6.0 Mitigation Measures

To reduce impacts on the transportation system from the Landover Alternative, mitigation measures are recommended for each mode of transportation analyzed. Also included are a sample of Transportation Demand Management measures to encourage non-SOV travel. Overall, the Landover site requires extensive mitigation to reduce direct impacts.

6.1 Pedestrian Network

As part of the roadway construction of the Evarts Street Bridge over I-95/I-495, a roadway mitigation discussed following the Traffic Analysis section, the Build with Mitigation Condition recommends building sidewalks on the proposed Evarts Street Bridge to Prince George's County standards. Additionally, with this connection in place, it is recommended that sidewalks along Evarts Street between Brightseat Road and the Evarts Street Bridge be updated to full ADA compliance and recommended widths to promote pedestrian connectivity through this corridor. With the reconstruction of the intersection of Brightseat Road and Landover Road, crosswalks would be upgraded to full ADA accessibility, and adequate crosswalks and signal time for pedestrians would be provided.

When compared to the Build Condition, there would be improvements to the pedestrian network under the Build with Mitigation Condition resulting in continued direct, long-term, beneficial impacts. This reflects the addition of the Evarts Street Bridge pedestrian connection linking Glenarden to the Woodmore Towne Centre. There would be no change in the construction impacts compared to the Build Condition; therefore under the Build with Mitigation Condition there would continue to be direct, short-term, adverse construction impacts on the pedestrian network.

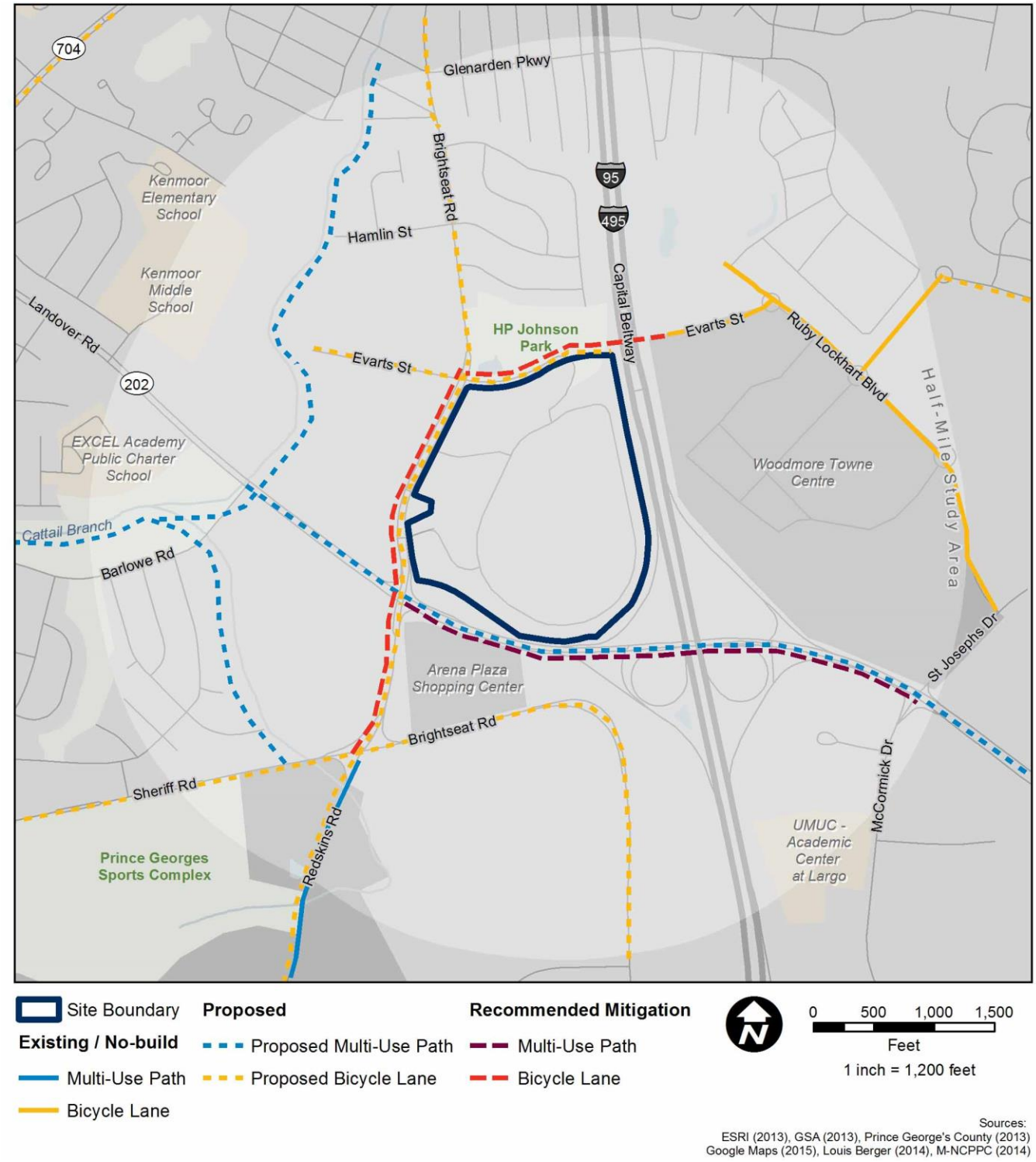
6.2 Bicycles

To maximize the number of patrons accessing the site via bicycle, the site should be connected to the existing and planned bicycle network. It is recommended that, as part of the overall site and surrounding study area construction improvements (including roadway mitigation discussed in Section 6.6.2), the three facilities that are planned directly adjacent to the site be constructed as mitigation for the Landover Build Condition, as summarized in table 6-1 and pictured in figure 6-1. While not directly adjacent to the site, an extension of the Evarts Street bicycle lanes west of Brightseat Road and an extension of the Cattail Branch River Trail north to Evarts Street would complete the bicycle network in the area, and should be considered by Prince George's County. It is recommended that the construction of the recommend multi-use paths be coordinated with the construction of the roadway improvements, to avoid adverse impacts to the multi-use paths.

Table 6-1: Recommended Bicycle Mitigation

Roadway	From/To	Type
Landover Road (MD 202)	Brightseat Road to St. Joseph's Drive	Multi-Use Path
Brightseat Road	Sheriff Road to Evarts Street	Bicycle Lane
Evarts Street	Brightseat Road to east side of Evarts Street Bridge	Bicycle Lane

Figure 6-1: Recommended Bicycle Mitigation



When compared to the Build Condition, the impacts would decrease from direct, long-term, and adverse to direct, long-term, beneficial impacts caused by the addition of new corridor-based bicycle lanes and paths. Construction impacts would remain the same as the Build Condition, resulting in direct, short-term, adverse impacts to the bicycle network during the construction period.

6.3 Public Transit

The following recommendations in table 6-2 are made to mitigate the proposed transit impacts of the Landover Alternative:

Table 6-2: Recommended Public Transit Mitigation

Impact	Mitigation
Metrobus Route F14 would continue to have capacity issues during peak hours.	WMATA should perform a study of Metrobus Route F14 and develop recommendations to improve capacity during peak hours.
Landover site patrons using the Metrorail system would require a shuttle bus service to access the site from the Metrorail. See Section 5.4.4 for a map of the shuttle route.	Implement shuttle bus service between Largo Town Center Metro Station and the Landover site.

When compared to the Build Condition, there would be no difference in long-term public transit capacity impacts under the Build with Mitigation Condition. Transit capacity would continue to have direct, long-term, adverse impacts until WMATA implemented increased capacity on Metrobus Route F14. However, the bus operation delays of more than two bus routes along Brightseat Road and Landover Road would be improved resulting in direct, long-term, beneficial impacts. During construction, the impacts would increase from direct, short-term, adverse to direct, short-term, major adverse impacts to bus operations (two or more bus routes impacted) caused by construction vehicles blocking one or more lanes on the road and intermittent road closures along Landover Road due to construction of roadway mitigations.

6.4 Parking

As mentioned in the Build Condition section, parking impacts would largely be addressed through development and implementation of a Transportation Management Plan (TMP), which would include preferred strategies for discouraging employees from parking on local streets. Because the TMP would be implemented as part of the Build Condition, there would be no changes in parking impacts between the Build and Build with Mitigation Conditions.

When compared to the Build Condition, there would be no change in long-term impacts; therefore there would continue to be no measurable direct, long-term impacts under the Build with Mitigation Condition. Similarly, short-term construction impacts would not change between the Build and Build with Mitigation Conditions; therefore, there would continue to be no measurable direct, short-term impacts under the Build with Mitigation Condition during construction.

6.5 Truck Access

No mitigation is recommended for truck access. Note that the Build Condition includes proper signing and communication of truck access restrictions to alleviate impacts to truck access.

When compared to the Build Condition, there would be no difference in the long-term or short-term truck access impacts under the Build with Mitigation Condition, because the recommended mitigation measures would not change the truck access conditions. Therefore, under the Build with Mitigation Condition, truck access would continue to have no measureable direct long-term or short-term impacts to truck access during operation of the facility or during construction, respectively.

6.6 Traffic Analysis

6.6.1 Development of Mitigated Network

Based on the Build Condition traffic operations and queueing analysis, a number of intersections would fail (defined in the existing condition section) and require mitigation. Rather than mitigate the failing intersections based on the Build Condition DTA traffic assignment, a second DTA was run to reflect the change in travel patterns due to the following proposed major mitigation strategies:

- Follow the latest revised conceptual site plan by adding a third exit driveway between the southern part of the Landover site and Brightseat Road, passing under Landover Road and connecting to Brightseat Road approximately 1,450 feet east of the Brightseat Road intersection with Sheriff Road ***(part of Alternative based on traffic analysis***).
- Upgrading the intersection of Landover Road and Brightseat Road
- Adding an additional travel lane in both directions along Landover Road between Brightseat Road and the I-95/I-495 northbound off-ramps
- Constructing a bridge over I-95/I-495 connecting Evarts Street between Brightseat Road and Woodmore Towne Centre.

Prior to running the DTA to model the mitigation condition for determining the traffic assignment, the No-build vehicle volumes needed to be adjusted to reflect the opening of a new public road (Evarts Street Bridge). Vehicle trips to and from the Woodmore Towne Centre Phase II, King Property, and Balk Hill Village would be most affected by the new bridge offering a quicker route between Woodmore Towne Centre and Glenarden neighborhood. Based on the number of vehicle trips assigned to the Glenarden Parkway from the No-build Condition, future vehicle trips destined to/from Glenarden Parkway were shifted from Glenarden Parkway to Evarts Street thus adding vehicle trips to Evarts Street between Woodmore Towne Centre and Brightseat Road and Brightseat Road between Evarts Street and Glenarden Parkway.

In addition, the existing vehicle trips between Woodmore Towne Centre and Glenarden neighborhood would shift to the Evarts Street Bridge. Since the connection to Glenarden Parkway from Woodmore Towne Centre does not exist, these existing vehicle trips would shift from St. Joseph's Drive, Landover Road between St. Joseph's Drive and Brightseat Road and Brightseat Road between Landover Road and Evarts Street. The ITE *Trip Generation Manual* was used to develop an estimate of the current total trips generated by the existing shopping center based on 762,619 total square feet constructed to date (ITE 2012; Masog 2015). Table 6-3 contains the shifted trip generation. Figure 6-2 contains a map showing the shift in vehicle travel patterns.

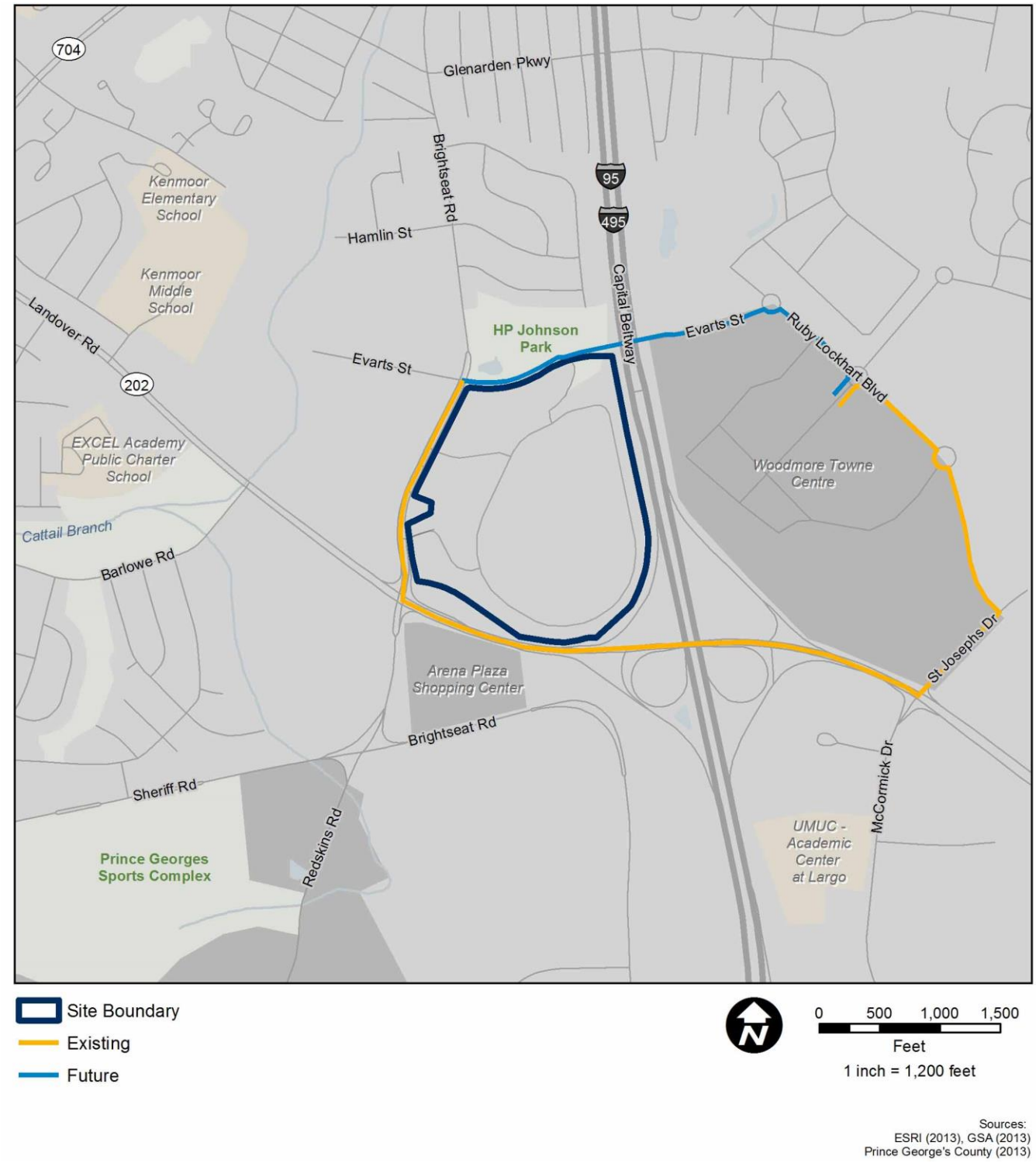
Table 6-3: Shifted Trip Generation

PROJECT	UNITS/SIZE/ USE	AM PEAK HOUR			PM PEAK HOUR		
		IN	OUT	TOTAL	IN	OUT	TOTAL
Existing Woodmore Towne Centre (Phase I)							
Shopping Center (ITE - 820)	762,619 SF	334	205	539	1,122	1,215	2,337
Pass-by Trips (M-NCPPC/Prince George's County Guidance)	20% pass-by	-67	-41	-108	-224	-243	-467
Net External Trips		267	164	431	898	972	1,870
Distribution to Evarts Street [a]	**3 Percent**	**8**	**5**	**13**	**27**	**29**	**56**
Proposed Development Trips Shifted from Glenarden Parkway to Evarts Street Bridge							
Woodmore Towne Centre Phase II	Mixed use	13	27	40	26	13	39
King Property	Mixed use	4	3	7	9	10	19
Balk Hill Village	Residential	2	7	47	6	3	9
Total Shifted to Evarts Street		**19**	**37**	**56**	**41**	**26**	**67**

[a] Based on Woodmore Towne Centre Transportation Report Assigned Distributions, Glen Arden Trip Distribution (M-NCPPC and PGC-PD (2012).

Notes: SF = square feet
Source: M-NCPPC and PGC PD (2012)

Figure 6-2: Shift in Vehicle Travel Patterns



Synchro™ was used to preliminarily design the lane geometry and traffic signal timings for the Landover Road intersections between the I-95/I-495 northbound ramps and Brightseat Road based on the forecasted FBI vehicle volume to these three facilities. In addition, the Landover Road and Brightseat Road intersection traffic signal was specially timed to provide the best throughput from both Brightseat Road and Landover Road to provide FBI trips

an option of accessing the Landover site via Landover Road interchange or Arena Drive interchange from I-95/I-495. The TransModeler™ modeled network was then updated with the Synchro™ lane geometry and traffic signal timings to create a modeled network that offers the FBI vehicle trips the best travel timed among several options to travel between the modeled network edge and Landover site. The TransModeler ™ DTA was run for 30 simulation runs. At the conclusion of the simulation runs, the software recorded the version with the best vehicle travel times. Since there were a number of possible alternative routes available, the DTA result provided alternative routing to or from six destinations: Landover Road East, Landover Road West, I-95/I-495 North, I-95/I-495 South, Sheriff Road West, and Lottsford Road North. Table 6-4 contains the DTA vehicle assignment. Figure 6-3 contains the Build with Mitigation Condition shifted trip turning movement volumes (discussed above), figure 6-4 contains the FBI-only Mitigated Trip Generation turning movement volumes (discussed above), and figure 6-5 contains the total combined Build with Mitigation Condition turning movement volumes.

Table 6-4: DTA Vehicle Assignments

Route Origin	Primary Route to/From Site	AM Peak Hour		PM Peak Hour	
		Inbound	Outbound	Inbound	Outbound
I-95/I-495 North	Landover Road/Brightseat Road	100%	100%	100%	44%
	South Exit/Brightseat Road/Landover Road	0%	0%	0%	56%
I-95/I-495 South	Landover Road	100%	100%	100%	0%
	South Exit/Brightseat Road/Arena Drive	0%	0%	0%	100%
Landover Road West	Landover Road/Brightseat Road	95%	100%	100%	100%
	Landover Road/Woodmore Towne Centre/Evarts Street	5%	0%	0%	0%
Landover Road East	Landover Road/Brightseat Road	13%	100%	0%	42%
	Landover Road/Woodmore Towne Centre/Evarts Street	87%	0%	100%	0%
	South Exit/Brightseat Road/Landover Road	0%	0%	0%	58%
Martin Luther King Jr. Highway North	Brightseat Road	100%	100%	100%	100%
Lottsford Road North	Landover Road/Brightseat Road	0%	0%	0%	0%
	Woodmore Towne Centre/Evarts Street	100%	100%	100%	100%
Sheriff Road West	Brightseat Road	100%	100%	100%	0%
	South Exit/Brightseat Road	0%	0%	0%	100%

Figure 6-3: Build with Mitigation Condition Shifted Trips

Figure 6-3: Build with Mitigation Condition Shifted Trips (continued)

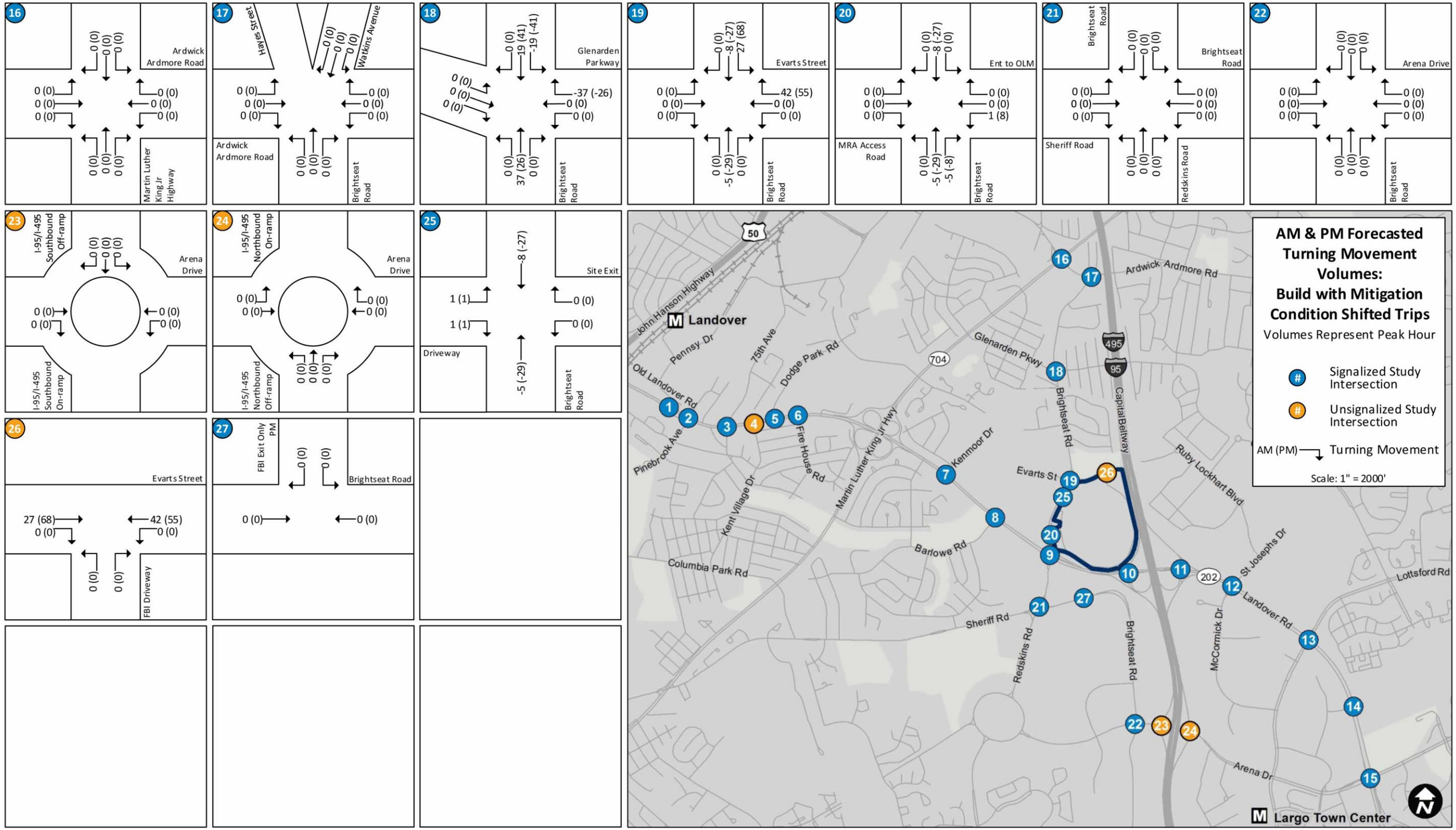


Figure 6-4: Build with Mitigation Condition FBI-only Mitigated Trip Generation

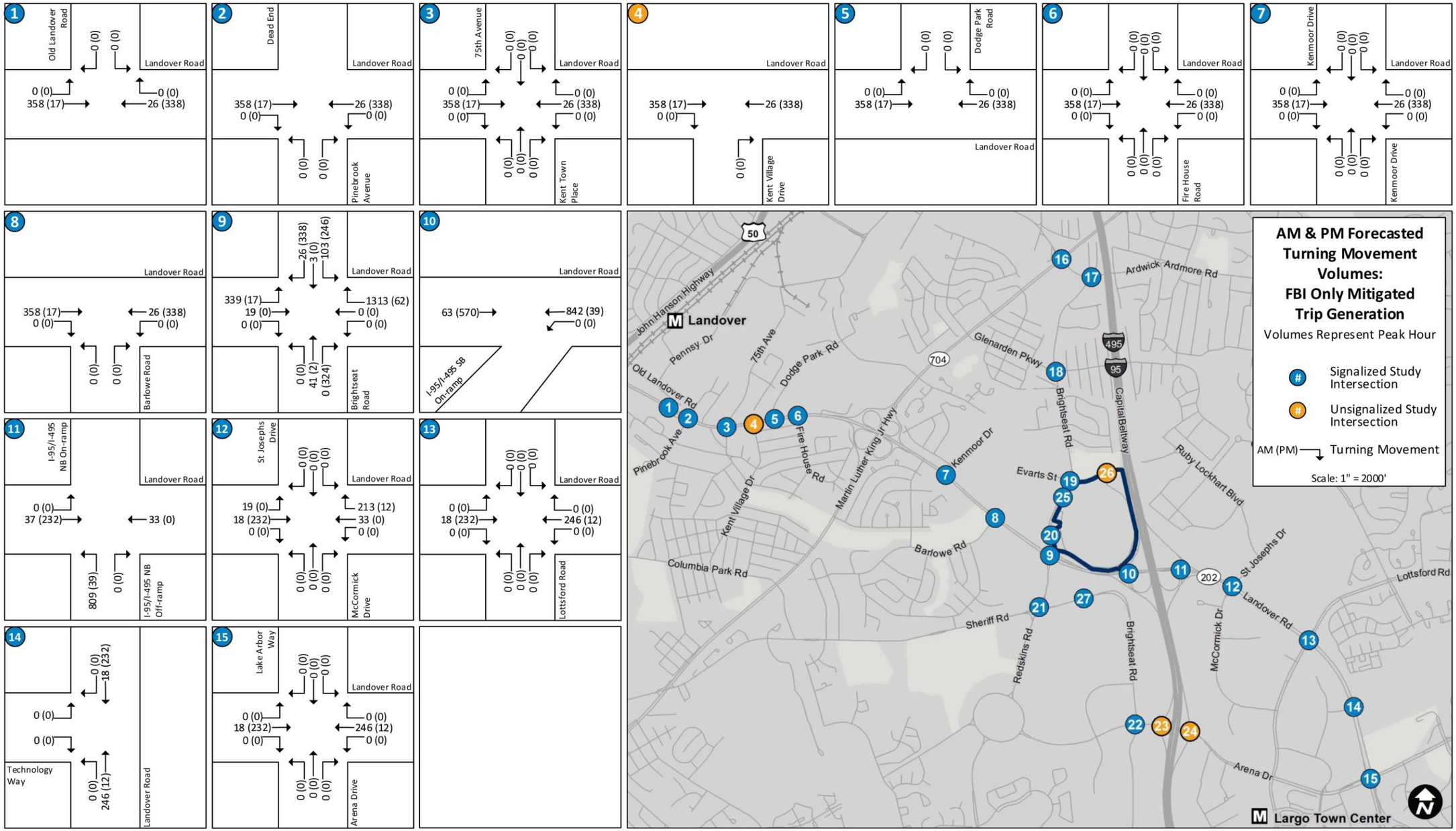


Figure 6-4: Build with Mitigation Condition FBI-only Mitigated Trip Generation (continued)

