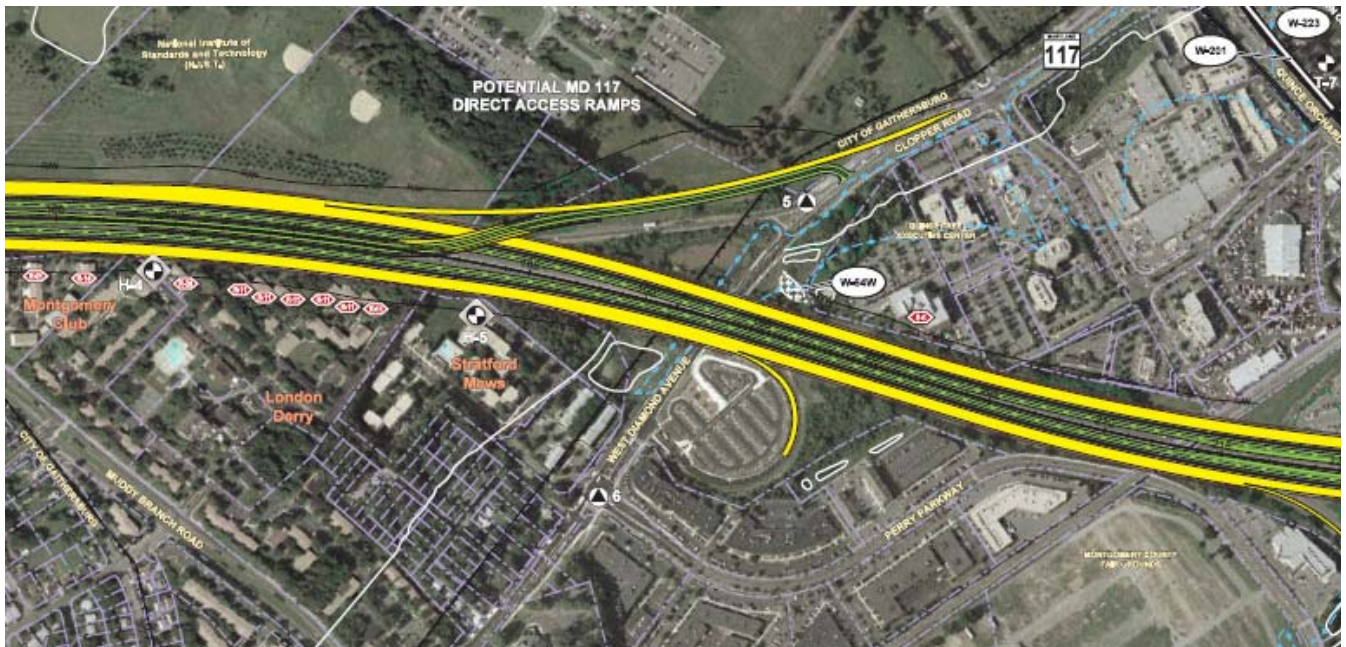


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Figure II-3: Alternatives 6A/B and 7A/B



Alternatives 6 & 7 Potential Residential and Business Displacements



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