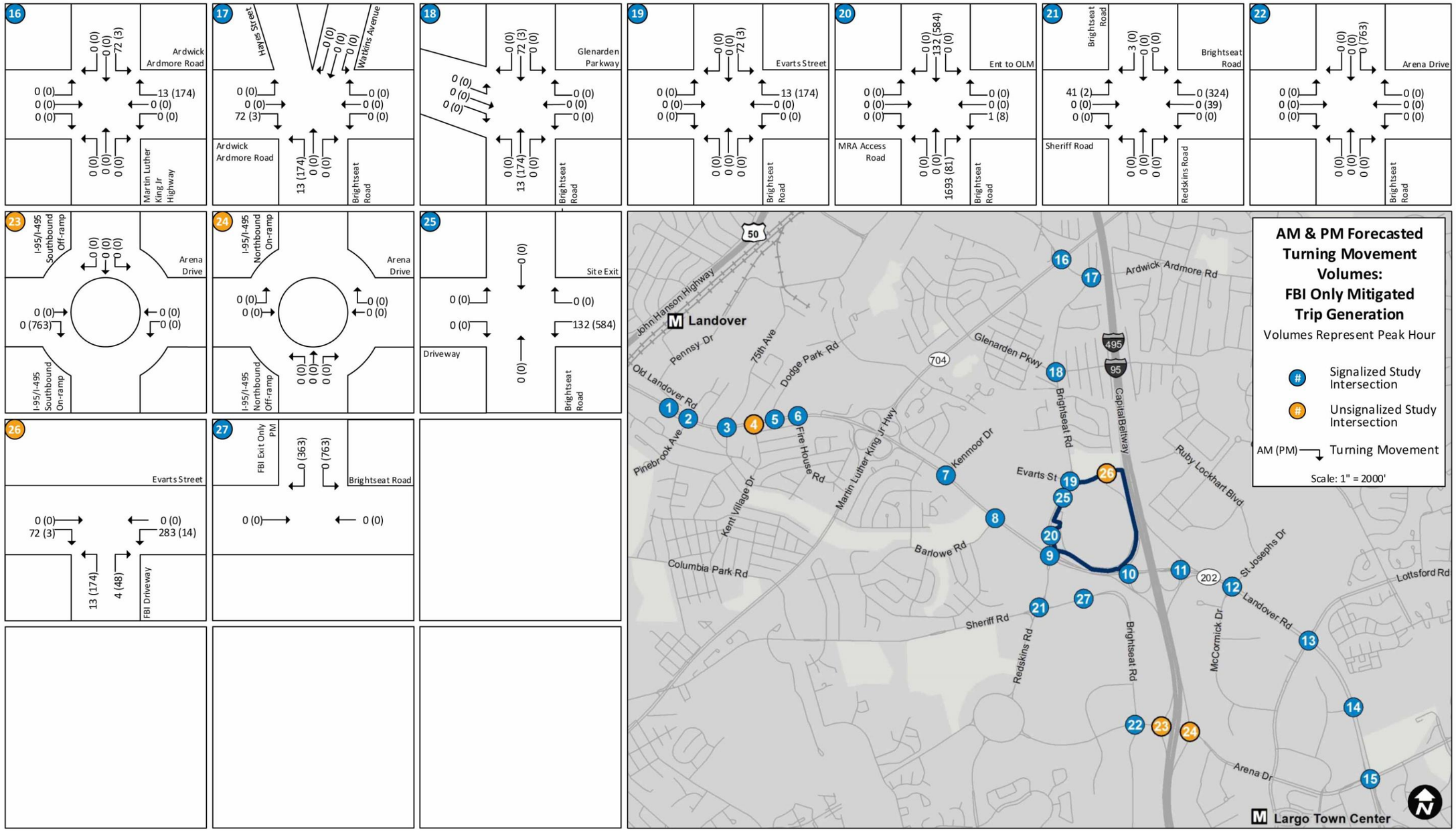


Figure 6-5: Build with Mitigation Condition Turning Movement Volumes

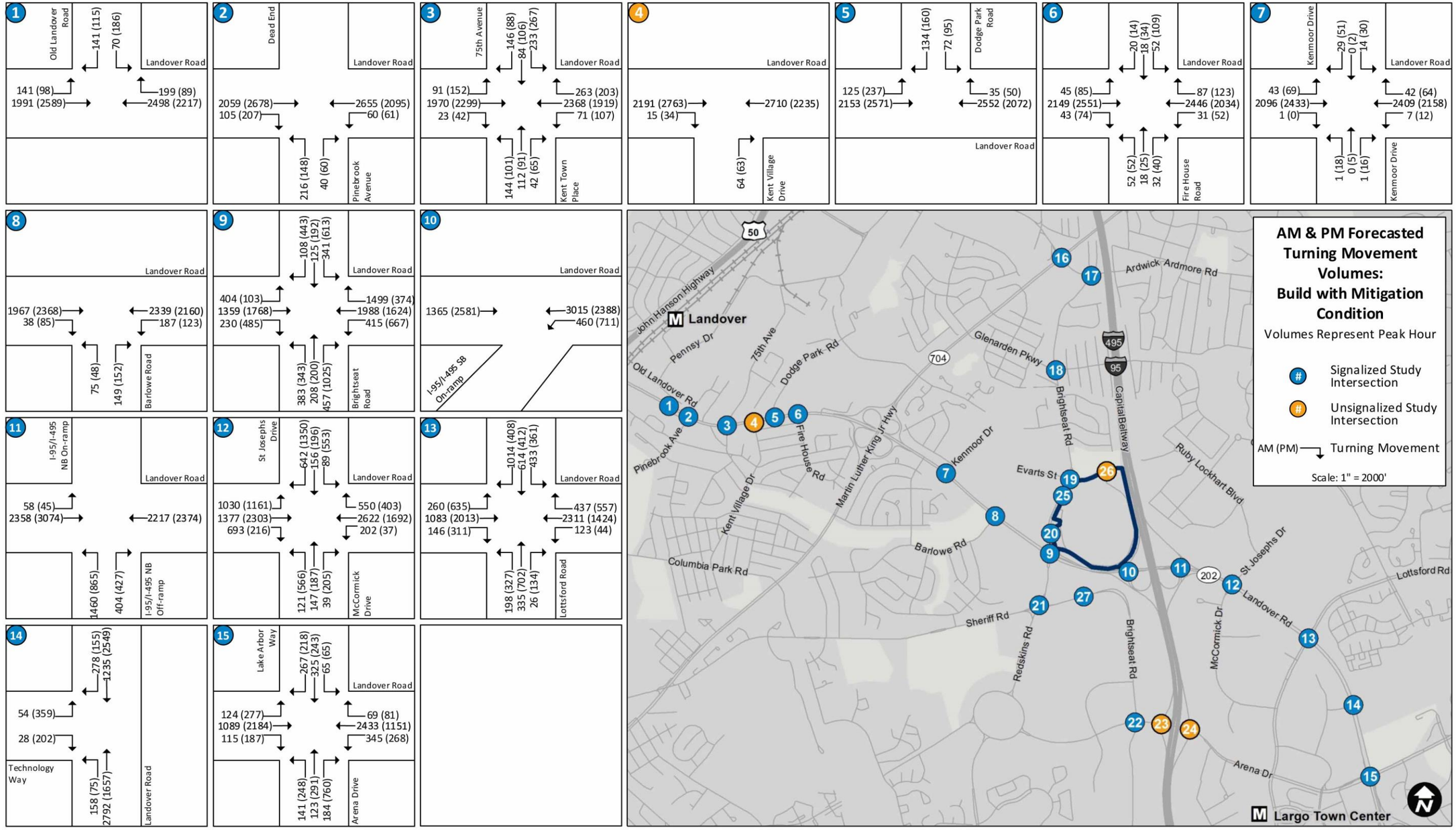
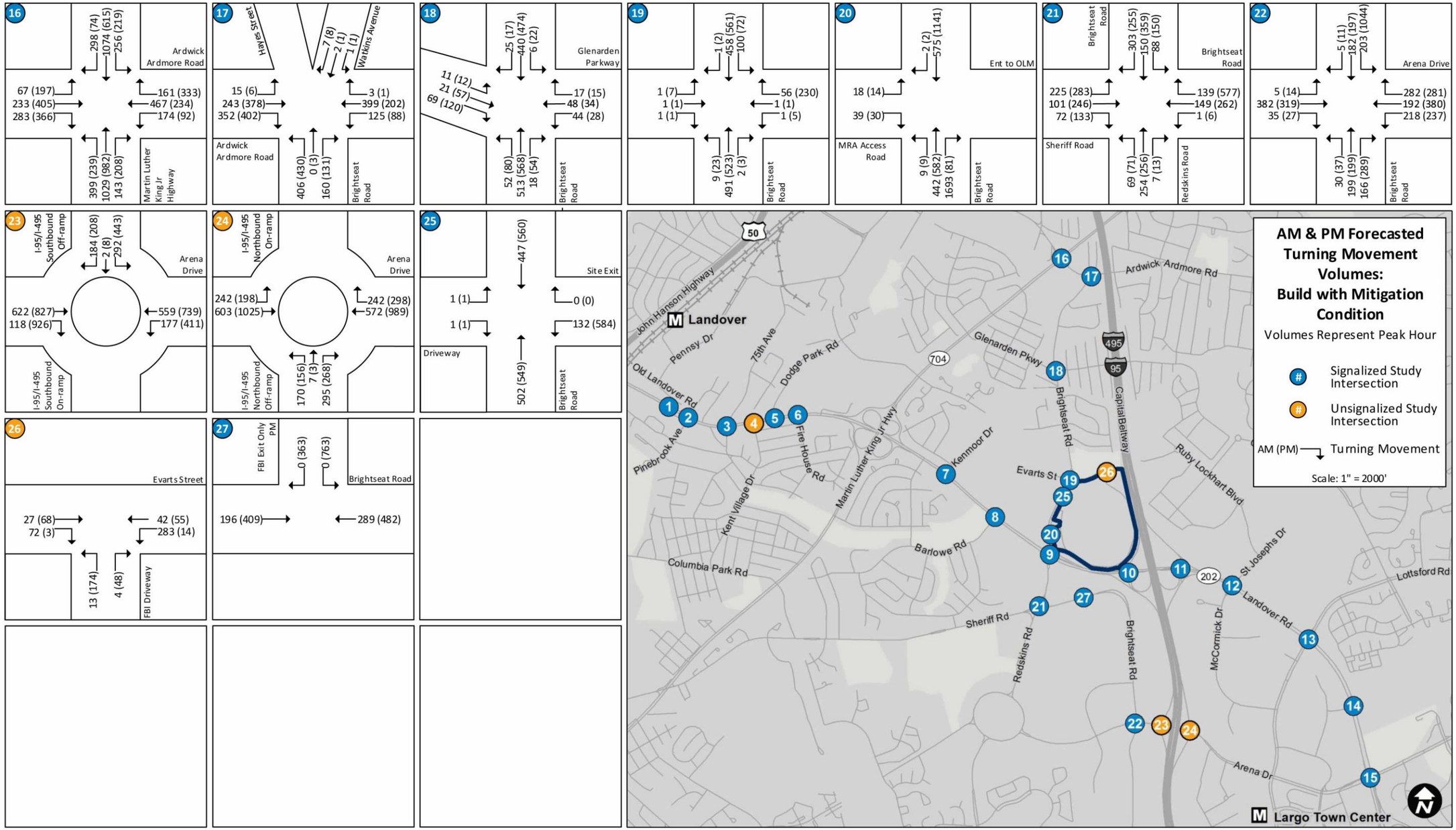


Figure 6-5: Build with Mitigation Condition Turning Movement Volumes (continued)



6.6.2 Recommend Mitigation Measures

Once the DTA was completed, the resulting traffic volumes were entered into Synchro™ to determine the study area intersection operations and queuing. Each intersection that had LOS degradation from a passing LOS (A-D) to a failing LOS (E or F) by lane group (right turns, through movements, or left turns) when compared to the No-build Condition was mitigated by one of the following methods:

- Optimize the existing traffic signal (change the amount of seconds of green to each approach)
- Coordinate a corridor of traffic signals
- Revise the existing lane geometry (number of right versus through versus left-turning lanes)
- Add new turning lanes
- Add through lanes

Since M-NCPPC requires each intersection be analyzed based on the CLV method, each intersection geometry and Build with Mitigation vehicle volumes were entered into the CLV worksheet to ensure the proposed recommended mitigation also resulted in a passing CLV LOS. Similar to the HCM method, M-NCPPC requires that failing intersections be improved to better condition than the No-build Condition (the difference between the failing CLV and mitigated CLV needs to be reduced by at least 150 percent of the delta between the failing CLV and No-build CLV).

A list of mitigation measures was developed through an iterative process of testing the different improvement strategies, starting with optimizing the traffic signals and progressing to adding lanes if warranted. The recommended roadway improvements include external roadway mitigation measures that support the revised Landover conceptual site plan. If implemented, the external roadway mitigations would improve the traffic operations at all study area intersections to a passing LOS (both HCM-based and CLV-based) or maintain a failing LOS that would be equal to or better than the No-build Condition operations. The recommended mitigations would also result in no vehicle queues beyond the available storage capacity, or if beyond the storage capacity, would be no greater than 150 feet longer than the queues measured for the No-build Condition. An acceptable queue length increase is not cited in the M-NCPPC guidelines; therefore, the 150 feet is referenced from the DDOT Comprehensive Transportation Review Requirements guidance (DDOT 2012) and provides a reasonable increase (approximately six vehicles or less).

Figure 6-5 shows the locations of the mitigation measures.

Table 6-5: Recommended Mitigation Measures

Map ID	Mitigation	Strip Land Taking (Approximate Linear Feet)
A	**Landover Road (MD 202) and Old Landover Road**	
	• Coordinate timings with nearby key intersections for the PM peak period.	None
B	**Landover Road (MD 202) and Dodge Park Road**	
	• Coordinate timings with nearby key intersections for the PM peak period.	None
C	**Landover Road (MD 202) and Firehouse Road**	
	• Coordinate timings with nearby key intersections for the PM peak period.	None
D	**Landover Road (MD 202) and Kenmoor Road**	
	• Coordinate timings with nearby key intersections for AM and PM peak periods.	None
E	**Landover Road (MD 202) and Barlowe Road**	
	• Coordinate timings with nearby key intersections for AM and PM peak periods.	None

Table 6-5: Recommended Mitigation Measures (continued)

Map ID	Mitigation	Strip Land Taking (Approximate Linear Feet)
F	**Landover Road (MD 202) and Brightseat Road**	
	• For the Landover Road eastbound approach, extend both left-turn lanes by 260 feet resulting in two 600-foot left-turn lanes, convert the existing 1,000 foot right-turn lane into a through lane, and create a new 400-foot right-turn lane to provide an approach with two left-turn lanes, four through lanes, and one right-turn lane. • For the Landover Road westbound approach, create a new 775-foot right-turn lane to provide an approach with two-left-turn lanes, three through lanes, and two right-turn lanes. The right turn lanes would no longer be free movements, but would be under signal control. A two-lane right turn lane requires signal control for safety to allow the other movements leading to Brightseat Road northbound full access to the all available lanes. • For the Brightseat Road northbound approach, extend the right most left-turn lane 350 feet back to the previous intersection (driveway serving Brightseat Road Property development), separate the right turn lanes from the through lanes, and create a new 400-foot right-turn lane to provide an approach with two left-turn lanes, two through lanes, and two right-turn lanes. • For the Brightseat Road southbound approach, create a new 350 foot left-turn lane and 350-foot right-turn lane to provide an approach with three left-turn lanes, one through lane, one shared through/right-turn lane, and one right-turn lane. The right-turn lanes would no longer be free movements, but would be under signal control. • Revise the traffic signal pattern from a split phase timing for Brightseat Road (north and south movements occur separately) to a protected lead-lag phase timing (similar to Landover Road approaches). Adjust the signal to provide a lead turn phase (occurs at the same time as the through movement) for the southbound left-turns and lag phase (occurs at the end of the through movements) for the northbound left-turns to allow vehicles to share the existing turning intersection geometry in the middle of the intersection.	760
G	**Landover Road (MD 202) and I-95 Southbound on-ramp**	
	• For the Landover Road eastbound approach, add a third through lane extended back 1,750 feet to the Brightseat Road intersection, resulting in a four-lane MD 202 eastbound cross section between Brightseat Road and the I-95 southbound off-ramp. • For the Landover Road westbound approach, add a third through lane extended 1,100 feet back to the previous intersection (I-95 northbound off-ramps), resulting in a four-lane MD 202 westbound cross section. • Widen the Landover Road Bridge over I-95 by two lanes to the north to avoid impacting the existing loop ramps in the SE and SW corner of the interchange. • Optimize the traffic signal and coordinate timings with nearby key intersections for AM and PM peak periods.	530

Table 6-5: Recommended Mitigation Measures (continued)

Map ID	Mitigation	Strip Land Taking (Approximate Linear Feet)
H	**Landover Road (MD 202) and I-95 northbound off-ramp**	
	• For the Landover Road eastbound approach, add a fourth through lane extended 1,100 feet back to the previous intersection (I-95 southbound on-ramp), resulting in a four-lane Landover Road eastbound cross section spanning the bridge over I-95. Extend the left-turn lane 100 feet resulting in a 250-foot left-turn lane. • For the Landover Road westbound approach, add a third through lane extended 300 feet back to the I-95 northbound on-ramp diverge from Landover Road. • For the I-95 off-ramp approach, add a 400-foot third left-turn lane to provide an approach with three left-turn lanes and one right-turn lane. • Optimize the traffic signal and coordinate timings with nearby key intersections for AM and PM peak periods.	None
I	**Landover Road (MD 202) and McCormick Drive/St. Joseph's Drive**	
	• Optimize the traffic signal for the PM peak period and coordinate timings with nearby key intersections for AM and PM peak periods.	None
J	**Landover Road (MD 202) and Lottsford Road**	
	• For the Lottsford Road southbound approach, create a new 350-foot left-turn lane to provide an approach with two left lanes, two through lanes, and one right-turn lane. • For the Lottsford Road northbound approach, revise the existing lane geometry to provide an approach with two left-turn lanes, two through lanes, and one right-turn lane. • Optimize the traffic signal and coordinate timings with nearby key intersections for the AM and PM peak periods.	None
K	**Landover Road (MD 202) and Technology Way**	
	• Coordinate timings with nearby key intersections for AM and PM peak periods.	None
L	**Landover Road (MD 202) and Arena Drive/Lake Arbor Way**	
	• Coordinate timings with nearby key intersections for AM and PM peak periods.	None
M	**Martin Luther King Jr. Highway (MD 704) and Ardwick-Ardmore Road**	
	• For the Ardwick-Ardmore Road eastbound approach, revise the lane geometry to provide an approach with one right-turn lane, one through lane, and one shared through/left-turn lane. • For the Ardwick-Ardmore Road westbound approach, install dynamic lane controls depending on the time of the day. Use the existing lane geometry during all times except during the PM peak period. During the PM peak period assign the left lane for shared through/left-turns only and the right lane for right-turns only. • Optimize the traffic signal for AM and PM peak periods.	None

Table 6-5: Recommended Mitigation Measures (continued)

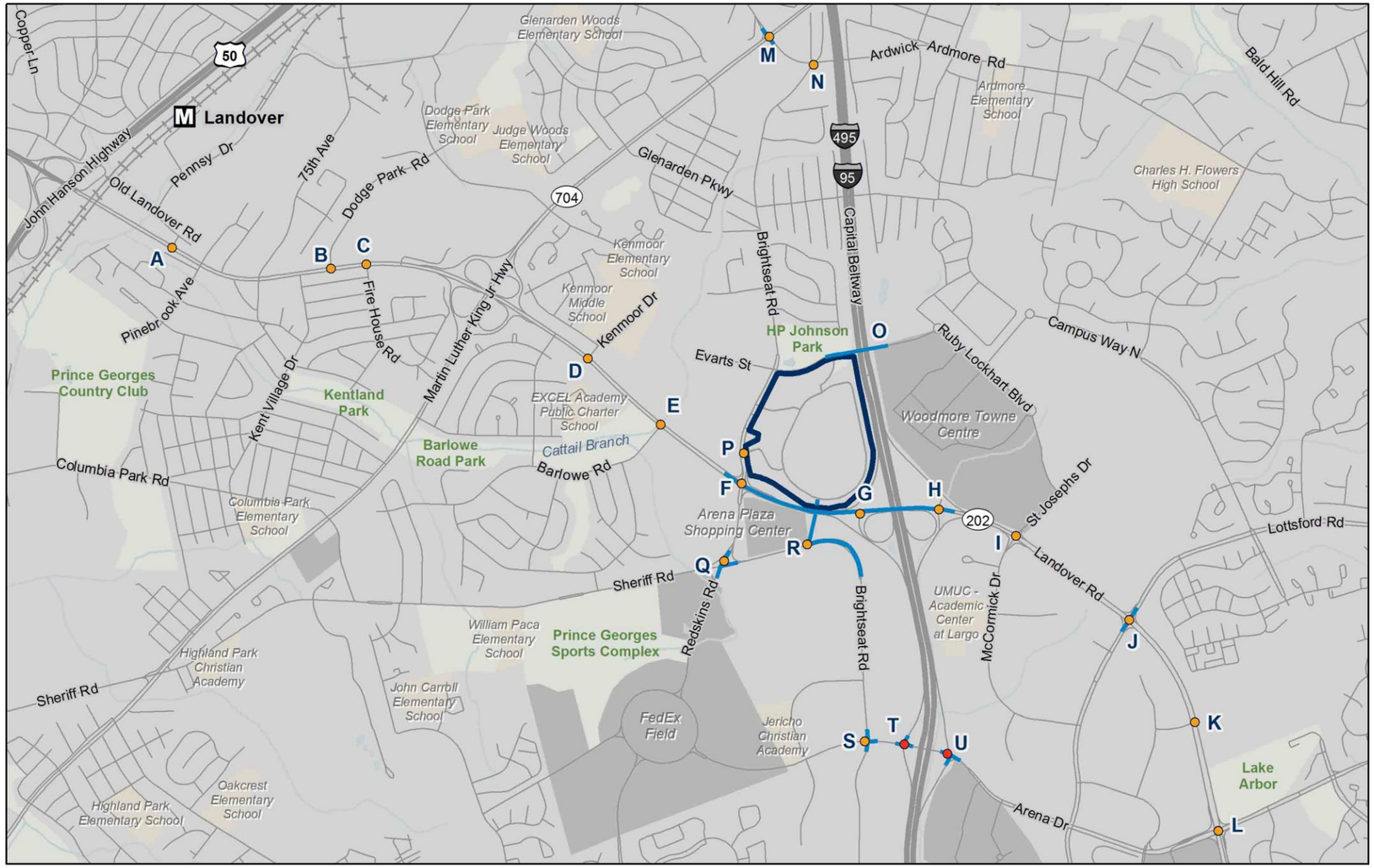
Map ID	Mitigation	Strip Land Taking (Approximate Linear Feet)
N	**Ardwick-Ardmore Road and Brightseat Road**	
	• Install new traffic signal at Brightseat Road and Ardwick-Ardmore Road. • For the Brightseat Road northbound approach, extend the right-turning lane along Brightseat Road northbound by 50 feet to a new length of 200 feet.	None
O	**Evarts Street Bridge**	
	• Construct a new four-lane bridge over I-95 to connect the east and west parts of Evarts Street.	None
P	**Brightseat Road and Site West Entrance/Maple Ridge Apartment south entrance**	
	• Upgrade the Build Condition traffic signal to serve exiting vehicles from the apartments only, allowing right or left-turns only. The traffic signal would not serve Brightseat Road northbound through or right-turn movements. • Install a raised triangular curb in the middle of the intersection to allow left-turns from Brightseat Road northbound to the apartments and left-turns from the apartments to Brightseat Road northbound. Through moves from the apartments to the Site West Entrance would not be possible. The two Brightseat Road northbound through lanes would shift right after the intersection to allow the left-lane to only serve vehicles turning left from the apartments. • For the Brightseat Road northbound approach, change the lane geometry to provide an approach with two right-turn lanes, a shared through/right-turn lane, one through lane, and one left-turn lane.	None
Q	**Brightseat Road/Redskins Road and Sheriff Road/Brightseat Road**	
	• For the Redskins Road northbound approach, revise the lane geometry to provide an approach with one left-turn lane, two through lanes, and one right-turn lane. • For the Brightseat Road westbound approach, revise the signing on the channelized right-turn to indicate a free merge. • Revise the lane striping north of the intersection along Brightseat Road to clearly indicate that the right-most lane is closed to traffic to allow the westbound approach right-turn lane a free merge onto Brightseat Road northbound. One option is to replace the white lines with a 150-foot yellow stripe between the right and middle lanes from the intersection to the westbound right-turn lane merge. • Optimize the traffic signal for AM and PM peak periods.	None
R	**Brightseat Road and Site South Exit**	
	• Install a new traffic signal to serve the intersection during the PM only. • Widen Brightseat Road in the southbound direction by one lane to form two 1,000-foot southbound travel lanes between the new FBI south exit intersection and the existing four-lane cross section	None

Table 6-5: Recommended Mitigation Measures (continued)

Map ID	Mitigation	Strip Land Taking (Approximate Linear Feet)
S	**Brightseat Road and Arena Drive**	
	• For the Brightseat Road northbound approach, revise the lane geometry to provide one left-turn lane, one through lane, and one right-turn lane. • For the Brightseat Road southbound approach, extend the left-turn lane by 290 feet to create a 500-foot left-turn lane and revise the lane geometry to provide two left-turn lanes and one shared through/right-turn lane. • For the Arena Drive westbound approach, revise the lane geometry to provide one shared left-turn/ through lane, one through lane, and one right-turn lane. • Optimize the traffic signal for the PM peak period.	200
T	**Arena Drive and I-95 southbound on/off ramps**	
	• Replace the intersection with a two-lane roundabout. • For the Arena Drive eastbound approach, revise the lane geometry to stripe the two left lanes to enter the roundabout and the right lane to provide a bypass lane that feeds directly onto the I-95 southbound on-ramp. • For the Arena Drive westbound approach, revise the lane geometry to provide two lanes to enter the roundabout. • For the I-95 southbound off-ramp, stripe the existing lanes to enter the roundabout and create a 200-foot right-turn lane to provide a bypass lane that feeds directly onto Arena Drive westbound.	None
U	**Arena Drive and I-95 northbound on/off ramps**	
	• Replace the intersection with a two-lane roundabout. • For the Arena Drive eastbound approach, revise the lane geometry to provide two lanes to enter the roundabout. • For the Arena Drive westbound approach, revise the lane geometry to provide two lanes to enter the roundabout. • For the I-95 northbound off-ramp, stripe the existing lanes to enter the roundabout and create a 150-foot right-turn lane to provide a yielding bypass lane that feeds directly onto Arena Drive westbound.	None

Figure 6-6 shows the locations of the mitigation measures and figure 6-7 shows the lane geometry with the mitigation in place. Figure 6-8 shows the AM peak hour inbound and PM peak hour outbound FBI Vehicle trip paths.

Figure 6-6: Build with Mitigation Improvement Locations



Site Boundary

Roadway Improvement

Intersection Improvement (Signalized)

Intersection Improvement (Unsignalized)

0 1,000 2,000 3,000

Feet

1 inch = 2,000 feet

Sources:
ESRI (2013), GSA (2013),Prince George's County (2013)

Figure 6-7: Build with Mitigation Condition Lane Geometry

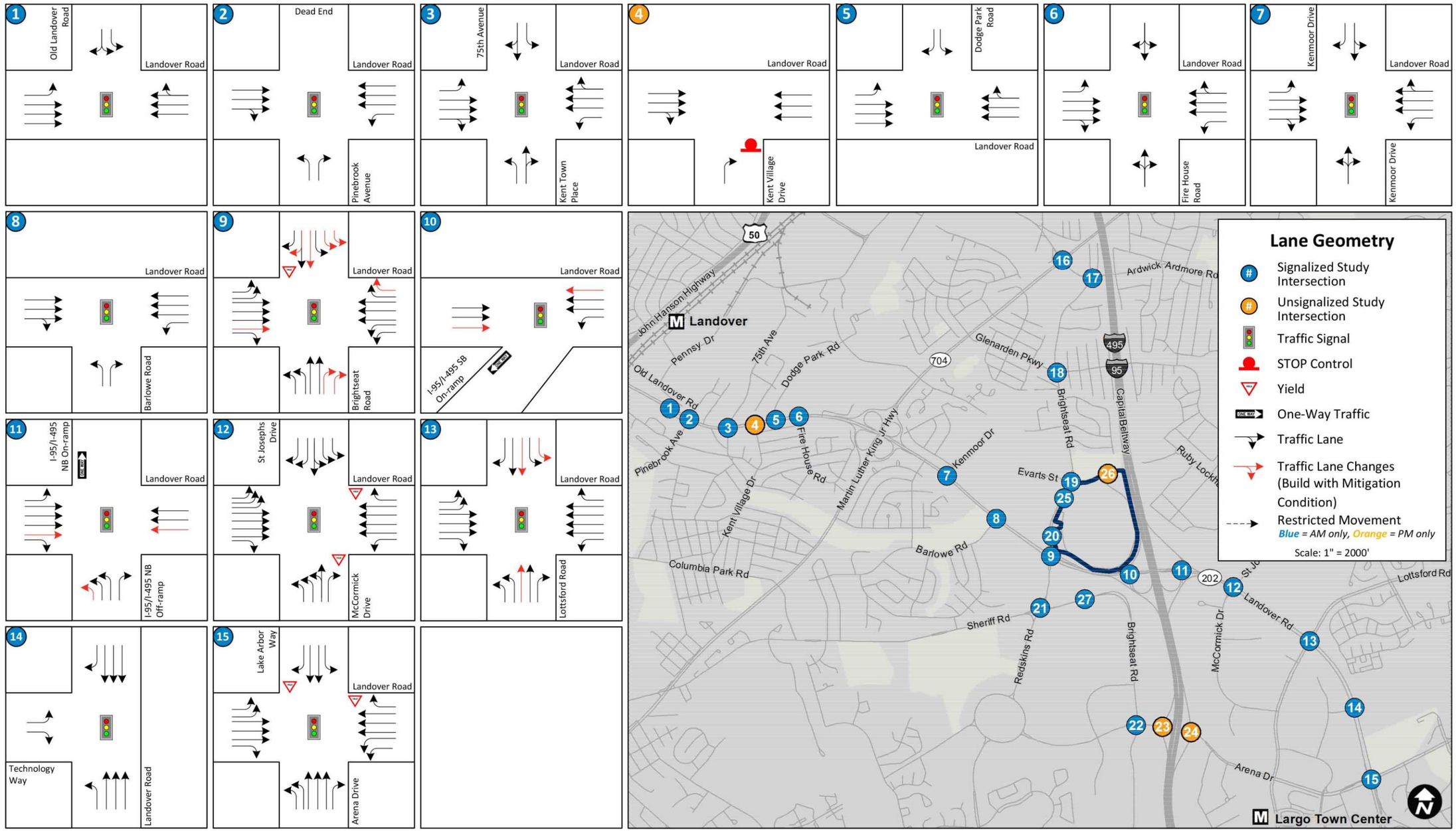


Figure 6-7: Build with Mitigation Condition Lane Geometry (continued)

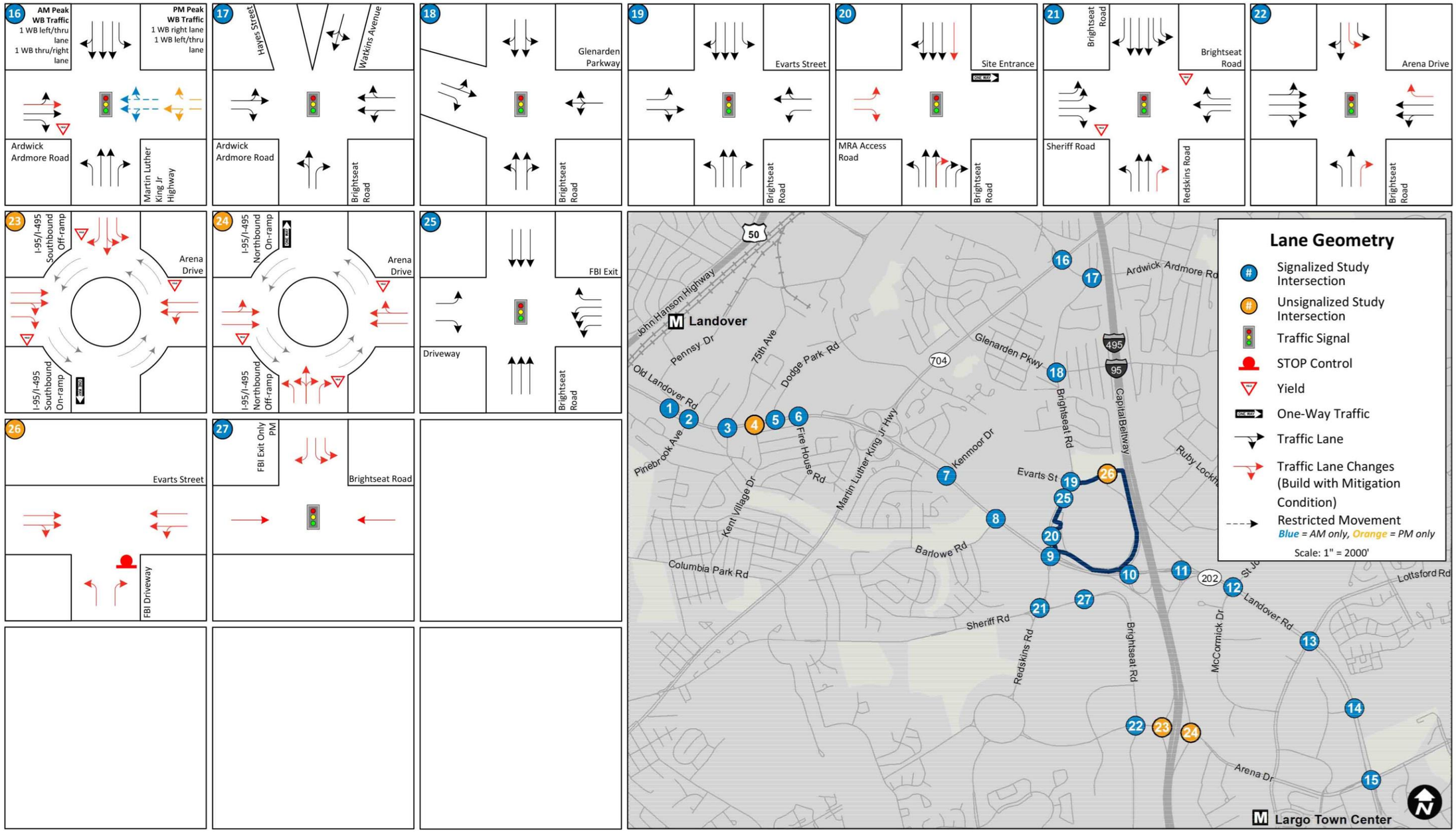


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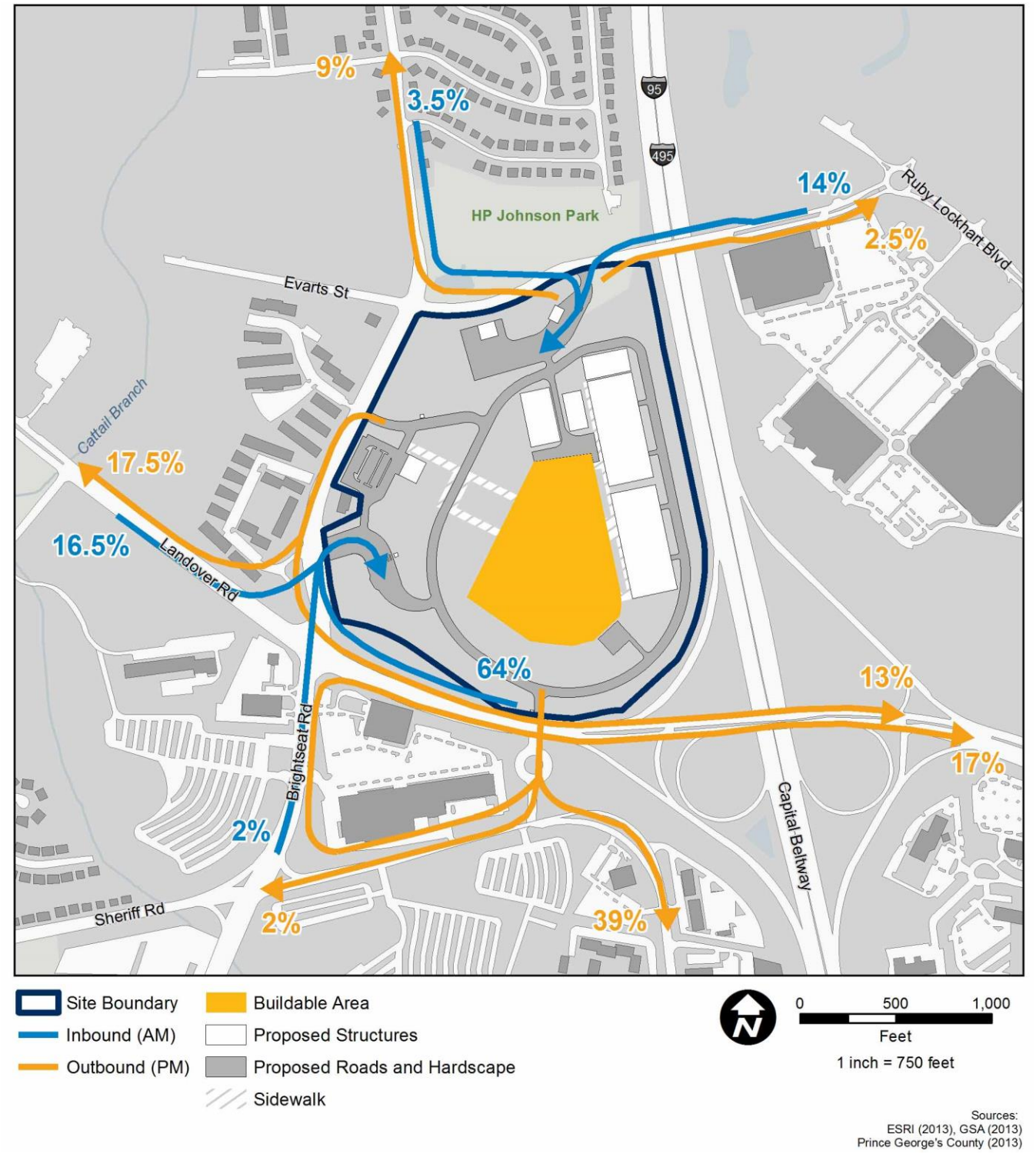
Figure 6-8: AM Peak Hour Inbound and PM Peak Hour Outbound FBI Vehicle Trip Paths



6.6.3 Land Use Impact Summary

This section references the Prince George's County internet-based PGAtlas tool to provide an estimate of property impacts (M-NCPPC 2012b). Several of the proposed recommended mitigation measures might require property strip takings at three intersections: Landover Road (MD 202) and Brightseat Road, Brightseat Road and Site South Access, and Brightseat Road and Arena Drive. The Landover Road and Brightseat Road mitigation measures would impact the eastbound approach addition of a new lane beginning 400 feet west of the intersection and continuing 560 feet east of the intersection. These impacts would affect two parcels. The impacts at this intersection would also include a new lane added to Brightseat Road in the northbound direction beginning 360 feet prior to the intersection and impacting one parcel. A total of two parcels would be impacted (the Brightseat Road impacts affect the same parcel as Landover Road (east of the intersection). The Brightseat Road and Site South Access intersection impact would include the 400-foot exit-only driveway between the intersection and Landover Road underpass and would affect the same parcel as the Brightseat Road impact. The Brightseat Road and Arena Drive impact would include the extension of the existing left-turn lane resulting in an impact to one parcel.

In total, three parcels would be impacted by these mitigation measures, one industrial property and two commercial properties. It should be noted that these potential impacts are based on conceptual roadway changes. During the design phase, the property impacts would be more defined including the total square acres impacted and design measures that could be employed to lessen the impact such as narrowing travel lanes or shifting roadway alignment.

6.6.4 Intersection Operations Analysis

Synchro™ was used to calculate the vehicle delay and LOS operation based on the HCM 2000 method for each study area intersection. Custom designed Excel sheets were used to calculate the LOS operation based on the CLV method.

6.6.4.1 Signalized Intersection Operations Analysis

Based on the Synchro™ and CLV-based Excel worksheet analysis, all but four signalized study area intersection would operate at acceptable overall conditions during the morning and afternoon peak hours. The following intersections in the study area would operate with overall unacceptable conditions, which include LOS E or LOS F using the HCM 2000 method or LOS F using the CLV method:

- Landover Road and Kent Town Place/75th Avenue (Intersection #3) would operate at CLV LOS F during the AM peak hour (same failure in No-build)

  Note that the Build with Mitigation Condition would result in less than a one percent difference in CLV when compared to the No-build Condition. The Build with Mitigation Condition CLV would increase when compared to the No-build Condition CLV by 9

- Landover Road and the I-95/I-495 Southbound On-ramp (Intersection #10) would operate at CLV LOS F during the PM peak hour (same failure in No-build)

  Note that the Build with Mitigation Condition would result in a better operation than the No-build Condition. The Build with Mitigation Condition CLV would decrease when compared to the No-build Condition CLV by 166, greater than a 9.0 percent decrease

- Landover Road and St. Joseph's Drive/McCormick Drive (Intersection #12) would operate at HCM LOS F and CLV LOS F during the PM peak hour (same failure in No-build)

Note that the Build with Mitigation Condition would result in a better operation than the No-build Condition. The Build with Mitigation Condition HCM average control delay would decrease when compared to the No-build Condition HCM average control delay by 8.7 seconds per vehicle, greater than a 9 percent decrease. The Build with Mitigation Condition CLV would decrease when compared to the No-build Condition CLV by 21, more than a 10.0 percent decrease.

- Martin Luther King Jr. Highway and Ardwick-Ardmore Road (Intersection #16) would operate at HCM LOS F during the AM peak hour and HCM LOS E during the PM peak hour (same failure in No-build)

Note that the Build with Mitigation Condition would result in a better operation than the No-build Condition. For the AM, note that the Build with Mitigation Condition HCM average control delay would decrease when compared to the No-build Condition HCM average control delay by 5.6 seconds per vehicle, more than a 5 percent decrease. For the PM, note that the Build with Mitigation Condition HCM average control delay would decrease when compared to the No-build Condition HCM average control delay by 1.9 seconds per vehicle, greater than a 2 percent decrease.

Compared to No-build Condition, three fewer intersections fail overall, resulting in four failures in either the AM or PM peak hour.

Based on the Synchro™ analysis, five signalized intersections would have lane groups or overall approaches with LOS degradation from an acceptable condition (LOS A through LOS D) to an unacceptable condition (LOS E or LOS F) when compared to the No-build Condition during the morning or afternoon peak hours. The lane group within the approach that is operating under unacceptable conditions is noted in parenthesis.

- Landover Road and Barlowe Road (Intersection #8)
  - Westbound Landover Road (left turns) during the AM peak hour
    - Note that the Landover westbound overall LOS would remain LOS A
- Landover Road and Brightseat Road (Intersection #9)
  - Eastbound (left turns) on Landover Road, southbound Brightseat Road during the AM peak hour
    - Note that the Landover eastbound overall LOS would remain LOS D
  - Westbound (throughs) on Landover Road during the AM peak hour
    - Note that the Landover westbound overall LOS would remain LOS D
  - Northbound (throughs) on Brightseat Road during the AM peak hour
    - Note that the Brightseat northbound overall LOS would remain LOS D
- Landover Road and St. Joseph's Drive/McCormick Drive (Intersection #12)
  - Westbound (throughs) on Landover Road during the PM peak hour
    - Note that the Landover westbound overall average control delay would decrease by 17.9 seconds, greater than a 17 percent decrease
- Martin Luther King Jr. Highway and Ardwick-Ardmore Road (Intersection #16)
  - Northbound Martin Luther King Jr. Highway (throughs) during the AM peak hour
    - Note that the Martin Luther King, Jr. Highway northbound overall LOS would remain LOS E (average control delay has a minor increase by 1.5 seconds)
  - Southbound Martin Luther King Jr. Highway (throughs) during the AM peak hour
    - Note that the Martin Luther King Jr. Highway southbound overall LOS would be LOS F in the No-build Condition and would increase by 4.8 seconds for the Build with Mitigation Condition; however, to mitigate this issue a second through lane would need to be added to the Ardwick-Ardmore Road eastbound approach and would impact property

    - Eastbound Ardwick-Ardmore Road (overall) during the PM peak hour
        - Note that the average control delay would increase by 10.1 seconds; however, to mitigate this issue a second through lane would need to be added to the Ardwick-Ardmore Road eastbound approach and would impact property
    - Adding a second thorough lane for Ardwick-Ardmore Road eastbound would mitigate the impacts that would be caused by the adding the FBI vehicle trips; however, the improvements would require strip land taking and would not improve the overall intersection to a passing LOS
- Brightseat Road/Redskins Road and Sheriff Road/Brightseat Road (Intersection #21)
    - Eastbound Sheriff Road (overall) during the AM peak hour
        - Note that the Sheriff Road eastbound overall average control delay would increase by 3.5 seconds or 5 percent

6.6.4.2 Unsignalized Intersection Operations Analysis

Based on the Synchro™ analysis, none of the unsignalized intersection would have lane groups or overall approaches with LOS degradation from an acceptable condition (LOS A through LOS D) to an unacceptable condition (LOS E or LOS F) when compared to the No-build Condition during the morning or afternoon peak hours.

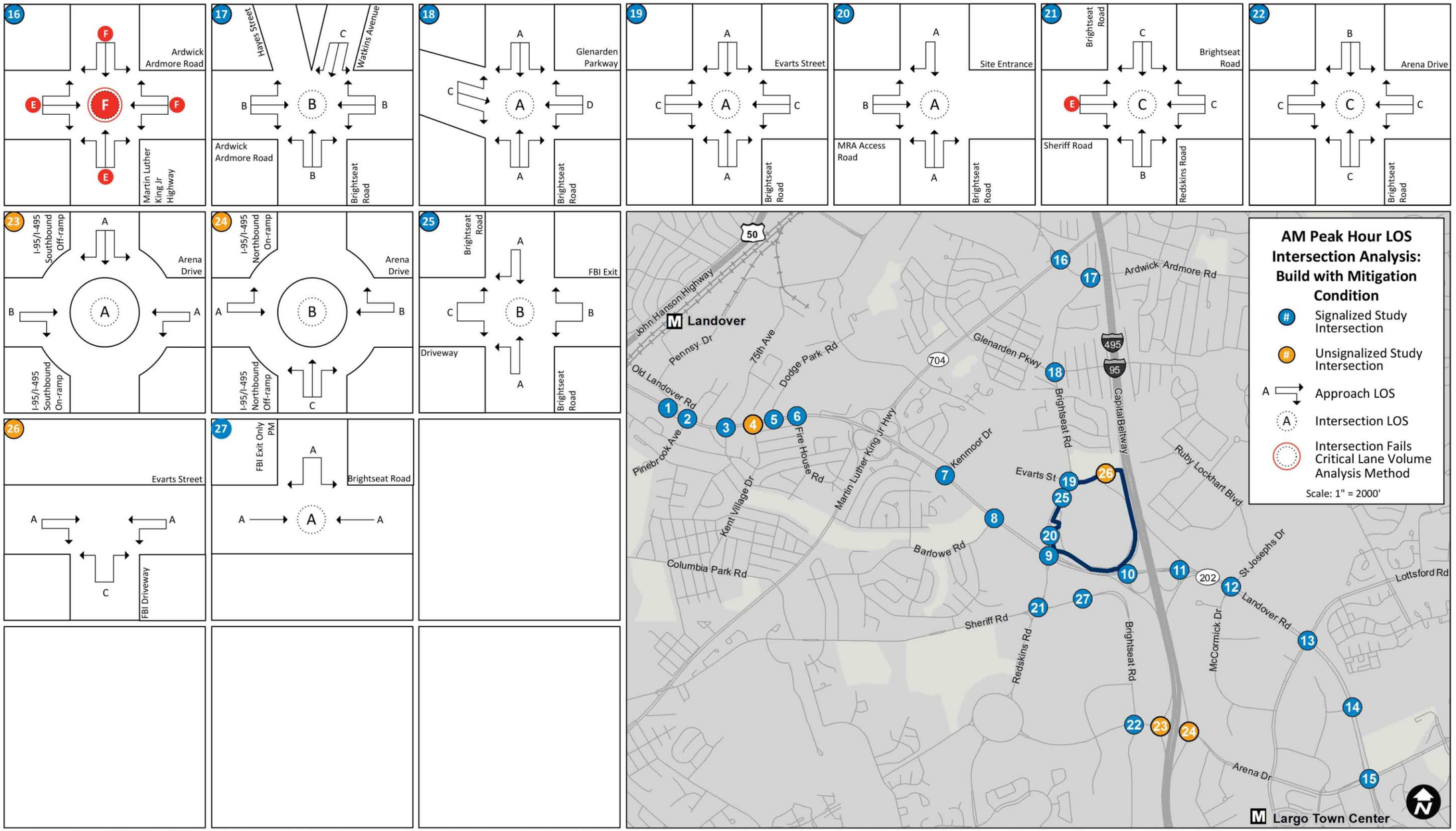
6.6.4.3 Complete Intersection Operations Analysis

The average LOS for the various approaches to the intersections and the overall intersection LOS grades for the Build with Mitigation Conditions are depicted in figures 6-9 and 6-10 for the AM and PM peak hours, respectively. Table 6-6 shows the results of the LOS capacity analysis and the intersection projected delay under the No-build Condition compared to the Build with Mitigation Condition during the AM and PM peak hours.

Figure 6-9: Build with Mitigation Condition Intersection LOS for AM Peak Hour

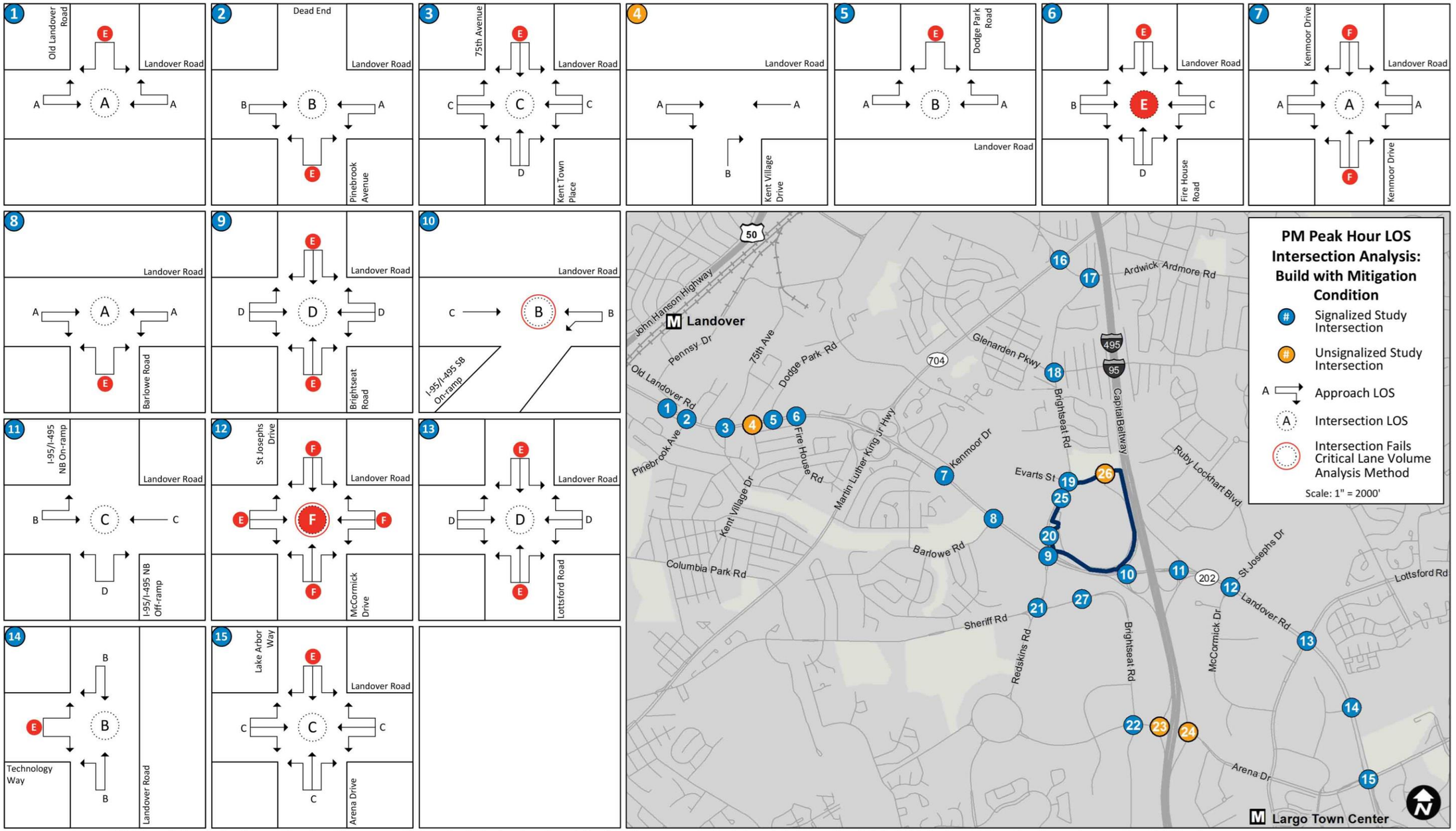
Note: One- or two-way STOP-Controlled unsignalized intersections do not have an overall intersection LOS value, since the mainline through move operates freely through the intersection. Red shaded circles denote intersections/approaches operating at LOS E or F.

Figure 6-9: Build with Mitigation Condition Intersection LOS for AM Peak Hour (continued)



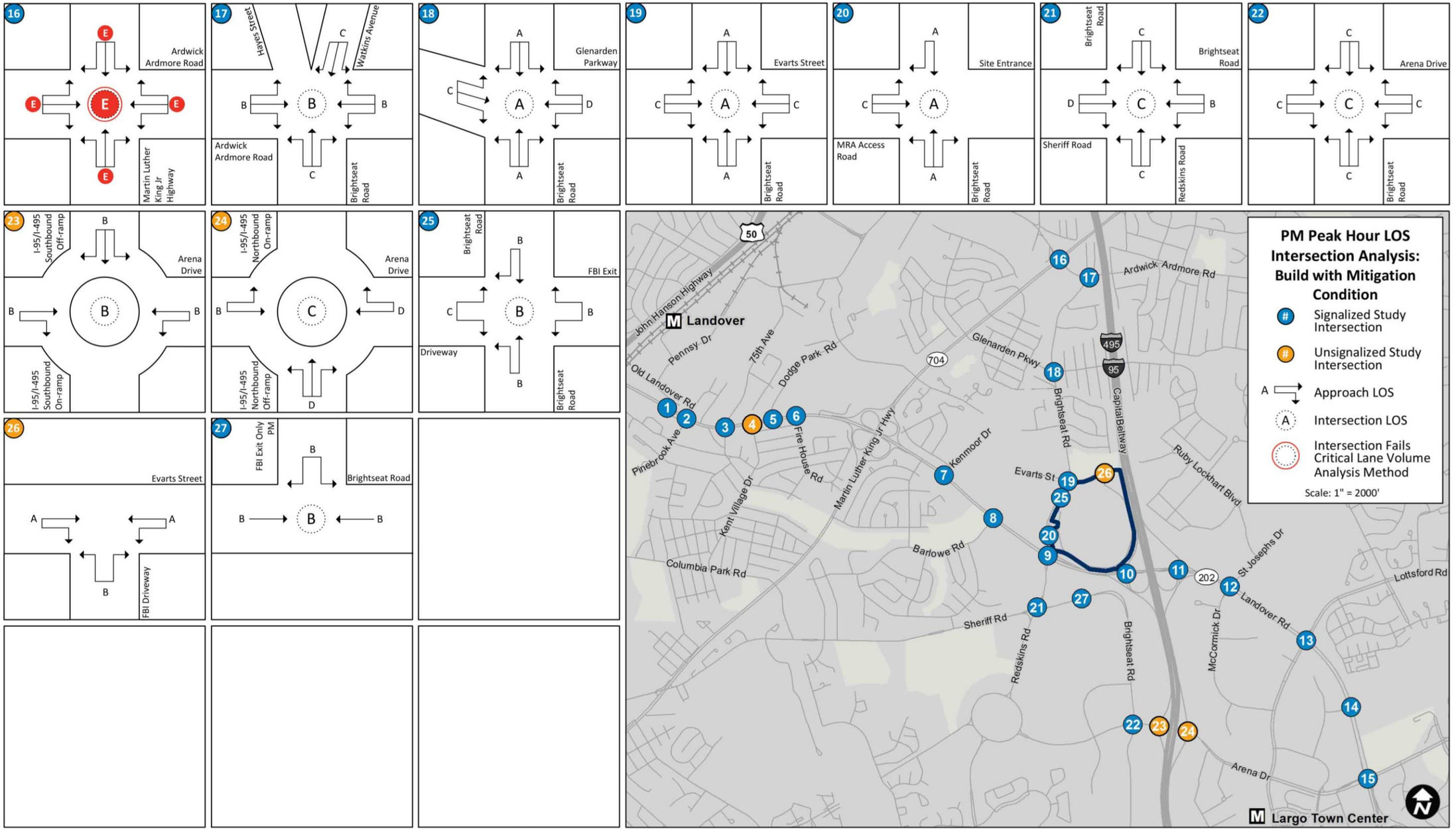
Note: One- or two-way STOP-Controlled unsignalized intersections do not have an overall intersection LOS value, since the mainline through move operates freely through the intersection. Red shaded circles denote intersections/approaches operating at LOS E or F.

Figure 6-10: Build with Mitigation Condition Intersection LOS for PM Peak Hour



Note: One- or two-way STOP-Controlled unsignalized intersections do not have an overall intersection LOS value, since the mainline through move operates freely through the intersection. Red shaded circles denote intersections/approaches operating at LOS E or F.

Figure 6-10: Build with Mitigation Condition Intersection LOS for PM Peak Hour (continued)



Note: One- or two-way STOP-Controlled unsignalized intersections do not have an overall intersection LOS value, since the mainline through move operates freely through the intersection. Red shaded circles denote intersections/approaches operating at LOS E or F.

Table 6-6: Comparison of No-build and Build with Mitigation Condition Intersection AM and PM Peak Hour Operations Analysis

#	Intersection and Approach	Lane Group	No-build Condition									Build with Mitigation Condition									
			AM Peak Hour					PM Peak Hour				AM Peak Hour					PM Peak Hour				
			HCM 2000		CLV			HCM 2000		CLV			HCM 2000		CLV			HCM 2000		CLV		
			Delay (sec/ veh)	LOS	Critical Lane Volume	LOS	Check	Delay (sec/ veh)	LOS	Critical Lane Volume	LOS	Check	Delay (sec/ veh)	LOS	Critical Lane Volume	LOS	Check	Delay (sec/ veh)	LOS	Critical Lane Volume	LOS	Check
1	**Landover Road & Old Landover Road (Signalized)**																				
	EB (Landover Rd)	L	58.5	E				22.2	C				58.7	E				46.1	D			
	EB (Landover Rd)	T	2.3	A				6.2	A				2.7	A				6.2	A			
	EB Overall (Landover Rd)		**6.8**	**A**				**6.8**	**A**				**6.4**	**A**				**7.7**	**A**			
	WB (Landover Rd)	TR	4.7	A				4.4	A				4.7	A				4.1	A			
	WB Overall (Landover Rd)		**4.7**	**A**				**4.4**	**A**				**4.7**	**A**				**4.1**	**A**			
	SB (Old Landover Rd)	LR	66.9	E				65.9	E				66.9	E				65.9	E			
	SB Overall (Old Landover Rd)		**66.9**	**E**				**65.9**	**E**				**66.9**	**E**				**65.9**	**E**			
	Overall		**8.3**	**A**	**1,438**	**D**	**Pass**	**9.4**	**A**	**1,179**	**C**	**Pass**	**8.0**	**A**	**1,447**	**D**	**Pass**	**9.4**	**A**	**1,234**	**C**	**Pass**
2	**Landover Road & Pinebrook Avenue (Signalized)**																				
	EB (Landover Rd)	TR	10.4	B				11.2	B				12.3	B				11.4	B			
	EB Overall (Landover Rd)		**10.4**	**B**				**11.2**	**B**				**12.3**	**B**				**11.4**	**B**			
	WB (Landover Rd)	L	19.7	B				57.3	E				34.9	C				58.2	E			
	WB (Landover Rd)	T	3.1	A				1.9	A				3.2	A				1.7	A			
	WB Overall (Landover Rd)		**3.5**	**A**				**3.8**	**A**				**3.9**	**A**				**3.3**	**A**			
	NB (Pinebrook Ave)	L	68.2	E				71.2	E				68.2	E				71.2	E			
	NB (Pinebrook Ave)	R	52.6	D				58.5	E				52.6	D				58.5	E			
	NB Overall (Pinebrook Ave)		**65.7**	**E**				**67.5**	**E**				**65.7**	**E**				**67.5**	**E**			
	Overall		**9.5**	**A**	**1,189**	**C**	**Pass**	**10.8**	**B**	**1,401**	**D**	**Pass**	**10.5**	**B**	**1,198**	**C**	**Pass**	**10.3**	**B**	**1,407**	**D**	**Pass**
3	**Landover Road & Kent Town Place/75th Avenue (Signalized)**																				
	EB (Landover Rd)	L	95.6	F				76.5	E				91.2	F				80.4	F			
	EB (Landover Rd)	TR	12.0	B				22.0	C				13.0	B				22.5	C			
	EB Overall (Landover Rd)		**16.4**	**B**				**25.4**	**C**				**16.4**	**B**				**26.0**	**C**			
	WB (Landover Rd)	L	31.8	C				69.5	E				43.9	D				66.2	E			
	WB (Landover Rd)	TR	19.7	B				17.8	B				21.9	C				23.7	C			
	WB Overall (Landover Rd)		**20.0**	**C**				**20.7**	**C**				**22.5**	**C**				**25.8**	**C**			
	NB (Kent Town Pl)	L	61.0	E				41.6	D				61.0	E				41.6	D			
	NB (Kent Town Pl)	TR	42.9	D				39.6	D				42.9	D				39.6	D			
	NB Overall (Kent Town Pl)		**51.6**	**D**				**40.4**	**D**				**51.6**	**D**				**40.4**	**D**			
	SB (75th Ave)	L	98.8	F				84.0	F				98.8	F				84.0	F			
	SB (75th Ave)	TR	45.0	D				40.8	D				45.0	D				40.8	D			
	SB Overall (75th Ave)		**72.1**	**E**				**65.8**	**E**				**72.1**	**E**				**65.8**	**E**			
	Overall		**25.3**	**C**	**1,608**	**F**	**Fail**	**28.0**	**C**	**1,416**	**D**	**Pass**	**25.9**	**C**	**1,617**	**F**	**Fail**	**29.9**	**C**	**1,488**	**E**	**Pass**

Table 6-6: Comparison of No-build and Build with Mitigation Condition Intersection AM and PM Peak Hour Operations Analysis (continued)

#	Intersection and Approach	Lane Group	No-build Condition									Build with Mitigation Condition									
			AM Peak Hour					PM Peak Hour				AM Peak Hour					PM Peak Hour				
			HCM 2000		CLV			HCM 2000		CLV			HCM 2000		CLV			HCM 2000		CLV		
			Delay (sec/ veh)	LOS	Critical Lane Volume	LOS	Check	Delay (sec/ veh)	LOS	Critical Lane Volume	LOS	Check	Delay (sec/ veh)	LOS	Critical Lane Volume	LOS	Check	Delay (sec/ veh)	LOS	Critical Lane Volume	LOS	Check
4	**Landover Road & Kent Village Drive (TWSC)**																				
	EB (Landover Rd)	TR	-	-				-	-				-	-				-	-			
	EB Overall (Landover Rd)		**-**	**-**				**-**	**-**				**-**	**-**				**-**	**-**			
	WB (Landover Rd)	T	-	-				-	-				-	-				-	-			
	WB Overall (Landover Rd)		**-**	**-**				**-**	**-**				**-**	**-**				**-**	**-**			
	NB (Kent Village Dr)	R	9.8	A				12.0	B				10.5	B				12.1	B			
	NB Overall (Kent Village Dr)		**9.8**	**A**				**12.0**	**B**				**10.5**	**B**				**12.1**	**B**			
	Overall		**0.1**	**-**	**N/A**	**N/A**	**Pass**	**0.2**	**-**	**N/A**	**N/A**	**Pass**	**0.1**	**-**	**N/A**	**N/A**	**Pass**	**0.1**	**-**	**N/A**	**N/A**	**Pass**
5	**Landover Road & Dodge Park Road (Signalized)**																				
	EB (Landover Rd)	L	74.2	E				74.8	E				71.3	E				71.4	E			
	EB (Landover Rd)	T	1.7	A				2.1	A				2.0	A				2.7	A			
	EB Overall (Landover Rd)		**6.5**	**A**				**8.3**	**A**				**5.8**	**A**				**8.5**	**A**			
	WB (Landover Rd)	TR	2.6	A				8.5	A				2.7	A				9.1	A			
	WB Overall (Landover Rd)		**2.6**	**A**				**8.5**	**A**				**2.7**	**A**				**9.1**	**A**			
	SB (Dodge Park Rd)	L	68.3	E				67.3	E				68.3	E				67.3	E			
	SB (Dodge Park Rd)	R	62.8	E				61.1	E				62.8	E				61.1	E			
	SB Overall (Dodge Park Rd)		**64.7**	**E**				**63.4**	**E**				**64.7**	**E**				**63.4**	**E**			
	Overall		**6.9**	**A**	**1,167**	**C**	**Pass**	**11.2**	**B**	**1,040**	**B**	**Pass**	**6.6**	**A**	**1,176**	**C**	**Pass**	**11.4**	**B**	**1,149**	**B**	**Pass**
6	**Landover Road & Fire House Road (Signalized)**																				
	EB (Landover Rd)	L	30.0	C				28.7	C				29.7	C				43.9	D			
	EB (Landover Rd)	TR	5.8	A				8.8	A				6.6	A				9.8	A			
	EB Overall (Landover Rd)		**6.4**	**A**				**9.4**	**A**				**7.1**	**A**				**10.8**	**B**			
	WB (Landover Rd)	L	2.7	A				29.2	C				28.8	C				29.5	C			
	WB (Landover Rd)	TR	5.3	A				17.0	B				4.0	A				20.2	C			
	WB Overall (Landover Rd)		**5.3**	**A**				**17.4**	**B**				**4.3**	**A**				**20.4**	**C**			
	NB (Fire House Rd)	LTR	65.3	E				53.2	D				65.3	E				53.2	D			
	NB Overall (Fire House Rd)		**65.3**	**E**				**53.2**	**D**				**65.3**	**E**				**53.2**	**D**			
	SB (Fire House Rd)	LTR	63.4	E				63.3	E				63.4	E				63.3	E			
	SB Overall (Fire House Rd)		**63.4**	**E**				**63.3**	**E**				**63.4**	**E**				**63.3**	**E**			
	Overall		**8.2**	**A**	**1,186**	**C**	**Pass**	**15.3**	**B**	**1,295**	**C**	**Pass**	**7.9**	**A**	**1,196**	**C**	**Pass**	**17.4**	**B**	**1,301**	**D**	**Pass**

Table 6-6: Comparison of No-build and Build with Mitigation Condition Intersection AM and PM Peak Hour Operations Analysis (continued)

#	Intersection and Approach	Lane Group	No-build Condition									Build with Mitigation Condition								
			AM Peak Hour					PM Peak Hour				AM Peak Hour					PM Peak Hour			
			HCM 2000		CLV			HCM 2000		CLV			HCM 2000		CLV			HCM 2000		CLV	
			Delay (sec/ veh)	LOS	Critical Lane Volume	LOS	Check	Delay (sec/ veh)	LOS	Critical Lane Volume	LOS	Check	Delay (sec/ veh)	LOS	Critical Lane Volume	LOS	Check	Delay (sec/ veh)	LOS	Critical Lane Volume	LOS	Check
7	**Landover Road & Kenmoor Drive (Signalized)**																				
	EB (Landover Rd)	L	28.5	C				5.3	A				39.4	D				12.0	B			
	EB (Landover Rd)	TR	3.9	A				3.6	A				6.3	A				3.6	A			
	EB Overall (Landover Rd)		**4.5**	**A**				**3.6**	**A**				**7.0**	**A**				**3.8**	**A**			
	WB (Landover Rd)	L	8.2	A				6.8	A				9.7	A				7.5	A			
	WB (Landover Rd)	TR	10.4	B				1.9	A				10.4	B				3.4	A			
	WB Overall (Landover Rd)		**10.4**	**B**				**2.0**	**A**				**10.4**	**B**				**3.4**	**A**			
	NB (Kenmoor Dr)	LTR	66.6	E				83.0	F				66.6	E				83.0	F			
	NB Overall (Kenmoor Dr)		**66.6**	**E**				**83.0**	**F**				**66.6**	**E**				**83.0**	**F**			
	SB (Kenmoor Dr)	LT	68.4	E				86.4	F				68.4	E				86.4	F			
	SB (Kenmoor Dr)	R	66.7	E				79.9	E				66.7	E				79.9	E			
	SB Overall (Kenmoor Dr)		**67.3**	**E**				**82.5**	**F**				**67.3**	**E**				**82.5**	**F**			
	Overall		**8.5**	**A**	**956**	**A**	**Pass**	**5.1**	**A**	**977**	**A**	**Pass**	**9.4**	**A**	**966**	**A**	**Pass**	**5.6**	**A**	**983**	**A**	**Pass**
8	**Landover Road & Barlowe Road (Signalized)**																				
	EB (Landover Rd)	TR	3.7	A				7.9	A				2.9	A				8.0	A			
	EB Overall (Landover Rd)		**3.7**	**A**				**7.9**	**A**				**2.9**	**A**				**8.0**	**A**			
	WB (Landover Rd)	L	45.3	D				84.5	F				66.2	E				71.9	E			
	WB (Landover Rd)	T	1.0	A				0.4	A				1.0	A				1.8	A			
	WB Overall (Landover Rd)		**4.3**	**A**				**5.7**	**A**				**5.8**	**A**				**5.6**	**A**			
	NB (Barlowe Rd)	L	66.5	E				82.0	F				66.5	E				82.0	F			
	NB (Barlowe Rd)	R	61.9	E				78.5	E				61.9	E				78.5	E			
	NB Overall (Barlowe Rd)		**63.4**	**E**				**79.3**	**E**				**63.4**	**E**				**79.3**	**E**			
	Overall		**7.1**	**A**	**931**	**A**	**Pass**	**10.1**	**B**	**1,072**	**B**	**Pass**	**7.3**	**A**	**1,004**	**B**	**Pass**	**9.8**	**A**	**1,079**	**B**	**Pass**

Table 6-6: Comparison of No-build and Build with Mitigation Condition Intersection AM and PM Peak Hour Operations Analysis (continued)

#	Intersection and Approach	Lane Group	No-build Condition									Build with Mitigation Condition									
			AM Peak Hour					PM Peak Hour				AM Peak Hour					PM Peak Hour				
			HCM 2000		CLV			HCM 2000		CLV			HCM 2000		CLV			HCM 2000		CLV		
			Delay (sec/ veh)	LOS	Critical Lane Volume	LOS	Check	Delay (sec/ veh)	LOS	Critical Lane Volume	LOS	Check	Delay (sec/ veh)	LOS	Critical Lane Volume	LOS	Check	Delay (sec/ veh)	LOS	Critical Lane Volume	LOS	Check
9	**Landover Road & Brightseat Road (Signalized)**																				
	EB (Landover Rd)	L	60.7	E				93.5	F				84.6	F				101.0	F			
	EB (Landover Rd)	T	35.7	D				56.0	E				28.8	C				56.0	E			
	EB (Landover Rd)	R	36.8	D				16.7	B				3.3	A				25.3	C			
	EB Overall (Landover Rd)		**36.9**	**D**				**49.2**	**D**				**37.1**	**D**				**51.6**	**D**			
	WB (Landover Rd)	L	71.0	E				106.7	F				**56.2**	**E**				82.7	F			
	WB (Landover Rd)	T	27.5	C				28.1	C				58.1	E				37.2	D			
	WB (Landover Rd)	R	0.1	A				0.3	A				28.1	C				16.2	B			
	WB Overall (Landover Rd)		**32.4**	**C**				**44.4**	**D**				**46.4**	**D**				**45.7**	**D**			
	NB (Brightseat Rd)	L	54.5	D				73.4	E				50.7	D				63.5	E			
	NB (Brightseat Rd)	TR/T	43.7	D				90.5	F				60.1	E				63.8	E			
	NB (Brightseat Rd)	R	31.1	C				47.4	D				33.5	C				56.7	E			
	NB Overall (Brightseat Rd)		**45.0**	**D**				**73.6**	**E**				**45.1**	**D**				**59.1**	**E**			
	SB (Brightseat Rd)	L	64.6	E				92.8	F				52.3	D				72.1	E			
	SB (Brightseat Rd)	LT/TR	61.8	E				81.8	F				64.7	E				76.1	E			
	SB (Brightseat Rd)	R	**55.2**	**E**				64.3	E				43.5	D				61.5	E			
	SB Overall (Brightseat Rd)		**61.4**	**E**				**82.3**	**F**				**54.7**	**D**				**71.6**	**E**			
	Overall		**38.2**	**D**	**1,220**	**C**	**Pass**	**55.1**	**E**	**1,686**	**F**	**Fail**	**44.4**	**D**	**1,426**	**D**	**Pass**	**54.3**	**D**	**1,533**	**E**	**Pass**
10	**Landover Road & I-95/I-495 Southbound On-Ramp (Signalized)**																				
	EB (Landover Rd)	T	16.2	B				67.5	E				4.9	A				35.7	D			
	EB (Landover Rd)	R	0.8	A				0.9	A				1.0	A				1.0	A			
	EB Overall (Landover Rd)		**11.0**	**B**				**46.6**	**D**				**3.6**	**A**				**26.4**	**C**			
	WB (Landover Rd)	L	18.1	B				92.4	F				17.6	B				80.0	E			
	WB (Landover Rd)	T	0.1	A				0.1	A				0.2	A				0.2	A			
	WB Overall (Landover Rd)		**3.2**	**A**				**21.4**	**C**				**2.5**	**A**				**18.5**	**B**			
	Overall		**6.5**	**A**	**1,181**	**C**	**Pass**	**27.7**	**C**	**1,832**	**F**	**Fail**	**3.5**	**A**	**965**	**A**	**Pass**	**19.2**	**B**	**1,666**	**F**	**Fail**
11	**Landover Road & I-95/I-495 Northbound Off-Ramp (Signalized)**																				
	EB (Landover Rd)	L	193.8	F				116.0	F				126.6	F				89.0	F			
	EB (Landover Rd)	T	12.6	B				12.9	B				15.4	B				10.5	B			
	EB (Landover Rd)	R	0.1	A				**0.0**	**A**				0.1	A				4.9	A			
	EB Overall (Landover Rd)		**15.8**	**B**				13.9	B				**16.8**	**B**				**10.8**	**B**			
	WB (Landover Rd)	T	48.3	D				100.0	F				13.4	B				20.6	C			
	WB Overall (Landover Rd)		**48.3**	**D**				**100.0**	**F**				**13.4**	**B**				**20.6**	**C**			
	NB (I-95/I-495 NB Off-Ramp)	L	86.0	F				160.6	F				63.5	E				75.6	E			
	NB (I-95/I-495 NB Off-Ramp)	R	154.6	F				162.5	F				50.7	D				0.5	A			
	NB Overall (I-95/I-495 NB Off-Ramp)		**112.3**	**F**				**161.3**	**F**				**60.7**	**E**				**50.7**	**D**			
	Overall		**45.6**	**D**	**1,666**	**F**	**Fail**	**72.4**	**E**	**1,863**	**F**	**Fail**	**27.9**	**C**	**1,462**	**E**	**Pass**	**21.1**	**C**	**1,350**	**D**	**Pass**

Table 6-6: Comparison of No-build and Build with Mitigation Condition Intersection AM and PM Peak Hour Operations Analysis (continued)

#	Intersection and Approach	Lane Group	No-build Condition									Build with Mitigation Condition									
			AM Peak Hour					PM Peak Hour				AM Peak Hour					PM Peak Hour				
			HCM 2000		CLV			HCM 2000		CLV			HCM 2000		CLV			HCM 2000		CLV		
			Delay (sec/ veh)	LOS	Critical Lane Volume	LOS	Check	Delay (sec/ veh)	LOS	Critical Lane Volume	LOS	Check	Delay (sec/ veh)	LOS	Critical Lane Volume	LOS	Check	Delay (sec/ veh)	LOS	Critical Lane Volume	LOS	Check
12	**Landover Road & St Josephs Drive/McCormick Drive (Signalized)**																				
	EB (Landover Rd)	L	109.2	F				138.1	F				108.2	F				131.5	F			
	EB (Landover Rd)	T	21.3	C				39.6	D				29.2	C				37.6	D			
	EB (Landover Rd)	R	0.8	A				0.1	A				0.8	A				0.2	A			
	EB Overall (Landover Rd)		**45.8**	**D**				**70.8**	**E**				**49.1**	**D**				**65.0**	**E**			
	WB (Landover Rd)	L	80.9	F				129.9	F				82.0	F				93.5	F			
	WB (Landover Rd)	T	57.1	E				75.1	E				61.2	E				87.7	F			
	WB (Landover Rd)	R	13.9	B				219.3	F				10.1	B				71.7	E			
	WB Overall (Landover Rd)		**54.0**	**D**				**102.7**	**F**				**54.1**	**D**				**84.8**	**F**			
	NB (McCormick Dr)	L	61.3	E				151.1	F				61.3	E				151.1	F			
	NB (McCormick Dr)	LT	121.4	F				163.9	F				121.4	F				163.9	F			
	NB (McCormick Dr)	R	0.0	A				0.2	A				0.0	A				0.2	A			
	NB Overall (McCormick Dr)		**84.7**	**F**				**122.2**	**F**				**84.7**	**F**				**122.2**	**F**			
	SB (St Josephs Dr)	L	60.2	E				65.8	E				60.2	E				64.5	E			
	SB (St Josephs Dr)	LT	111.3	F				69.3	E				111.3	F				67.5	E			
	SB (St Josephs Dr)	R	43.9	D				108.1	F				43.6	D				99.1	F			
	SB Overall (St Josephs Dr)		**57.9**	**E**				**93.7**	**F**				**57.8**	**E**				**87.1**	**F**			
	Overall		**52.3**	**D**	**1,546**	**E**	**Pass**	**89.9**	**F**	**1,921**	**F**	**Fail**	**53.7**	**D**	**1,559**	**E**	**Pass**	**81.2**	**F**	**1,900**	**F**	**Fail**
13	**Landover Road & Lottsford Road (Signalized)**																				
	EB (Landover Rd)	L	87.2	F				97.0	F				82.6	F				60.9	E			
	EB (Landover Rd)	T	49.8	D				62.0	E				40.7	D				47.3	D			
	EB (Landover Rd)	R	0.1	A				0.2	A				0.1	A				0.2	A			
	EB Overall (Landover Rd)		**51.5**	**D**				**63.1**	**E**				**44.1**	**D**				**45.3**	**D**			
	WB (Landover Rd)	L	83.9	F				142.6	F				79.6	E				139.4	F			
	WB (Landover Rd)	T	35.2	D				54.0	D				29.0	C				42.7	D			
	WB (Landover Rd)	R	16.0	B				46.3	D				8.6	A				42.1	D			
	WB Overall (Landover Rd)		**34.3**	**C**				**53.8**	**D**				**28.1**	**C**				**44.7**	**D**			
	NB (Lottsford Rd)	L	59.4	E				56.8	E				60.0	E				61.0	E			
	NB (Lottsford Rd)	LT/T	74.1	E				93.7	F				67.6	E				89.8	F			
	NB (Lottsford Rd)	R	0.0	A				0.1	A				0.0	A				0.1	A			
	NB Overall (Lottsford Rd)		**66.0**	**E**				**73.6**	**E**				**61.8**	**E**				**71.3**	**E**			
	SB (Lottsford Rd)	L	82.2	F				121.5	F				58.2	E				89.8	F			
	SB (Lottsford Rd)	LT	71.0	E				101.7	F				78.3	E				102.1	F			
	SB (Lottsford Rd)	R	2.7	A				0.4	A				2.7	A				0.4	A			
	SB Overall (Lottsford Rd)		**39.2**	**D**				**71.0**	**E**				**36.9**	**D**				**63.2**	**E**			
	Overall		**42.2**	**D**	**1,507**	**E**	**Pass**	**63.5**	**E**	**1,531**	**E**	**Fail**	**36.8**	**D**	**1,348**	**D**	**Pass**	**52.1**	**D**	**1,407**	**D**	**Pass**

Table 6-6: Comparison of No-build and Build with Mitigation Condition Intersection AM and PM Peak Hour Operations Analysis (continued)

#	Intersection and Approach	Lane Group	No-build Condition									Build with Mitigation Condition									
			AM Peak Hour					PM Peak Hour				AM Peak Hour					PM Peak Hour				
			HCM 2000		CLV			HCM 2000		CLV			HCM 2000		CLV			HCM 2000		CLV		
			Delay (sec/ veh)	LOS	Critical Lane Volume	LOS	Check	Delay (sec/ veh)	LOS	Critical Lane Volume	LOS	Check	Delay (sec/ veh)	LOS	Critical Lane Volume	LOS	Check	Delay (sec/ veh)	LOS	Critical Lane Volume	LOS	Check
14	**Landover Road & Technology Way (Signalized)**																				
	EB (Technology Way)	L	75.3	E				88.1	F				75.3	E				88.1	F			
	EB (Technology Way)	R	66.4	E				57.5	E				66.4	E				57.6	E			
	EB Overall (Technology Way)		**72.3**	**E**				**77.1**	**E**				**72.3**	**E**				**77.1**	**E**			
	NB (Landover Rd)	L	4.7	A				56.7	E				6.2	A				63.1	E			
	NB (Landover Rd)	T	1.3	A				10.6	B				2.1	A				11.1	B			
	NB Overall (Landover Rd)		**1.5**	**A**				**12.6**	**B**				**2.3**	**A**				**13.3**	**B**			
	SB (Landover Rd)	T	1.3	A				6.6	A				7.7	A				12.0	B			
	SB (Landover Rd)	R	1.0	A				1.7	A				21.8	C				2.7	A			
	SB Overall (Landover Rd)		**1.3**	**A**				**6.3**	**A**				**10.3**	**B**				**11.5**	**B**			
	Overall		**2.8**	**A**	**1,154**	**C**	**Pass**	**17.0**	**B**	**1,291**	**C**	**Pass**	**6.2**	**A**	**1,245**	**C**	**Pass**	**19.5**	**B**	**1,377**	**D**	**Pass**
15	**Landover Road & Arena Drive/Lake Arbor Way (Signalized)**																				
	EB (Landover Rd)	L	59.6	E				90.9	F				62.2	E				95.7	F			
	EB (Landover Rd)	T	22.2	C				16.6	B				12.9	B				14.9	B			
	EB (Landover Rd)	R	0.1	A				0.1	A				0.1	A				0.1	A			
	EB Overall (Landover Rd)		**23.8**	**C**				**23.8**	**C**				**16.4**	**B**				**22.3**	**C**			
	WB (Landover Rd)	L	68.3	E				83.0	F				68.3	E				83.0	F			
	WB (Landover Rd)	T	25.7	C				22.6	C				30.0	C				22.7	C			
	WB (Landover Rd)	R	13.1	B				17.5	B				13.1	B				17.5	B			
	WB Overall (Landover Rd)		**31.0**	**C**				**33.2**	**C**				**34.2**	**C**				**33.2**	**C**			
	NB (Arena Dr)	L	72.0	E				82.1	F				72.0	E				82.1	F			
	NB (Arena Dr)	T	66.9	E				76.8	E				66.9	E				76.8	E			
	NB (Arena Dr)	R	0.2	A				1.2	A				0.2	A				1.2	A			
	NB Overall (Arena Dr)		**41.1**	**D**				**33.6**	**C**				**41.1**	**D**				**33.6**	**C**			
	SB (Lake Arbor Way)	L	55.8	E				74.8	E				55.8	E				74.8	E			
	SB (Lake Arbor Way)	T	61.7	E				80.3	F				61.7	E				80.3	F			
	SB (Lake Arbor Way)	R	65.8	E				73.0	E				65.8	E				73.1	E			
	SB Overall (Lake Arbor Way)		**62.8**	**E**				**76.6**	**E**				**62.8**	**E**				**76.6**	**E**			
	Overall		**34.2**	**C**	**1,161**	**C**	**Pass**	**33.3**	**C**	**1,166**	**C**	**Pass**	**33.9**	**C**	**1,252**	**C**	**Pass**	**32.3**	**C**	**1,252**	**C**	**Pass**

Table 6-6: Comparison of No-build and Build with Mitigation Condition Intersection AM and PM Peak Hour Operations Analysis (continued)

#	Intersection and Approach	Lane Group	No-build Condition									Build with Mitigation Condition									
			AM Peak Hour					PM Peak Hour				AM Peak Hour					PM Peak Hour				
			HCM 2000		CLV			HCM 2000		CLV			HCM 2000		CLV			HCM 2000		CLV		
			Delay (sec/ veh)	LOS	Critical Lane Volume	LOS	Check	Delay (sec/ veh)	LOS	Critical Lane Volume	LOS	Check	Delay (sec/ veh)	LOS	Critical Lane Volume	LOS	Check	Delay (sec/ veh)	LOS	Critical Lane Volume	LOS	Check
16	**Martin Luther King Jr Highway (MLK Jr Hwy) & Ardwick-Ardmore Road (Signalized)**																				
	EB (Ardwick Ardmore Rd)	L	67.4	E				53.0	D			-	-				-	-			
	EB (Ardwick Ardmore Rd)	T/LT	185.6	F				97.4	F			125.2	F				99.2	F			
	EB (Ardwick Ardmore Rd)	R	0.3	A				0.4	A			0.3	A				0.4	A			
	EB Overall (Ardwick Ardmore Rd)		**82.0**	**F**				**51.7**	**D**			**64.5**	**E**				**61.8**	**E**			
	WB (Ardwick Ardmore Rd)	LTR	167.7	F				114.4	F			135.3	F				-	-			
	WB (Ardwick Ardmore Rd)	LT (PM)	-	-				-	-			-	-				105.1	F			
	WB (Ardwick Ardmore Rd)	R (PM)	-	-				-	-			-	-				44.0	D			
	WB Overall (Ardwick Ardmore Rd)		**167.7**	**F**				**114.4**	**F**			**135.3**	**F**				**74.2**	**E**			
	NB (MLK Jr Hwy)	L	161.2	F				82.2	F			138.1	F				82.2	F			
	NB (MLK Jr Hwy)	T	50.6	D				67.5	E			64.5	E				67.5	E			
	NB (MLK Jr Hwy)	R	32.5	C				41.7	D			12.7	B				41.7	D			
	NB Overall (MLK Jr Hwy)		**77.0**	**E**				**66.2**	**E**			**78.5**	**E**				**66.2**	**E**			
	SB (MLK Jr Hwy)	L	125.8	F				117.6	F			113.8	F				122.7	F			
	SB (MLK Jr Hwy)	TR	77.9	E				51.3	D			83.6	F				51.4	D			
	SB Overall (MLK Jr Hwy)		**83.5**	**F**				**67.2**	**E**			**88.3**	**F**				**68.6**	**E**			
	Overall		**95.8**	**F**	**1,906**	**F**	**Fail**	**68.9**	**E**	**1,541**	**E**	**Fail**	**90.2**	**F**	**1,881**	**F**	**Fail**	**67.0**	**E**	**1,505**	**E**	**Fail**
17	**Brightseat Road & Ardwick-Ardmore Road** [a]																				
	EB (Ardwick Ardmore Rd)	LT	0.7	A				0.2	A			17.4	B				22.3	C			
	EB (Ardwick Ardmore Rd)	R	-	-				-	-			15.2	B				14.8	B			
	EB Overall (Ardwick Ardmore Rd)		**0.3**	**-**				**0.1**	**-**			**16.1**	**B**				**18.5**	**B**			
	WB (Ardwick Ardmore Rd)	LTR	4.5	A				5.6	A			19.0	B				15.9	B			
	WB Overall (Ardwick Ardmore Rd)		**2.8**	**-**				**3.6**	**-**			**19.0**	**B**				**15.9**	**B**			
	NB (Brightseat Rd)	LT	514.8	F				121.3	F			22.5	C				25.9	C			
	NB (Brightseat Rd)	R	-	-				-	-			13.0	B				12.9	B			
	NB Overall (Brightseat Rd)		**514.8**	**F**				**121.3**	**F**			19.8	B				22.9	C			
	SB (Brightseat Rd)	LTR	15.7	C				13.2	B			34.1	C				29.2	C			
	SB Overall (Brightseat Rd)		**15.7**	**C**				**13.2**	**B**			**34.1**	**C**				**29.2**	**C**			
	Overall		**176.1**	**-**	**N/A**	**N/A**	**Fail**	**32.9**	**-**	**N/A**	**N/A**	**Pass**	**18.3**	**B**	**902**	**A**	**Pass**	**19.6**	**B**	**921**	**A**	**Pass**

Table 6-6: Comparison of No-build and Build with Mitigation Condition Intersection AM and PM Peak Hour Operations Analysis (continued)

#	Intersection and Approach	Lane Group	No-build Condition									Build with Mitigation Condition									
			AM Peak Hour					PM Peak Hour				AM Peak Hour					PM Peak Hour				
			HCM 2000		CLV			HCM 2000		CLV			HCM 2000		CLV			HCM 2000		CLV		
			Delay (sec/ veh)	LOS	Critical Lane Volume	LOS	Check	Delay (sec/ veh)	LOS	Critical Lane Volume	LOS	Check	Delay (sec/ veh)	LOS	Critical Lane Volume	LOS	Check	Delay (sec/ veh)	LOS	Critical Lane Volume	LOS	Check
18	**Brightseat Road & Glenarden Parkway (Signalized)**																				
	EB (Glenarden Pkwy)	LT	30.4	C				35.8	D				31.9	C				36.2	D			
	EB (Glenarden Pkwy)	R	29.7	C				33.6	C				31.0	C				33.9	C			
	EB Overall (Glenarden Pkwy)		**29.9**	**C**				**34.4**	**C**				**31.3**	**C**				**34.7**	**C**			
	WB (Glenarden Pkwy)	LTR	36.1	D				37.2	D				39.4	D				37.1	D			
	WB Overall (Glenarden Pkwy)		**36.1**	**D**				**37.2**	**D**				**39.4**	**D**				**37.1**	**D**			
	NB (Brightseat Rd)	LTR	3.8	A				3.0	A				3.1	A				3.1	A			
	NB Overall (Brightseat Rd)		**3.8**	**A**				**3.0**	**A**				**3.1**	**A**				**3.1**	**A**			
	SB (Brightseat Rd)	LTR	3.7	A				3.2	A				3.1	A				2.9	A			
	SB Overall (Brightseat Rd)		**3.7**	**A**				**3.2**	**A**				**3.1**	**A**				**2.9**	**A**			
	Overall		**10.0**	**A**	**563**	**A**	**Pass**	**10.3**	**B**	**597**	**A**	**Pass**	**8.5**	**A**	**534**	**A**	**Pass**	**8.8**	**A**	**646**	**A**	**Pass**
19	**Brightseat Road & Evarts Street (Signalized)**																				
	EB (Evarts St)	L	34.8	C				37.1	D				30.1	C				26.7	C			
	EB (Evarts St)	TR	34.9	C				34.4	C				30.1	C				26.3	C			
	EB Overall (Evarts St)		**34.8**	**C**				**36.5**	**D**				**30.1**	**C**				**26.6**	**C**			
	WB (Evarts St)	L	34.8	C				35.8	D				30.1	C				26.4	C			
	WB (Evarts St)	TR	34.9	C				34.4	C				30.3	C				27.2	C			
	WB Overall (Evarts St)		**34.8**	**C**				**35.4**	**D**				**30.3**	**C**				**27.2**	**C**			
	NB (Brightseat Rd)	L	1.3	A				1.4	A				2.0	A				3.1	A			
	NB (Brightseat Rd)	T	1.6	A				1.7	A				2.4	A				3.6	A			
	NB (Brightseat Rd)	R	1.2	A				1.3	A				1.9	A				2.8	A			
	NB Overall (Brightseat Rd)		**1.6**	**A**				**1.7**	**A**				**2.4**	**A**				**3.6**	**A**			
	SB (Brightseat Rd)	L	1.2	A				1.3	A				2.7	A				3.6	A			
	SB (Brightseat Rd)	TR	1.4	A				1.5	A				2.2	A				3.3	A			
	SB Overall (Brightseat Rd)		**1.4**	**A**				**1.5**	**A**				**2.3**	**A**				**3.4**	**A**			
	Overall		**1.7**	**A**	**281**	**A**	**Pass**	**2.1**	**A**	**322**	**A**	**Pass**	**3.9**	**A**	**432**	**A**	**Pass**	**7.5**	**A**	**677**	**A**	**Pass**

Table 6-6: Comparison of No-build and Build with Mitigation Condition Intersection AM and PM Peak Hour Operations Analysis (continued)

#	Intersection and Approach	Lane Group	No-build Condition									Build with Mitigation Condition									
			AM Peak Hour					PM Peak Hour				AM Peak Hour					PM Peak Hour				
			HCM 2000		CLV			HCM 2000		CLV			HCM 2000		CLV			HCM 2000		CLV		
			Delay (sec/ veh)	LOS	Critical Lane Volume	LOS	Check	Delay (sec/ veh)	LOS	Critical Lane Volume	LOS	Check	Delay (sec/ veh)	LOS	Critical Lane Volume	LOS	Check	Delay (sec/ veh)	LOS	Critical Lane Volume	LOS	Check
20	**Brightseat Road & Entrance to Old Landover Mall (Ent to OLM)/Maple Ridge Apartments Access Road (MRA Access Rd)** [a]																				
	EB (MRA Access Rd)	LTR	12.0	B				14.0	B				16.0	B				20.3	C			
	EB (MRA Access Rd)	R	-	-				-	-				15.9	B				20.2	C			
	EB Overall (MRA Access Rd)		**12.0**	**B**				**14.0**	**B**				**15.9**	**B**				**20.2**	**C**			
	WB (Ent to OLM)	LT	17.0	C				22.8	C				-	-				-	-			
	WB (Ent to OLM)	R	0.0	A				0.0	A				-	-				-	-			
	WB Overall (Ent to OLM)		**17.0**	**C**				**22.8**	**C**				**-**	**-**				**-**	**-**			
	NB (Brightseat Rd)	L	-	-				-	-				29.6	C				0.5	A			
	NB (Brightseat Rd)	LTR / TR	0.7	A				0.6	A				0.1	A				8.0	A			
	NB (Brightseat Rd)	R	-	-				-	-				0.5	A				8.0	A			
	NB Overall (Brightseat Rd)		**0.2**	**-**				**0.2**	**-**				**0.4**	**A**				**5.6**	**A**			
	SB (Brightseat Rd)	L	8.3	A				8.9	A				-	-				-	-			
	SB (Brightseat Rd)	TR	-	-				-	-				10.0	A				8.0	A			
	SB Overall (Brightseat Rd)		**0.0**	**-**				**0.0**	**-**				**10.0**	**A**				**8.0**	**A**			
	Overall		**0.8**	**-**	**N/A**	**N/A**	**Pass**	**0.7**	**-**	**N/A**	**N/A**	**Pass**	**2.7**	**A**	**300**	**A**	**Pass**	**5.6**	**A**	**386**	**A**	**Pass**
21	**Brightseat Road/Redskins Road & Sheriff Road/Brightseat Road (Signalized)**																				
	EB (Sheriff Rd)	L	64.4	E				33.9	C				67.9	E				33.6	C			
	EB (Sheriff Rd)	T	42.0	D				39.5	D				42.9	D				38.3	D			
	EB (Sheriff Rd)	R	39.6	D				34.3	C				40.5	D				33.4	C			
	EB Overall (Sheriff Rd)		**53.1**	**D**				**36.1**	**D**				**56.6**	**E**				**35.3**	**D**			
	WB (Brightseat Rd)	L	50.0	D				45.2	D				52.4	D				44.3	D			
	WB (Brightseat Rd)	T	58.5	E				57.2	E				61.5	E				59.9	E			
	WB (Brightseat Rd)	R	51.8	D				48.0	D				0.1	A				0.7	A			
	WB Overall (Brightseat Rd)		**55.3**	**E**				**52.2**	**D**				**32.0**	**C**				**19.4**	**B**			
	NB (Redskins Rd)	L	13.0	B				16.9	B				13.6	B				17.9	B			
	NB (Redskins Rd)	TR	18.1	B				22.6	C				19.4	B				24.4	C			
	NB (Redskins Rd)	R	-	-				-	-				17.8	B				22.5	C			
	NB Overall (Redskins Rd)		**17.0**	**B**				**21.4**	**C**				**18.1**	**B**				**23.0**	**C**			
	SB (Brightseat Rd)	L	65.8	E				18.6	B				68.8	E				19.7	B			
	SB (Brightseat Rd)	T	18.2	B				24.2	C				19.0	B				25.4	C			
	SB (Brightseat Rd)	R	20.3	C				24.7	C				21.2	C				25.9	C			
	SB Overall (Brightseat Rd)		**27.2**	**C**				**23.2**	**C**				**28.3**	**C**				**24.5**	**C**			
	Overall		**36.4**	**D**	**413**	**A**	**Pass**	**33.0**	**C**	**596**	**A**	**Pass**	**34.1**	**C**	**477**	**A**	**Pass**	**25.4**	**C**	**663**	**A**	**Pass**

Table 6-6: Comparison of No-build and Build with Mitigation Condition Intersection AM and PM Peak Hour Operations Analysis (continued)

#	Intersection and Approach	Lane Group	No-build Condition									Build with Mitigation Condition									
			AM Peak Hour					PM Peak Hour				AM Peak Hour					PM Peak Hour				
			HCM 2000		CLV			HCM 2000		CLV			HCM 2000		CLV			HCM 2000		CLV		
			Delay (sec/ veh)	LOS	Critical Lane Volume	LOS	Check	Delay (sec/ veh)	LOS	Critical Lane Volume	LOS	Check	Delay (sec/ veh)	LOS	Critical Lane Volume	LOS	Check	Delay (sec/ veh)	LOS	Critical Lane Volume	LOS	Check
22	**Brightseat Road & Arena Drive (Signalized)**																				
	EB (Arena Dr)	LTR	21.8	C				17.3	B				20.9	C				21.2	C			
	EB Overall (Arena Dr)		**21.8**	**C**				**17.3**	**B**				**20.9**	**C**				**21.2**	**C**			
	WB (Arena Dr)	LTR/LT	24.9	C				22.5	C				26.3	C				33.1	C			
	WB (Arena Dr)	R	-	-				-	-				20.4	C				21.0	C			
	WB Overall (Arena Dr)		**24.9**	**C**				**22.5**	**C**				**23.9**	**C**				**29.3**	**C**			
	NB (Brightseat Rd)	L	20.2	C				27.0	C				21.7	C				27.7	C			
	NB (Brightseat Rd)	TR/T	23.9	C				33.1	C				29.2	C				36.7	D			
	NB (Brightseat Rd)	R	-	-				-	-				23.8	C				34.0	C			
	NB Overall (Redskins Rd)		**23.6**	**C**				**32.6**	**C**				**26.3**	**C**				**34.6**	**C**			
	SB (Brightseat Rd)	L	10.7	B				24.9	C				11.0	B				27.4	C			
	SB (Brightseat Rd)	TR	13.2	B				21.3	C				16.2	B				17.7	B			
	SB Overall (Brightseat Rd)		**11.9**	**B**				**23.4**	**C**				**13.5**	**B**				**25.8**	**C**			
	Overall		**21.3**	**C**	**1,272**	**C**	**Pass**	**24.2**	**C**	**1,589**	**E**	**Pass**	**21.6**	**C**	**868**	**A**	**Pass**	**27.8**	**C**	**1,522**	**E**	**Pass**
23	**Arena Drive & I-95/I-495 Southbound Ramps** [b c]																				
	EB (Arena Dr)	T	17.9	B				30.9	C				11.5	B				28.2	D			
	EB (Arena Dr)	R/TR	14.8	B				23.3	C				12.3	B				32.4	D			
	EB Overall (Arena Dr)		**17.4**	**B**				**29.7**	**C**				**10.1**	**B**				**14.4**	**B**			
	WB (Arena Dr)	L/LT	2.5	A				21.7	C				7.1	A				9.5	A			
	WB (Arena Dr)	T	2.1	A				2.9	A				7.0	A				10.9	B			
	WB Overall (Arena Dr)		**2.2**	**A**				**9.6**	**A**				**7.4**	**A**				**10.3**	**B**			
	SB (I-95/I-495 SB Off-Ramp)	L	62.3	E				64.5	E				9.9	A				19.8	C			
	SB (I-95/I-495 SB Off-Ramp)	LTR/LT	62.5	E				66.0	E				9.8	A				20.1	C			
	SB Overall (I-95/I-495 SB Off-Ramp)		**62.4**	**E**				**65.2**	**E**				**6.0**	**A**				**13.7**	**B**			
	Overall		**22.7**	**C**	**880**	**A**	**Pass**	**29.8**	**C**	**1,344**	**D**	**Pass**	**8.1**	**A**	**N/A**	**N/A**	**Pass**	**12.9**	**B**	**N/A**	**N/A**	**Pass**
24	**Arena Drive & I-95/I-495 Northbound Ramps** [b c]																				
	EB (Arena Dr)	L/LT	26.3	C				66.7	E				7.6	A				10.0	A			
	EB (Arena Dr)	T	6.1	A				3.7	A				8.4	A				11.7	A			
	EB Overall (Arena Dr)		**11.9**	**B**				**13.9**	**B**				**8.0**	**A**				**10.9**	**B**			
	WB (Arena Dr)	T	-	-				-	-				3.5	B				22.5	C			
	WB (Arena Dr)	TR	26.6	C				38.2	D				4.3	B				30.0	D			
	WB Overall (Arena Dr)		**26.6**	**C**				**38.2**	**D**				**14.2**	**B**				**26.5**	**D**			
	NB (I-95/I-495 NB Off-Ramp)	L	39.9	D				39.5	D				9.0	A				12.6	B			
	NB (I-95/I-495 NB Off-Ramp)	LTR	41.0	D				45.3	D				8.7	A				12.1	B			
	NB Overall (I-95/I-495 NB Off-Ramp)		**40.6**	**D**				**43.4**	**D**				**15.3**	**C**				**32.6**	**D**			
	Overall		**23.9**	**C**	**1,203**	**C**	**Pass**	**28.8**	**C**	**1,405**	**D**	**Pass**	**12.0**	**B**	**N/A**	**N/A**	**Pass**	**20.9**	**C**	**N/A**	**N/A**	**Pass**

Table 6-6: Comparison of No-build and Build with Mitigation Condition Intersection AM and PM Peak Hour Operations Analysis (continued)

#	Intersection and Approach	Lane Group	No-build Condition										Build with Mitigation Condition									
			AM Peak Hour					PM Peak Hour					AM Peak Hour					PM Peak Hour				
			HCM 2000		CLV			HCM 2000		CLV			HCM 2000		CLV			HCM 2000		CLV		
			Delay (sec/ veh)	LOS	Critical Lane Volume	LOS	Check	Delay (sec/ veh)	LOS	Critical Lane Volume	LOS	Check	Delay (sec/ veh)	LOS	Critical Lane Volume	LOS	Check	Delay (sec/ veh)	LOS	Critical Lane Volume	LOS	Check
25	**Brightseat Road & Driveway/Site West Exit (Signalized)** [d]																					
	EB (Driveway)	LTR	-	-				-	-				20.6	C				23.5	C			
	EB Overall (Driveway)		**-**	**-**				**-**	**-**				**20.6**	**C**				**23.5**	**C**			
	WB (FBI Exit)	L	-	-				-	-				17.0	B				16.3	B			
	WB (FBI Exit)	R	-	-									-	-				-	-			
	WB Overall (Site Exit)		**-**	**-**				**-**	**-**				**17.0**	**B**				**16.3**	**B**			
	NB (Brightseat Rd)	T	-	-				-	-				9.8	A				15.2	B			
	NB Overall (Brightseat Rd)		**-**	**-**				**-**	**-**				**9.8**	**A**				**15.2**	**B**			
	SB (Brightseat Rd)	T	-	-				-	-				9.6	A				15.2	B			
	SB Overall (Brightseat Rd)		**-**	**-**				**-**	**-**				**9.6**	**A**				**15.2**	**B**			
	Overall		**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**10.6**	**B**	**239**	**A**	**Pass**	**15.6**	**B**	**441**	**A**	**Pass**
26	**Evarts Street & Site North Driveway (TWSC)** [d]																					
	EB (Evarts St)	TR	-	-				-	-				0.0	-				0.0	-			
	EB Overall (Evarts St)		**-**	**-**				**-**	**-**				**0.0**	**-**				**0.0**	**-**			
	WB (Evarts St)	LT	-	-				-	-				7.8	A				3.2	A			
	WB Overall (Evarts St)		**-**	**-**				**-**	**-**				**7.1**	**-**				**1.5**	**-**			
	NB (FBI Driveway)	L	-	-				-	-				17.9	C				10.6	B			
	NB (FBI Driveway)	R	-	-				-	-				8.6	A				8.7	A			
	NB Overall (FBI Driveway)		**-**	**-**				**-**	**-**				**15.7**	**C**				**10.2**	**B**			
	Overall		**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**5.8**	**-**	**N/A**	**N/A**	**Pass**	**6.5**	**-**	**N/A**	**N/A**	**Pass**

Table 6-6: Comparison of No-build and Build with Mitigation Condition Intersection AM and PM Peak Hour Operations Analysis (continued)

#	Intersection and Approach	Lane Group	No-build Condition										Build with Mitigation Condition									
			AM Peak Hour					PM Peak Hour					AM Peak Hour					PM Peak Hour				
			HCM 2000		CLV			HCM 2000		CLV			HCM 2000		CLV			HCM 2000		CLV		
			Delay (sec/ veh)	LOS	Critical Lane Volume	LOS	Check	Delay (sec/ veh)	LOS	Critical Lane Volume	LOS	Check	Delay (sec/ veh)	LOS	Critical Lane Volume	LOS	Check	Delay (sec/ veh)	LOS	Critical Lane Volume	LOS	Check
27	**Brightseat Road & Site South Exit only PM (Signalized)** [d]																					
	EB (Brightseat Rd)	T	-	-				-	-				0.0	A				14.6	B			
	EB Overall (Brightseat Rd)		**-**	**-**				**-**	**-**				**0.0**	**A**				**14.6**	**B**			
	WB (Brightseat Rd)	T	-	-				-	-				0.0	A				17.1	B			
	WB Overall (Brightseat Rd)		**-**	**-**				**-**	**-**				**0.0**	**A**				**17.1**	**B**			
	SB (FBI Exit only PM)	L	-	-				-	-				-	-				14.7	B			
	SB (FBI Exit only PM)	R	-	-				-	-				-	-				16.1	B			
	SB Overall (FBI Exit only PM)		**-**	**-**				**-**	**-**				**-**	**-**				**15.2**	**B**			
	Overall		**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**0.0**	**A**	**-**	**-**	**Pass**	**15.5**	**B**	**940**	**A**	**Pass**

Notes:

EB = Eastbound, WB = Westbound, NB= Northbound, SB = Southbound

LOS = Level of Service

LTR = left / through / right lanes

LTR/LTR = No-Build/Build with Mitigation

TWSC = Two-way STOP-Controlled unsignalized intersection (TWSC intersections do not have an overall LOS)

Delay is Measured in Seconds Per Vehicle.

Red cells denote intersections or approaches operating at unacceptable conditions.

[a] Intersection would operate as a TWSC under the No-build Condition and signalized under the Build with Mitigation Condition.

[b] Intersection would operate as signalized under the No-build Condition and a roundabout under the Build with Mitigation Condition.

[c] Highway Capacity Software 2010 Roundabout results for the Build with Mitigation Condition.

[d] Intersection would be added as part of the Build with Mitigation Condition

6.6.5 Queuing Analysis

Synchro™ was used to calculate the 50th percentile queue lengths and SimTraffic™ was used to calculate the 95th percentile queue lengths. The SimTraffic simulations have a statistical accuracy of plus or minus 4.5 percent error for the AM and PM peak hour simulations. Based on the Synchro™ and SimTraffic™ analysis, the following signalized intersection approach would experience failing queue lengths in excess of 150 additional feet when compared to the No-build Condition length. The lane group within the approach that would be operating under unacceptable conditions is noted in parenthesis.

- Landover Road and I-95/I-495 Northbound Off-Ramp (Intersection #11)

> ***Note that this queue would occur on the Landover Road mainline and there is ample storage space between this facility and next upstream intersection. The Queue would occur on Eastbound Landover Road (right turns) during the AM peak hour and queue reflects the vehicles waiting to access the I-95/I-495 northbound on-ramp. However, the queue provides over 850 feet of available storage before impacting the I-95/I-495 southbound off-ramp.***

Unsignalized Queuing Analysis Based on the Synchro™ and SimTraffic™ analysis, the following unsignalized intersection approaches would experience failing queue lengths that need mentioning (less than 150 additional feet of the No-build Condition length).

- Brightseat Road and Ardwick-Ardmore Road (Intersection #17)

> ***Note that the queue length would be less than 150 additional feet when compared to the No-build Condition length; however, the queue length for the Ardwick-Ardmore westbound approach would extend to the beginning of the bridge crossing I-95/I-495. It is recommend not to widen the bridge due to a five percent chance that one or two vehicles may be queued onto the bridge.***

Complete Intersection Queuing Analysis

The results of the No-build Condition compared with the Build with Mitigation Condition queuing analysis for both signalized and unsignalized intersections are presented in table 6-7. Note that the percentile values are expressed in feet and a car occupies about 25 linear feet of roadway, including the space between cars.

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Table 6-7: Comparison of No-build and Build with Mitigation Condition Queuing Analysis

#	Intersection & Approach	Lane Group	Turning Bay/Link Length (feet)	No-build Condition				Build with Mitigation Condition			
				AM Peak		PM Peak		AM Peak		PM Peak	
				50th Percentile (feet)	95th Percentile (feet)	50th Percentile (feet)	95th Percentile (feet)	50th Percentile (feet)	95th Percentile (feet)	50th Percentile (feet)	95th Percentile (feet)
1	**Landover Road & Old Landover Road (Signalized)**										
	EB (Landover Rd)	L	1,000	96	181	24	116	96	175	54	132
	EB (Landover Rd)	T	1,689	95	141	334	246	132	173	338	242
	WB (Landover Rd)	TR	440	87	207	91	153	87	217	93	182
	SB (Old Landover Rd)	LR	147	37	140	120	#185	37	134	120	#184
2	**Landover Road & Pinebrook Avenue (Signalized)**										
	EB (Landover Rd)	TR	440	347	180	365	313	477	224	338	306
	WB (Landover Rd)	L	250	7	80	34	103	23	80	34	102
	WB (Landover Rd)	T	881	122	155	65	77	132	155	65	97
	NB (Pinebrook Ave)	L	653	220	280	151	230	220	281	151	229
	NB (Pinebrook Ave)	R	653	0	95	0	112	0	92	0	115
3	**Landover Road & Kent Town Place/75th Avenue (Signalized)**										
	EB (Landover Rd)	L	200	61	141	121	#232	61	154	121	#240
	EB (Landover Rd)	TR	881	139	192	617	458	170	231	624	465
	WB (Landover Rd)	L	250	14	95	78	133	36	134	75	178
	WB (Landover Rd)	TR	555	252	350	183	285	256	402	352	385
	NB (Kent Town Pl)	L	250	139	225	82	137	139	204	82	148
	NB (Kent Town Pl)	TR	511	120	246	103	189	120	200	103	185
	SB (75th Ave)	L	685	244	630	266	452	244	572	266	457
	SB (75th Ave)	TR	685	155	410	133	194	155	316	133	196
4	**Landover Road & Kent Village Drive (TWSC)**										
	EB (Landover Rd)	TR	555	-	2	-	65	-	4	-	67
	WB (Landover Rd)	T	412	-	2	-	-	-	10	-	12
	NB (Kent Village Dr)	R	612	-	75	-	85	-	79	-	92
5	**Road (Signalized)**										
	EB (Landover Rd)	L	275	135	206	260	#306	136	221	260	#312
	EB (Landover Rd)	T	412	72	92	93	270	87	138	116	286
	WB (Landover Rd)	TR	526	52	154	121	181	52	165	139	207
	SB (Dodge Park Rd)	L	529	74	146	97	163	74	143	97	162
	SB (Dodge Park Rd)	R	200	0	158	0	148	0	164	0	156
6	**Landover Road & Fire House Road (Signalized)**										
	EB (Landover Rd)	L	275	7	75	29	114	8	78	52	166
	EB (Landover Rd)	TR	526	185	124	220	360	209	168	249	398
	WB (Landover Rd)	L	300	2	53	14	84	2	59	14	98
	WB (Landover Rd)	TR	887	369	244	394	308	69	202	547	368
	NB (Fire House Rd)	LTR	404	90	162	93	174	90	166	93	174
	SB (Fire House Rd)	LTR	240	82	154	149	217	82	142	149	213

Table 6-7: Comparison of No-build and Build with Mitigation Condition Queuing Analysis (continued)

#	Intersection & Approach	Lane Group	Turning Bay/Link Length (feet)	No-build Condition				Build with Mitigation Condition			
				AM Peak		PM Peak		AM Peak		PM Peak	
				50th Percentile (feet)	95th Percentile (feet)	50th Percentile (feet)	95th Percentile (feet)	50th Percentile (feet)	95th Percentile (feet)	50th Percentile (feet)	95th Percentile (feet)
7	**Landover Road & Kenmoor Drive (Signalized)**										
	EB (Landover Rd)	L	250	5	59	7	76	9	65	7	74
	EB (Landover Rd)	TR	602	93	124	191	205	241	174	194	222
	WB (Landover Rd)	L	250	1	17	1	23	1	20	1	25
	WB (Landover Rd)	TR	1,439	323	273	42	48	214	309	164	119
	NB (Kenmoor Dr)	LTR	259	0	12	29	89	0	14	29	86
	SB (Kenmoor Dr)	LT	191	14	47	41	85	14	44	41	89
	SB (Kenmoor Dr)	R	150	0	53	0	59	0	57	0	71
8	**Landover Road & Barlowe Road (Signalized)**										
	EB (Landover Rd)	TR	1,439	65	163	326	684	53	190	321	432
	WB (Landover Rd)	L	300	89	148	110	178	112	192	109	179
	WB (Landover Rd)	T	540	48	98	3	132	7	85	110	88
	NB (Barlowe Rd)	L	448	77	152	60	169	77	175	60	192
	NB (Barlowe Rd)	R	125	0	#134	0	#153	0	#148	0	#156
9	**Landover Road & Brightseat Road (Signalized)**										
	EB (Landover Rd)	L	600	36	89	59	250	225	578	72	103
	EB (Landover Rd)	T	906	278	361	819	1471	372	379	644	508
	EB (Landover Rd)	R	400	1	84	135	997	0	35	253	333
	WB (Landover Rd)	L	600	215	487	~465	366	210	257	462	355
	WB (Landover Rd)	T	1,775	666	385	473	353	~763	792	514	379
	WB (Landover Rd)	R	1,524	0	-	0	-	835	299	17	28
	NB (Brightseat Rd)	L	376	169	215	200	#258	192	231	178	253
	NB (Brightseat Rd)	TR/T	502	89	177	201	323	112	167	105	339
	NB (Brightseat Rd)	R	451	109	164	239	361	86	120	563	405
	SB (Brightseat Rd)	L	362	136	165	271	#406	112	170	263	314
	SB (Brightseat Rd)	LT/TR	368	136	189	267	331	79	162	191	367
	SB (Brightseat Rd)	R	350	0	16	0	25	0	58	106	336
10	**Landover Road & I-95/I-495 Southbound On-Ramp (Signalized)**										
	EB (Landover Rd)	T	1,775	404	225	~944	#2182	77	220	~582	1091
	EB (Landover Rd)	R	1,775	17	292	40	#2199	151	9	58	1067
	WB (Landover Rd)	L	700	202	211	~584	#812	191	199	~569	642
	WB (Landover Rd)	T	1,170	0	-	0	830	0	13	0	150

Table 6-7: Comparison of No-build and Build with Mitigation Condition Queuing Analysis (continued)

#	Intersection & Approach	Lane Group	Turning Bay/Link Length (feet)	No-build Condition				Build with Mitigation Condition			
				AM Peak		PM Peak		AM Peak		PM Peak	
				50th Percentile (feet)	95th Percentile (feet)	50th Percentile (feet)	95th Percentile (feet)	50th Percentile (feet)	95th Percentile (feet)	50th Percentile (feet)	95th Percentile (feet)
11	**Landover Road & I-95/I-495 Northbound Off-Ramp (Signalized)**										
	EB (Landover Rd)	L	425	~70	154	58	226	64	150	55	125
	EB (Landover Rd)	T	1,170	631	668	764	#1491	344	539	618	#1275
	EB (Landover Rd)	R	250	0	150	0	132	0	#311	42	200
	WB (Landover Rd)	T	282	~1363	#366	~1904	#575	206	#328	644	#396
	NB (I-95/I-495 NB Off-Ramp)	L	567	358	#364	~648	#424	541	427	382	422
	NB (I-95/I-495 NB Off-Ramp)	R	650	~430	#386	~567	#384	323	430	0	293
12	**Landover Road & St Josephs Drive/McCormick Drive (Signalized)**										
	EB (Landover Rd)	L	703	~426	416	~618	413	~435	460	~601	583
	EB (Landover Rd)	T	730	188	260	641	312	253	251	694	628
	EB (Landover Rd)	R	550	0	-	0	-	0	20	0	146
	WB (Landover Rd)	L	250	223	#346	45	#299	223	#345	41	#272
	WB (Landover Rd)	T	1,320	~858	#1655	~690	#1663	~883	#1638	~693	#1598
	WB (Landover Rd)	R	500	5	#736	310	#717	25	#674	373	#709
	NB (McCormick Dr)	L	375	134	79	~398	#427	59	139	~398	#461
	NB (McCormick Dr)	LT	500	187	330	~406	#513	187	326	~406	#531
	NB (McCormick Dr)	R	250	0	134	0	#382	0	140	0	#387
	SB (St Josephs Dr)	L	564	42	123	321	#736	42	127	319	#690
	SB (St Josephs Dr)	LT	829	194	415	337	#1089	194	397	335	#985
	SB (St Josephs Dr)	R	829	336	424	~1146	#1002	333	448	~1102	#1048
13	**Landover Road & Lottsford Road (Signalized)**										
	EB (Landover Rd)	L	700	144	205	443	393	148	216	422	417
	EB (Landover Rd)	T	736	261	314	797	608	236	311	822	696
	EB (Landover Rd)	R	727	0	-	0	128	0	-	0	346
	WB (Landover Rd)	L	500	114	496	57	108	117	491	57	114
	WB (Landover Rd)	T	587	619	#685	374	377	680	#710	364	318
	WB (Landover Rd)	R	500	31	#650	153	114	186	#702	114	-
	NB (Lottsford Rd)	L	500	101	208	184	371	100	179	189	299
	NB (Lottsford Rd)	LT/T	768	215	332	551	651	180	227	473	532
	NB (Lottsford Rd)	R	768	0	-	0	203	0	-	0	329
	SB (Lottsford Rd)	L	350	387	#436	359	#398	222	310	237	332
	SB (Lottsford Rd)	LT/T	721	407	#1061	370	501	341	#1085	280	446
	SB (Lottsford Rd)	R	961	0	#1291	0	268	0	#1383	0	436

Table 6-7: Comparison of No-build and Build with Mitigation Condition Queuing Analysis (continued)

#	Intersection & Approach	Lane Group	Turning Bay/Link Length (feet)	No-build Condition				Build with Mitigation Condition			
				AM Peak		PM Peak		AM Peak		PM Peak	
				50th Percentile (feet)	95th Percentile (feet)	50th Percentile (feet)	95th Percentile (feet)	50th Percentile (feet)	95th Percentile (feet)	50th Percentile (feet)	95th Percentile (feet)
14	**Landover Road & Technology Way (Signalized)**										
	EB (Technology Way)	L	556	57	105	449	487	57	107	449	492
	EB (Technology Way)	R	556	0	46	109	148	0	46	110	179
	NB (Landover Rd)	L	420	2	134	47	132	9	230	47	144
	NB (Landover Rd)	T	1,613	13	233	186	207	65	617	206	217
	SB (Landover Rd)	T	1,234	20	55	243	233	184	152	272	336
	SB (Landover Rd)	R	450	0	82	2	60	55	90	8	76
15	**Landover Road & Arena Drive/Lake Arbor Way (Signalized)**										
	EB (Landover Rd)	L	400	61	93	192	208	54	99	192	221
	EB (Landover Rd)	T	1,613	310	253	237	276	189	192	193	312
	EB (Landover Rd)	R	-	0	-	0	-	0	-	0	-
	WB (Landover Rd)	L	850	182	231	173	219	182	226	173	214
	WB (Landover Rd)	T	1,163	637	396	304	244	785	489	308	255
	WB (Landover Rd)	R	1,163	0	4	0	7	0	2	1	6
	NB (Arena Dr)	L	1,288	76	112	160	184	76	110	160	180
	NB (Arena Dr)	T	2,277	46	74	131	187	46	75	131	191
	NB (Arena Dr)	R	-	0	-	0	-	0	-	0	-
	SB (Lake Arbor Way)	L	300	62	114	79	119	62	112	79	115
	SB (Lake Arbor Way)	T	1,003	173	224	160	195	173	222	160	197
	SB (Lake Arbor Way)	R	1,000	141	233	12	89	141	282	13	61
16	**Martin Luther King Jr Highway (MLK Jr Hwy) & Ardwick-Ardmore Road (Signalized)**										
	EB (Ardwick Ardmore Rd)	L	-	74	#354	196	#370	-	-	-	-
	EB (Ardwick Ardmore Rd)	T	700	~323	#824	467	#754	~189	287	368	505
	EB (Ardwick Ardmore Rd)	R	700	0	#939	0	#944	0	112	0	72
	WB (Ardwick Ardmore Rd)	LTR (AM)	726	~582	561	~287	295	~561	721	-	-
	WB (Ardwick Ardmore Rd)	LT (PM)	-	-	-	-	-	-	-	378	520
	WB (Ardwick Ardmore Rd)	R (PM)	-	-	-	-	-	-	-	129	272
	NB (MLK Jr Hwy)	L	720	~551	#877	269	349	~528	#790	269	346
	NB (MLK Jr Hwy)	T	1,098	568	#1205	577	479	611	937	577	470
	NB (MLK Jr Hwy)	R	1,098	34	345	62	105	23	103	62	118
	SB (MLK Jr Hwy)	L	200	219	#266	252	#261	303	#243	256	#259
	SB (MLK Jr Hwy)	T	1,181	577	#1380	246	424	~591	#1486	246	400
	SB (MLK Jr Hwy)	TR	200	577	#246	246	#234	~591	#234	246	#230

Table 6-7: Comparison of No-build and Build with Mitigation Condition Queuing Analysis (continued)

#	Intersection & Approach	Lane Group	Turning Bay/Link Length (feet)	No-build Condition				Build with Mitigation Condition			
				AM Peak		PM Peak		AM Peak		PM Peak	
				50th Percentile (feet)	95th Percentile (feet)	50th Percentile (feet)	95th Percentile (feet)	50th Percentile (feet)	95th Percentile (feet)	50th Percentile (feet)	95th Percentile (feet)
17	**Brightseat Road & Ardwick-Ardmore Road** [a]										
	EB (Ardwick Ardmore Rd)	LT	731	-	39	-	17	63	197	106	264
	EB (Ardwick Ardmore Rd)	R	731	-	39	-	34	0	317	0	324
	WB (Ardwick Ardmore Rd)	LTR/LT	250	-	105	-	86	71	223	37	192
	WB (Ardwick Ardmore Rd)	TR	716	-	-	-	-	71	242	37	167
	NB (Brightseat Rd)	LT	1,084	-	#1367	-	316	103	283	120	232
	NB (Brightseat Rd)	R	200	-	#229	-	#184	0	153	0	124
	SB (Brightseat Rd)	LTR	240	-	41	-	29	1	41	1	28
18	**Brightseat Road & Glenarden Parkway (Signalized)**										
	EB (Glenarden Pkwy)	LT	471	15	44	36	70	15	41	36	73
	EB (Glenarden Pkwy)	R	471	0	31	0	50	0	32	0	41
	WB (Glenarden Pkwy)	LTR	954	58	140	38	118	49	117	34	94
	NB (Brightseat Rd)	LTR	2,028	40	129	32	118	42	99	48	123
	SB (Brightseat Rd)	LTR	412	28	76	34	96	32	78	32	86
19	**Brightseat Road & Evarts Street (Signalized)**										
	EB (Evarts St)	L	180	0	5	3	20	0	6	3	22
	EB (Evarts St)	TR	1,195	0	14	0	14	0	15	0	14
	WB (Evarts St)	L	882	0	6	2	20	0	6	2	21
	WB (Evarts St)	TR	882	0	15	0	13	0	48	0	92
	NB (Brightseat Rd)	L	220	0	10	0	16	1	17	2	28
	NB (Brightseat Rd)	T	484	0	18	0	26	26	52	30	92
	NB (Brightseat Rd)	R	484	0	-	0	-	0	2	0	3
	SB (Brightseat Rd)	L	120	0	4	0	-	10	64	7	59
	SB (Brightseat Rd)	TR	446	0	19	0	30	16	44	21	74
20	**Brightseat Road & Entrance to Old Landover Mall (Ent to OLM)/Maple Ridge Apartments Access Road (MRA Access Rd)** [a]										
	EB (MRA Access Rd)	LTR/L	190	-	47	-	81	5	34	4	47
	EB (MRA Access Rd)	R	25	-	-	-	-	0	#52	0	#41
	WB (Ent to OLM)	LT	-	-	9	-	34	-	-	-	-
	WB (Ent to OLM)	R	-	-	-	-	-	-	-	-	-
	NB (Brightseat Rd)	L	0	-	-	-	-	3	17	3	19
	NB (Brightseat Rd)	LTR /T	150	-	12	-	6	0	1	0	-
	NB (Brightseat Rd)	TR	0	-	-	-	-	0	13	0	0
	NB (Brightseat Rd)	R	368	-	-	-	-	0	66	0	2
	SB (Brightseat Rd)	L	-	-	0	-	0	-	-	-	-
	SB (Brightseat Rd)	T	0	-	-	-	-	-	-	-	-
	SB (Brightseat Rd)	TR	458	-	4	-	99	28	75	47	172

Table 6-7: Comparison of No-build and Build with Mitigation Condition Queuing Analysis (continued)

#	Intersection & Approach	Lane Group	Turning Bay/Link Length (feet)	No-build Condition				Build with Mitigation Condition			
				AM Peak		PM Peak		AM Peak		PM Peak	
				50th Percentile (feet)	95th Percentile (feet)	50th Percentile (feet)	95th Percentile (feet)	50th Percentile (feet)	95th Percentile (feet)	50th Percentile (feet)	95th Percentile (feet)
21	**Brightseat Road/Redskins Road & Sheriff Road/Brightseat Road (Signalized)**										
	EB (Sheriff Rd)	L	150	89	144	102	#164	114	#184	102	#177
	EB (Sheriff Rd)	T	966	76	227	184	297	79	196	183	346
	EB (Sheriff Rd)	R	-	0	-	0	-	0	-	0	-
	WB (Brightseat Rd)	L	480	1	3	4	15	1	4	4	15
	WB (Brightseat Rd)	T	480	141	193	211	258	148	193	254	330
	WB (Brightseat Rd)	R	300	0	34	0	48	0	-	0	179
	NB (Redskins Rd)	L	250	24	45	30	38	26	45	31	53
	NB (Redskins Rd)	TR/T	622	45	50	52	45	68	70	78	131
	NB (Redskins Rd)	R	-	-	-	-	-	0	-	0	-
	SB (Brightseat Rd)	L	240	43	21	32	35	45	38	34	41
	SB (Brightseat Rd)	T	526	26	4	74	43	27	5	78	53
	SB (Brightseat Rd)	R	-	0	-	0	-	0	-	0	-
22	**Brightseat Road & Arena Drive (Signalized)**										
	EB (Arena Dr)	LTR	505	56	111	47	98	56	98	54	99
	WB (Arena Dr)	LTR/LT	413	71	158	127	191	93	164	175	225
	WB (Arena Dr)	R	413	-	-	-	-	0	74	0	107
	NB (Brightseat Rd)	L	320	7	57	13	52	8	55	11	58
	NB (Brightseat Rd)	TR/T	617	43	151	56	177	94	201	116	229
	NB (Brightseat Rd)	R	617	-	-	-	-	0	82	58	157
	SB (Brightseat Rd)	L	1,465	52	169	112	#214	27	107	229	336
	SB (Brightseat Rd)	TR	2,430	24	96	47	112	55	157	88	150
23	**Arena Drive & I-95/I-495 Southbound Ramps [b]**										
	EB (Arena Dr)	T	413	168	166	317	302	-	97	-	184
	EB (Arena Dr)	TR	413	-	-	-	-	-	78	-	211
	EB (Arena Dr)	R	413	0	55	0	66	-	6	-	178
	WB (Arena Dr)	L/LT	577	9	141	209	#290	-	69	-	256
	WB (Arena Dr)	T	577	17	70	28	195	-	18	-	182
	SB (I-95/I-495 SB Off-Ramp)	L	938	242	251	324	310	-	124	-	239
	SB (I-95/I-495 SB Off-Ramp)	LTR/LT	938	217	263	303	315	-	67	-	231
	SB (I-95/I-495 SB Off-Ramp)	R	-	-	-	-	-	-	12	-	82

Table 6-7: Comparison of No-build and Build with Mitigation Condition Queuing Analysis (continued)

#	Intersection & Approach	Lane Group	Turning Bay/Link Length (feet)	No-build Condition				Build with Mitigation Condition			
				AM Peak		PM Peak		AM Peak		PM Peak	
				50th Percentile (feet)	95th Percentile (feet)	50th Percentile (feet)	95th Percentile (feet)	50th Percentile (feet)	95th Percentile (feet)	50th Percentile (feet)	95th Percentile (feet)
24	**Arena Drive & I-95/I-495 Northbound Ramps [b]**										
	EB (Arena Dr)	L	577	44	147	116	195	-	70	-	69
	EB (Arena Dr)	T	577	47	126	32	104	-	28	-	29
	WB (Arena Dr)	T	836	-	-	-	-	-	105	-	209
	WB (Arena Dr)	TR	836	265	269	552	438	-	54	-	189
	NB (I-95/I-495 NB Off-Ramp)	L	738	121	127	111	148	-	79	-	164
	NB (I-95/I-495 NB Off-Ramp)	LTR	738	60	150	169	122	-	63	-	148
	NB (I-95/I-495 NB Off-Ramp)	R	-	-	-	-	-	-	16	-	60
25	**Brightseat Road & Driveway/Site West Exit (Signalized) [c]**										
	EB (Driveway)	LTR	372	-	-	-	-	0	13	0	14
	WB (FBI Exit)	L	439	-	-	-	-	6	44	53	163
	WB (FBI Exit)	R	-	-	-	-	-	0	-	-	-
	NB (Brightseat Rd)	T	159	-	-	-	-	22	52	35	91
	SB (Brightseat Rd)	T	484	-	-	-	-	19	35	36	119
26	**Evarts Street & Site North Driveway (TWSC) [c]**										
	EB (Evarts St)	TR	882	-	-	-	-	-	11	-	-
	WB (Evarts St)	LT	284	-	-	-	-	-	62	-	11
	NB (FBI Driveway)	L	431	-	-	-	-	-	38	-	79
	NB (FBI Driveway)	R	431	-	-	-	-	-	14	-	43
27	**Brightseat Road & Site South Exit only PM (Signalized) [c]**										
	EB (Brightseat Rd)	T	853	-	-	-	-	0	-	110	254
	WB (Brightseat Rd)	T	981	-	-	-	-	0	-	137	184
	SB (FBI Exit only PM)	L	715	-	-	-	-	-	-	108	250
	SB (FBI Exit only PM)	R	250	-	-	-	-	-	-	98	209

Notes:

~ 50th percentile volume exceeds capacity, queue is theoretically infinitive.

95th percentile volume exceeds capacity, queue may be longer.

EB = Eastbound, WB = Westbound, NB= Northbound, SB = Southbound

LTR = left / through / right lanes

LTR/LTR = No-Build/Build with Mitigation

TWSC = Two-way STOP-Controlled unsignalized intersection

Red cells denote approaches and lane groups whose queuing length exceeds capacity.

[a] Intersection would operate as a TWSC under the No-build Condition and signalized under the Build with Mitigation Condtion.

[b] Intersection would operate as signalized under the No-build Condition and a roundabout under the Build with Mitigation Condition.

[c] Intersection would be added as part of the Build with Mitigation Condition

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6.6.6 Recommended Traffic Mitigation

Recommended traffic mitigation measures were developed to address the substantial traffic impacts caused by the addition of the Consolidated FBI HQ in Landover. These included traffic signal optimization, road widening, lane geometry improvements at intersections, installing new traffic signals, replacing signalized intersections with roundabouts, and constructing new bridges. If implemented, the recommended traffic mitigation measures would maintain acceptable traffic flow conditions based on the Landover Site Transportation Agreement. The following recommendations in table 6-8 are made to mitigate the proposed traffic impacts of the Landover Build Condition:

Table 6-8: Recommended Traffic Mitigation

Impact	Mitigation
To improve traffic operations along the Landover Road corridor the traffic signals would be optimized and/or coordinated	Optimize the traffic signals at the following locations: ○ Landover Road (MD 202) and Old Landover Road Landover Road (MD 202) and Dodge Park Road intersection ○ Landover Road (MD 202) and Firehouse Road intersection ○ Landover Road (MD 202) and Kenmoor Road intersection ○ Landover Road (MD 202) and Barlowe Road intersection ○ Landover Road (MD 202) and McCormick Drive/St. Joseph's Drive intersection ○ Landover Road (MD 202) and Technology Way intersection ○ Landover Road (MD 202) and Arena Drive/Lake Arbor Way intersection
To improve traffic operations along the Landover Road corridor widen the road, change the intersection geometry including new turn lanes (optimize traffic signal if warranted)	Widen the road along Landover Road between Brightseat Road and the I-95/I-495 Northbound off-ramp and change the lane geometry at the following locations: ○ Landover Road (MD 202) and Brightseat Road intersection ○ Landover Road (MD 202) and I-95 Southbound on-ramp intersection ○ Landover Road (MD 202) and I-95 northbound off-ramp intersection ○ Landover Road (MD 202) and Lottsford Road intersection
To improve traffic operations at isolated locations change the intersection geometry and optimize traffic signal if warranted	Change the intersection geometry at the following locations: ○ Martin Luther King Jr. Highway (MD 704) and Ardwick-Ardmore Road intersection ○ Brightseat Road and Site West Entrance/Maple Ridge Apartment south entrance intersection ○ Brightseat Road/Redskins Road and Sheriff Road/Brightseat Road intersection
To improve traffic operations at isolated locations install new traffic signals	Install new traffic signals at the following locations: ○ Brightseat Road and Site South Exit intersection ○ Brightseat Road and Arena Drive intersection ○ Ardwick-Ardmore Road and Brightseat Road intersection
To improve traffic operations replace signalized intersections with roundabouts	Construct roundabouts at the following locations: ○ Arena Drive and I-95 southbound on/off ramps intersection ○ Arena Drive and I-95 northbound on/off ramps intersection
To improve traffic operations provide a new connection across I-95/I-495	Construct a new four-lane bridge over I-95 to connect the east and west parts of Evarts Street.

The mitigation measures were developed to ensure the intersections would operate in a safe manner for all modes. This included assigning adequate pedestrian crossing times for any signalized intersection that required a change in the number of approach lanes and recommending non-motorized bridges to ensure bicycle and pedestrians can safely cross when an at grade crossing would not be safely accommodated. It is assumed that all planned roadway improvements and mitigation would follow the American Association of State Highway Transportation Officials, Maryland SHA, Prince George's County, and M-NCPPC requirements to ensure all vehicle, bicycle, and pedestrian movements are designed to the latest safety standards.

Overall, corridor-based improvements would occur, specifically along Landover Road (MD 202) between the I-95/I-495 northbound off-ramp intersection and Brightseat Road. These improvements would result in changing the corridor-level impacts from direct, long-term, major adverse impacts to direct, long-term, major beneficial impacts. There would also be isolated intersection improvements that result in changing the intersection impacts from direct, long-term, adverse impacts to direct, long-term, beneficial impacts. In addition to these impacts, there would be two failing Interstate facilities: one would be caused by the volume of vehicles added to the I-95/I-495 northbound off-ramp to Landover Road during the AM peak hour, and the second would be caused by the volume of vehicles added to the I-95/I-495 southbound on-ramp from Arena Drive during the PM peak hour. These area-wide impacts would result in direct, long-term, major adverse impacts due to the regional nature of the Interstate system (see Section 6.6.7.3 for further information).

The construction impacts would not change remaining at direct, short-term, major adverse impacts under the Build with Mitigation Condition. This impact level continues to reflect the short-term impacts from adding construction related trips caused by trucks, employees, and equipment as well as intermittent lane or road closures at the Landover Road and Arena Drive intersections with the ramps serving I-95/I-495, a regional facility.

6.6.7 Freeway Analysis Summary

The Highway Capacity Software (HCS) Version 6.65 was used to determine the Interstate operations for these key on- and off-ramps. The HCS modules follow the HCM uninterrupted flow procedures called freeways. The Interstate system is a network of signed roadways that crisscross the country from coast to coast (east-west) and border to border (north-south) and operate as freeways or uninterrupted vehicle flow. Interrupted vehicle flow refers to the roadways with traffic signals, stop signs, and roundabouts.

Based on the proposed FBI trip distribution, over 62 percent of inbound forecasted FBI vehicle trips and 57 percent of outbound forecasted FBI vehicle trips would use I-95/I-495 to access the proposed site. Because the interstate system is vital to serving the Landover site, I-95/I-495 (Capital Beltway) was evaluated to determine whether or not the added vehicle trips would cause any failing interstate facilities. Based on the agreed Landover Site Transportation Agreement (Appendix D1), the evaluated Interstate facilities focused on the peak direction only and at the primary off-ramps serving the inbound forecasted FBI vehicle trips during the AM peak hour and the on-ramps serving the outbound forecasted FBI vehicle trips during the PM peak hour.

6.6.7.1 Freeway Facilities Types Studied

Several freeway facility types were evaluated including diverge, merge, and weave designs. In total, the analysis included one diverge (off-ramp), one merge (on-ramp), and two weave facilities. Diverge facilities represent an off-ramp from the freeway. Merge facilities represent an on-ramp to the freeway. Weave facilities represent an on-ramp followed by an off-ramp that share the same lane and are spaced close enough to create a crisscross vehicle pattern caused by vehicles entering the freeway potentially blocking vehicles exiting the freeway or vice versa. The vehicle volumes combined with the distance between the on and off-ramps help determine if a facility

qualifies as a weave or two separate merge and diverge areas (HCM, Equation 12-4; TRB 2010). Figures 6-11 and 6-12 illustrate a typical diverge and merge facility, respectfully. Figure 6-13 illustrates a typical weave facility.

Figure 6-11: Typical Diverge Facility

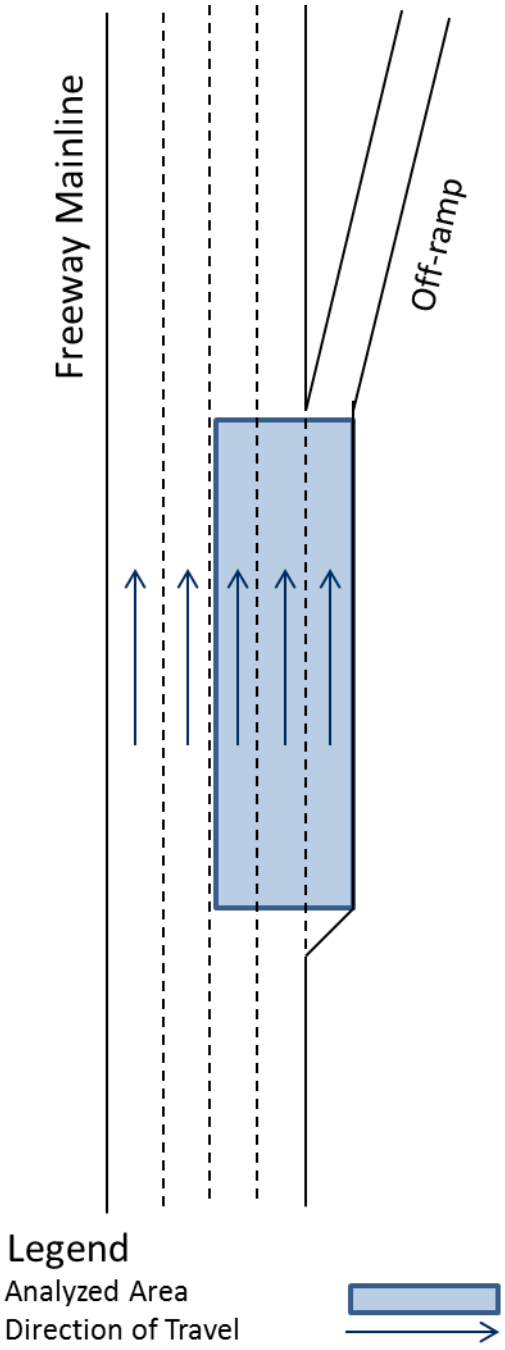


Figure 6-12: Typical Merge Facility

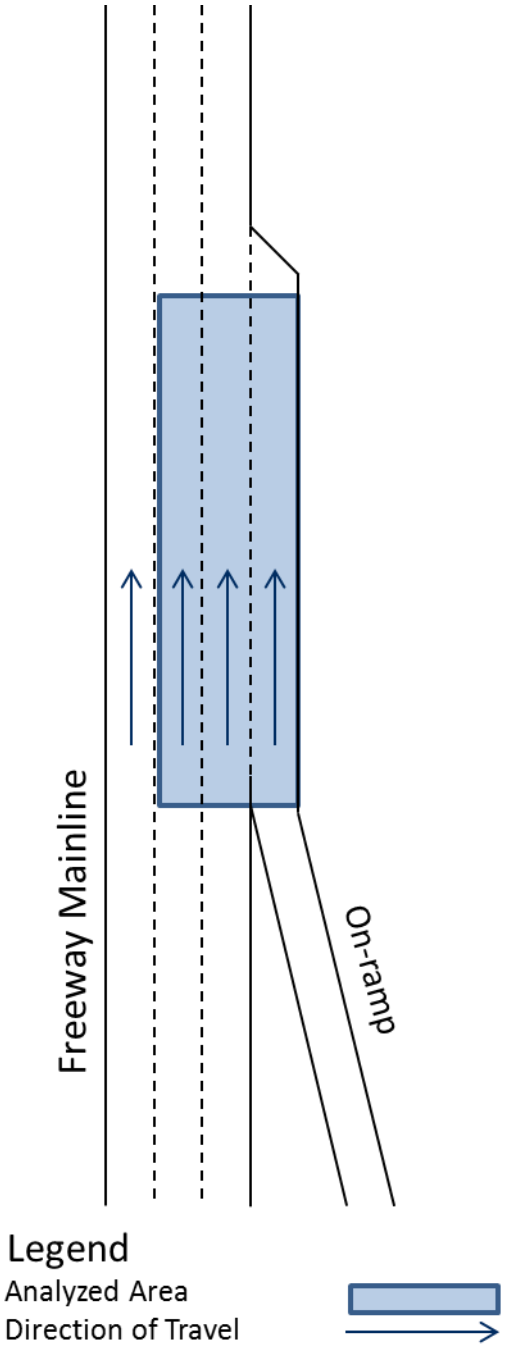
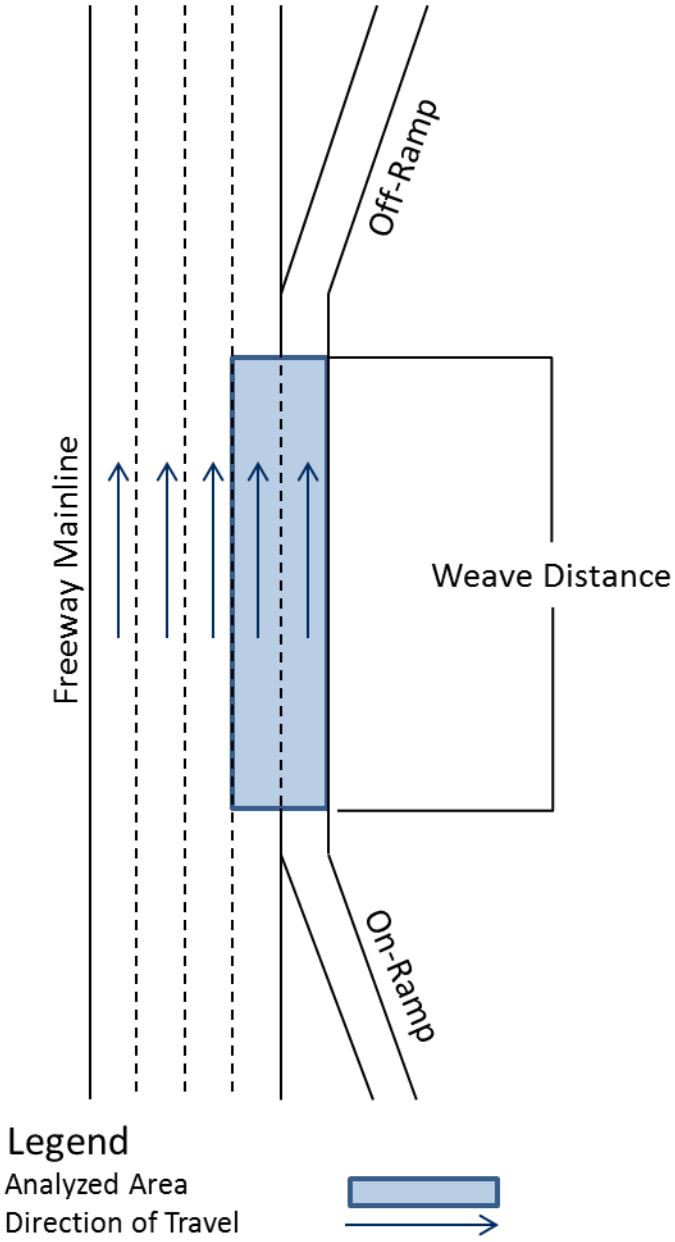


Figure 6-13: Typical Weave Facility



Freeway facilities are evaluated based on the density of vehicles. The higher the density the slower the vehicles travel and the worse the operations. Based on the vehicle density, the HCM provides LOS equivalents to represent the driver's perception of the facility operation. There is also a different density interval assigned to an LOS for freeway versus collector distributor roadways. A collector distributor roadway is a barrier or striped separated roadway from the mainline freeway that operates parallel to the mainline freeway and provides all access to on- and off-ramps. For example, the two-lane roadways running alongside the I-95/I-495 mainline that travel under Landover Road are collector distributors. Table 6-9 contains the HCM freeway LOS.

Table 6-9: HCM Freeway Facility Level of Service

LOS	Freeway Weaving Segments, Merge, and Diverge Facilities	Collector Distributor Weaving Segments	Description
	Density (passenger cars/ mile/ lane)		
A	0-10	0-12	Passing operation
B	>10-20	>12-24	
C	>20-28	>24-32	
D	>28-35	>32-36	
E	>35	>36	Unstable conditions
F	Demand Exceeds Capacity		Above capacity and unstable conditions

Source: TRB (2010)

All Interstate facilities were evaluated based on a PHF of 0.92 (ratio of the 60-minute volume divided by 4 times the highest 15-minute volume), the lowest accepted by VDOT's *Traffic Impact Analysis Regulations* to be consistent for all three sites and conservative value for the analysis of future facilities (VDOT 2012). This is also the same PHF used to evaluate all intersection facilities within the study area.

6.6.7.2 Freeway Facilities Evaluated

The following facilities were evaluated:

AM Peak Hour Inbound Flows

- Ramp Diverge: I-95/I-495 southbound to Landover Road westbound
- Weave Section: I-95/I-495 Collector Distributor northbound between Arena Drive and Landover Road

PM Peak Hour Inbound Flows

- Ramp Merge: Landover Road eastbound to I-95/I-495 northbound
- Weave Section: I-95/I-495 southbound between Arena Drive and Central Avenue

I-95/I-495 Southbound off-ramp to Landover Road Westbound

This facility is a three-lane facility along a collector distributor with two through lanes and one lane serving the off-ramp. There is a 340-foot deceleration lane serving the off-ramp.

I-95 Northbound Weave Between Arena Drive and Landover Road

This facility is a three-lane facility along a collector distributor with two through lanes and one lane serving the on- and off-ramps. There is a 1,165-foot distance between the on- and off-ramps and 2 maneuvering lanes (the minimum number of lanes in use to either enter or exit the freeway).

I-95/I-495 Northbound on-ramp from Landover Road Eastbound

This facility is a three-lane facility along a collector distributor with two through lanes and one lane serving the on-ramp. There is an 880-foot acceleration lane serving the off-ramp.

I-95 Southbound Weave Between Arena Drive and Central Avenue (MD 214)

This facility is a five-lane facility along the freeway mainline with five through lanes and one lane serving the on- and off-ramps. There is a 3,580-foot distance between the on- and off-ramps and 2 maneuvering lanes (the minimum number of lanes in use to either enter or exit the freeway).

6.6.7.3 Freeway Analysis

Based on the analysis performed using HCS, two of the four Interstate facilities are projected to fail. During the AM peak hour, the weave facility serving the inbound FBI vehicle trips from I-95/I-495 from the south would result in an over capacity freeway facility. During the PM peak hour, the weave facility serving the FBI vehicle trips to I-95/I-495 to the south would result in failing freeway facility. Table 6-10 contains the Build Condition with Mitigation freeway analysis.

Table 6-10: Build Condition with Mitigation Freeway Analysis

Freeway Analysis	Facility Type	Density (pc/mi/ln)	LOS	AM Check
I-95 Southbound to Landover Road Westbound	Diverge	31.0	D	Pass
I-95/I-495 Northbound between Arena Drive and Landover Road	Weave	Not Reported	F	Fail
Landover Road Eastbound to I-95/I-495 Northbound	Merge	13.1	B	Pass
I-95/I-495 Southbound between Arena Drive and Central Avenue	Weave	45.6	F	Fail

Notes: LOS = Level of Service; Density = Passenger cars per mile per lane (pc/mi/ln); Not Reported = Roadway flow rate exceeds capacity

An additional test was agreed based on the Landover Site Transportation Agreement to determine if the difference in vehicle density between the No-build Condition and Build Condition was greater than five percent. This would confirm the forecasted FBI vehicle trips significantly contributed to the failing of the facility. Based on the additional analysis, both interstate facilities would either contribute more than five percent to vehicle density or the Build Condition density was off the chart, thus not allowing for the comparison. Table 6-11 contains the Build Condition with Mitigation additional freeway analysis.

Table 6-11: Build Condition with Mitigation Freeway Analysis

Additional Freeway Analysis	Condition	Density (pc/mi/ln)	Density Difference	AM Check
I-95/I-495 Northbound between Arena Drive and Landover Road	No-build	36.0	Unable to Calculate	Fail
	Build with Mitigation	Not Reported		
I-95/I-495 Southbound between Arena Drive and Central Avenue	No-build	37.4	21.9%	Fail
	Build with Mitigation	45.6		

Notes: Density = Passenger cars per mile per lane (pc/mi/ln); Not Reported = Roadway flow rate exceeds capacity

The analysis concluded that two Interstate facilities would fail based on the forecasted volumes. This included I-95/I-495 Northbound between Arena Drive and Landover Road during the AM peak hour and I-95/I-495 Southbound between Arena Drive and Central Avenue during the PM peak hour. These facilities were not mitigated but are being studied by the Maryland SHA to determine the best option to address the failures.

6.6.8 Entry Control Facility Summary

The ECF analysis was performed once the complete set of external roadway mitigations was established. All mitigation measures were coded into TransModeler™ and the several scenarios were tested to determine the

minimum number of lanes capable of handling the AM peak hour forecasted FBI vehicle trips. It was determined that nine lanes were required to handle the forecasted demand, although eight lanes may have worked if more queue space was available between the ECF and Brightseat Road. This resulted in the following breakdown of vehicles between the two ECFs:

- West Entrance from Brightseat Road: 1,693 vehicles or 83 percent
- North Entrance from Evarts Street: 355 vehicles or 17 percent

Following the process to ensure statistical accuracy for the simulations, TransModeler™ was used to run 25 simulations for each scenario to calculate the standard deviation based on the VHT metric. Appendix D12 contains the statistical results for determining the minimum number of TransModeler™ simulations required to be within plus or minus 2 percent at the 95th percentile confidence interval. Following the statistical procedure, the following three scenarios were completed:

Site West Access and Brightseat Road no intersection control (free right) and Site North Access and Evarts Street STOP-sign controlled (exit only)

1. Seven lanes at the Site West Access and one lane at the Site North Access
2. Eight lanes at the Site West Access and one lane at the Site North Access
3. Nine lanes at the Site West Access and one lane at the Site North Access

For the seven lane scenario, the average queue length for all lanes would exceed the average available capacity by 454 feet. The eight lane scenario resulted in the average queue exceeding the average available capacity by 33 feet. The nine lane scenario resulted in no queues exceeding the available storage. Table 6-12 contains the Landover site ECF results.

Table 6-12: Landover Site ECF Analysis Results

Entrance	Lanes	Seven and One Lane					Eight and One Lane					Nine and One Lane				
		Vehicles Processed	Proposed Length	Average Queue	Maximum Queue	Pass/Fail	Vehicles Processed	Proposed Length	Average Queue	Maximum Queue	Pass/Fail	Vehicles Processed	Proposed Length	Average Queue	Maximum Queue	Pass/Fail
		Vehicles	Feet				Vehicles	Feet				Vehicles	Feet			
Site South Access	1	204	370	450	805	Fail	201	370	179	350	Pass	178	370	80	214	Pass
	2	206	350	321	643	Fail	201	350	148	305	Pass	174	350	72	180	Pass
	3	202	330	407	908	Fail	204	330	170	316	Pass	176	330	68	176	Pass
	4	203	310	292	510	Fail	205	310	212	357	Fail	200	310	127	264	Pass
	5	203	285	299	710	Fail	204	285	222	376	Fail	172	285	57	144	Pass
	6	202	265	333	881	Fail	203	265	160	329	Fail	196	265	102	231	Pass
	7	203	245	376	878	Fail	199	245	142	308	Fail	186	245	79	197	Pass
	8						196	220	124	300	Fail	184	220	81	190	Pass
	9											172	200	73	170	Pass
	Average		**308**		**762**	**Fail**		**297**		**330**	**Fail**		**286**		**196**	**Pass**
Site North Access	1	124	195	57	145	Pass	123	195	55	127	Pass	123	195	53	127	Pass
	Average		**195**		**145**	**Pass**		**195**		**127**	**Pass**		**195**		**127**	**Pass**

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6.6.9 Signal Warrant Analysis Summary

A signal warrant analysis is a quantitative assessment based on traffic volumes and established standards to determine whether or not installing a traffic signal at a specific intersection is justified, or warranted. The signal warrant analysis was conducted following the guidelines from the 2009 *Manual on Uniform Traffic Control Devices* (MUTCD) (FHWA 2012). To be consistent for all three proposed sites the Virginia Supplement to the 2009 MUTCD, 2011 Edition guidelines (VDOT 2011) were also employed. Combining both methods provides an analysis of two signal warrants per intersection, an average daily traffic (ADT) warrant and a peak hour warrant.

The ADT warrant (following the Virginia guidelines) compares a forecasted ADT volume for the intersection to minimum established ADTs based on the number of lanes along the two intersecting roadways. The forecasted intersection ADT is calculated by applying a 10 percent factor to the PM peak hour forecasted volumes (highest volume or highest left-turn volume). The volumes are then compared to several tables in the VDOT MUTCD Supplement. The first table in the VDOT MUTCD Supplement contains the urban area minimum vehicle volumes to qualify the intersection; the second table in the VDOT MUTCD Supplement contains the urban area interruption of continuous traffic vehicle volumes to qualify the intersection. Both tables also contain 80th percentile volumes for both cases, which is used in urban areas. Based on the ADT warrant analysis, all four intersections that are recommended in the mitigation for a traffic signal would meet the ADT warrants. Table 6-13 contains the ADT warrant summary.

Table 6-13: ADT Warrant Analysis

Warrant	Forecasted ADT	Warrant Minimum Limit	Warrant Check
	vehicles	vehicles	
Ardwick-Ardmore Road and Brightseat Road			
Warrant 1A – Minimum Vehicular Volume	16,510	9,600	**Meets**
Warrant 1B – Interruption of Continuous Traffic	16,510	14,400	**Meets**
Warrant 1C – Combination of 1A and 1B (80%)	16,510	7,680	**Meets**
	16,510	11,520	**Meets**
Brightseat Road and FBI Exit/Maple Ridge Apartments North			
Warrant 1A – Minimum Vehicular Volume	16,930	9,600	**Meets**
Warrant 1B – Interruption of Continuous Traffic	16,930	14,400	**Meets**
Warrant 1C – Combination of 1A and 1B (80%)	16,930	7,680	**Meets**
	16,930	11,520	**Meets**
Brightseat Road and FBI Entrance/Maple Ridge Apartments South			
Warrant 1A – Minimum Vehicular Volume	18,590	9,600	**Meets**
Warrant 1B – Interruption of Continuous Traffic	18,590	14,400	**Meets**
Warrant 1C – Combination of 1A and 1B (80%)	18,590	7,680	**Meets**
	18,590	11,520	**Meets**
Brightseat Road and FBI Exit South			
Warrant 1A – Minimum Vehicular Volume	20,170	8,000	**Meets**
Warrant 1B – Interruption of Continuous Traffic	20,170	12,000	**Meets**
Warrant 1C – Combination of 1A and 1B (80%)	20,170	6,400	**Meets**
	20,170	9,600	**Meets**

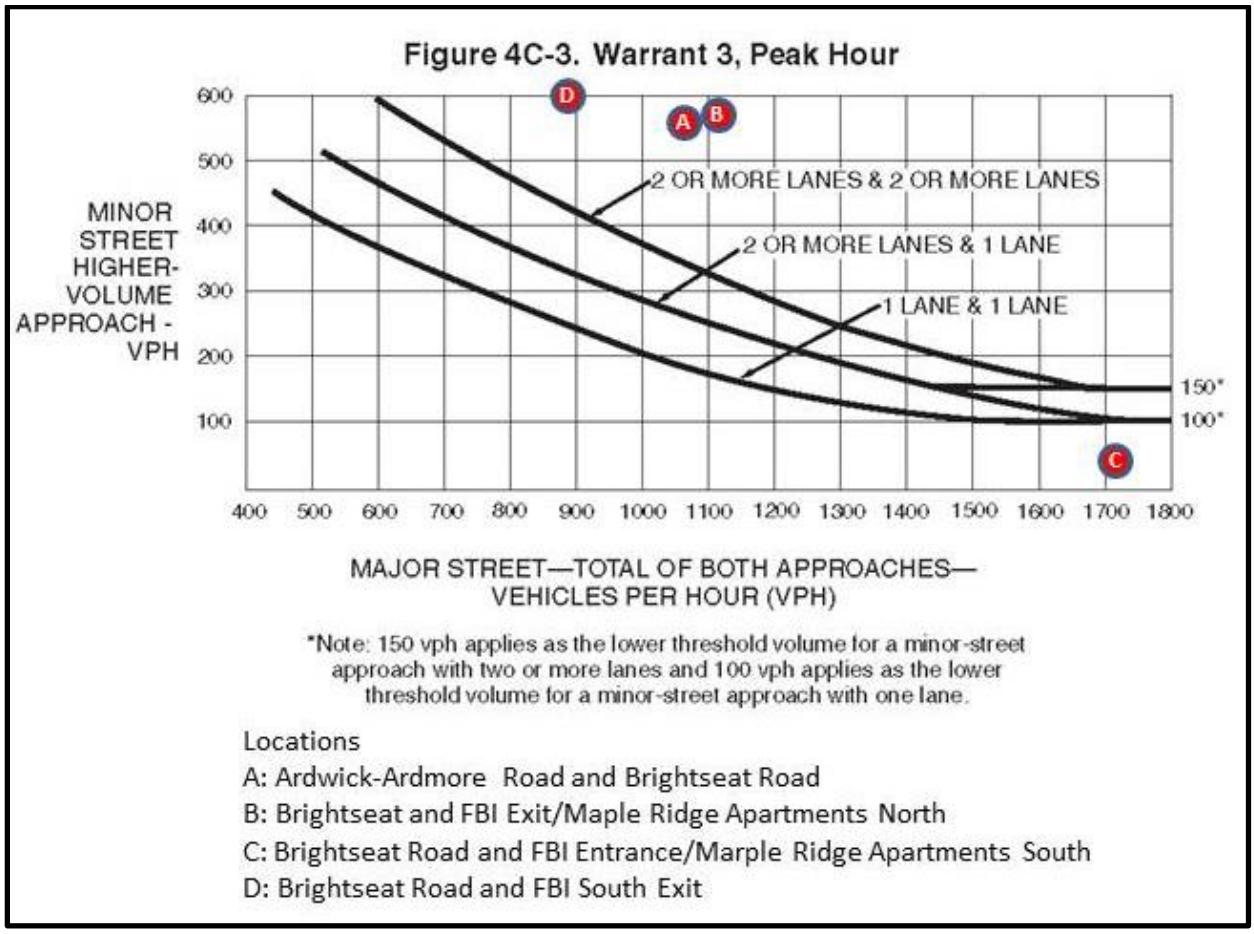
The peak hour warrant following the MUTCD requires two categorical tests. If either of the tests passes then the intersection meets the warrant. The first category includes three tests: a test of the delay under STOP-sign control; a test of the minor street vehicle volume; and a test of the total intersection volume. The intersection delay test determines if the intersection is under a STOP-control, the delay for the minor-street would exceed four vehicle-hours (number of vehicles in queue times approach vehicle delay) for one lane or five vehicle-hours for two-lanes. The minor street vehicle volume approach test determines whether or not the vehicle volume exceeds 100 vehicles for one lane, 150 vehicles per hour for two lanes. The test of the total intersection volume examines if the total volume entering the intersection exceeds 650 vehicles for a three lane approach and 800 vehicles for a four-lane approach. The second categorical test includes one test based on a plotted chart published in the MUTCD (figure 4C-3) (FHWA 2012). The chart plots the highest minor street approach volume against the total major street approach volumes. If the plotted point falls higher than the appropriate curve (based on number of lanes for the major and minor approaches), the warrant is met. Figure 6-14 shows the MUTCD plotted graph with the four intersection points.

Based on the peak hour warrant analysis, three of the four intersections would meet the warrant. The Brightseat Road and FBI Entrance/Maple Ridge Apartments South intersection would not meet the warrant because of the low number of vehicles exiting from the Maple Ridge Apartments, although it does meet the ADT warrant. Note that this intersection currently operates under a flashing RED signal for this approach; therefore, converting this intersection to a STOP-control might cause a safety issue with removal of the traffic signal. Table 6-14 contains the peak hour warrant analysis results.

Table 6-14: Peak Hour Warrant Analysis

Warrant	Forecasted ADT	Warrant Minimum Limit	Category Check	Overall Check
Ardwick-Ardmore Road and Brightseat Road				
Warrant 3A1 – Total Stopping Time	5 hours	5 hours	Meets	
Warrant 3A2 – Minor Street Volume	564 vehicles	150 vehicles	Meets	
Warrant 3A3 – Total Entering Volume	1,651 vehicles	800 vehicles	Meets	
Warrant 3B – Plotted Point Falls Above Curve	See A on Figure 6-14		Meets	Meets
Brightseat Road and FBI Exit/Maple Ridge Apartments North				
Warrant 3A1 – Total Stopping Time	8.67 hours	5 hours	Meets	
Warrant 3A2 – Minor Street Volume	584 vehicles	150 vehicles	Meets	
Warrant 3A3 – Total Entering Volume	1,693 vehicles	800 vehicles	Meets	
Warrant 3B – Plotted Point Falls Above Curve	See B on Figure 6-14		Meets	Meets
Brightseat Road and FBI Entrance/Maple Ridge Apartments South				
Warrant 3A1 – Total Stopping Time	< 0.1 hours	4 hours	Fails	
Warrant 3A2 – Minor Street Volume	44 vehicles	100 vehicles	Fails	
Warrant 3A3 – Total Entering Volume	1,196 vehicles	650 vehicles	Meets	
Warrant 3B – Plotted Point Falls Below Curve	See C on Figure 6-14		Fails	Fails
Brightseat Road and FBI Exit South				
Warrant 3A1 – Total Stopping Time	18.5 hours	5 hours	Meets	
Warrant 3A2 – Minor Street Volume	1,126 vehicles	150 vehicles	Meets	
Warrant 3A3 – Total Entering Volume	2,017 vehicles	650 vehicles	Meets	
Warrant 3B – Plotted Point Falls Above Curve	See D on Figure 6-14		Meets	Meets

Figure 6-14: MUTCD Warrant 3B - Peak Hour Warrant



6.7 Overall Summary

The following summarizes the conclusions of the transportation evaluation:

A total of 3,296 AM peak hour and 3,047 PM peak hour person trips are projected to be added to all modes of transportation. Total Metro transit trips are projected at 715 AM peak hour and 661 PM peak hour trips. Total vehicle trips are projected at 2,195 AM peak hour and 2,030 PM peak hour trips. The remaining trips would be commuter bus, bicycle, or walking trips.

The pedestrian network would expand with the inclusion of the mitigation to construct the Evarts Street Bridge providing a new connection across the Capital Beltway. The pedestrian network along Brightseat Road would allow for the same connections as the Existing Condition and would be expected to be reconstructed following the construction of the Landover site. It is assumed that all sidewalk curb ramps located adjacent to the parcel would be brought up to ADA compliance during the sidewalk reconstruction.

The bicycle network would expand with the inclusion of the mitigation to construct new bicycle lanes along Brightseat Road connecting Sheriff Road to Evarts Street. The addition of the Evarts Street Bridge and Landover Road mixed-use trail would also add to the bicycle network. These new connections would provide for an

interconnected bicycle network linking all proposed bicycle facilities in the study area and would encourage bicycle users to access the Landover site.

The transit network (Metrorail and Metrobus) would not be affected by the Landover Alternative. The Largo Town Center Metro Station and all bus bays would operate below capacity with the addition of the forecasted background growth and transit trips from the Landover site (including the addition of the shuttle buses operating between the Landover site and Metro station). Through the course of background growth along the bus network, the Metrobus Route F14 would operate at capacity. It is assumed that WMATA would implement increased capacity improvements for the Route F14 and follow their long-term plan to address growth-related capacity issues for both bus and rail operations.

Parking availability would remain the same because the Landover site would accommodate all parking needs on-site and implement a robust Transportation Management Plan to discourage employees from seeking alternative parking options in the nearby neighborhoods.

Truck access would be designed to accommodate the Landover site from Evarts Street during a majority of the day and from Brightseat Road during all other times. This plan is not the official plan, but a plan to evaluate as part of the EIS. The Evarts Street access would have ample capacity to handle truck access based on the entry control facility analysis, although it is assumed that all truck deliveries would be scheduled during the off-peak hours.

The traffic operations at four intersections currently operate at an unacceptable levels of service under the Existing Condition. Once the background growth and planned developments are added (No-build Condition), eight intersections would degrade from a passing LOS to a failing LOS. There were no planned roadway improvements within the Landover site study area to compensate for the substantial number of vehicle trips added from the addition of the planned developments.

The addition of the Landover site to the traffic network would result in four intersections operating at an unacceptable level of service. These four failing intersections would experience equal or better operations than the No-build Condition as a result of recommended mitigation that include new turning lanes, extended turning lane lengths, new travel lanes, new traffic signals, and replacing signalized intersections with roundabouts. Overall, the roadway non-Interstate network would operate much better and experience shorter queues with the addition of the recommended mitigation when compared to the No-build Condition.

There are forecasted to be two failing Interstate facilities that directly serve access between the Capital Beltway and the Landover site. The Maryland SHA and General Services Administration are working to determine the best course of action to address these issues. It is assumed, at a minimum, there will be a need to require changes to the Interstate ramps along the Capital Beltway between the Landover Road and Central Avenue Interchanges.

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7.0 References

American Public Transportation Association (APTA)

2013 Average New Vehicle Costs for 2012 and 2013 Vehicles by Type. Available online at: http://www.apta.com/resources/statistics/Documents/table22_vehcosttransitlength2013.pdf, accessed April 3, 2015.

Bureau of Labor Statistics (BLS)

2015 Washington – Baltimore Area Consumer Price Index, 2013-2014. Available online at: http://www.bls.gov/regions/mid-atlantic/news-release/consumerpriceindex_washingtondc.htm#CPI_TableAChart1.xlsx, accessed June 17, 2015.

District Department of Transportation (DDOT)

2010 Incorporation of Transportation Demand Management (TDM) into the Development Review Process: Final Report and Recommendations. Submitted to DDOT from Michael Baker, Jr., Inc. July 2010. Available online at: http://ddot.dc.gov/sites/default/files/dc/sites/ddot/publication/attachments/tdm-final-report.pdf, accessed June 25, 2015.

2012 Guidelines to Comprehensive Transportation Review Requirements, CTR Beta Version. Available online at: http://nacto.org/docs/usdg/comprehensive_transportation_review_ddot.pdf, accessed August 12, 2015.

2013 Maryland Avenue SW Transportation Study Data Collection Report, Prepared by Parsons Brinckerhoff, Washington, D.C., October 2013.

Enterprise CarShare

2015 Enterprise Carshare. Washington, D.C. Available online at: http://www.enterprisecarshare.com/car-sharing/program/dc, accessed June 22, 2015.

Federal Highway Administration (FHWA)

2014 Designing Sidewalks and Trails for Access, February 2014. Available online at: http://www.fhwa.dot.gov/environment/bicycle_pedestrian/publications/sidewalks/chap4a.cfm, accessed May 17, 2015.

General Services Administration (GSA)

2008 Final Environmental Impact Statement on St. Elizabeths Campus Master Plan for the Consolidated Headquarters of the Department of Homeland Security.

2015 Phase 1 Environmental Site Assessment, Landover Alternative.

General Services Administration (GSA) in cooperation with the National Capital Planning Commission (NCPC)

2013 Old Post Office Building Redevelopment Revised Transportation Study Appendix.

Institute of Transportation Engineers (ITE)

2004 Trip Generation Handbook, Second Edition, Institute of Transportation Engineers, Washington, D.C.

2010 Transportation Impact Analyses for Site Development, Washington, D.C.

2012 Trip Generation Manual, Ninth Edition, Institute of Transportation Engineers, Washington, D.C., September 2012.

2014 Trip Generation Handbook, Third Edition. An ITE Proposed Recommended Practice. Institute of Transportation Engineers, Washington, D.C.

Maryland Department of Transportation (MDOT) with Maryland SHA

2014 Suburban Maryland Capital Improvement Table. Available online at: http://www.mwcog.org/clrp/projects//tip/fy1520tip/MD-FY15-20TIP-11072014.pdf, accessed March 18, 2015.

Maryland-National Capital Park and Planning Commission (M-NCPPC)

2009 Approved Countywide Master Plan of Transportation. Available online at: http://www.pgplanning.org/Resources/Publications/Mpot.htm, accessed March 3, 2015.

2012a Prince George's County: Transportation Review Guidelines. Available online at: http://www.pgplanning.org/Assets/Planning/Transportation/TRG2012/TRGPart1.pdf, accessed May 28, 2014.

2012b Prince George's County GIS, PGAtlas. Available online at: http://www.pgatlas.com/, accessed October 2014.

2014a Plan Prince George's 2035. February 6, 2014. Available online at: http://issuu.com/mncppc/docs/approved_general_plan_book/79?e=2864017/8021349, accessed February 5, 2015.

Maryland-National Capital Park and Planning Commission (M-NCPPC) and Prince George's County Planning Department (PGC PD)

2009a Landover Gateway Sector Plan and Sectional Map Amendment. Available online at: http://www.pgplanning.org/Resources/Publications/Approved_Landover_Plan.htm, accessed March 3, 2015.

2009b Prince George's County Bicycle Master Plan. Available online at: http://www.pgplanning.org/Assets/Planning/Programs+and+Projects/Transportation+Plans/Bike+Planning/Bikeways+Trails+Map.pdf, accessed March 20, 2015.

2012 Woodmore Towne Centre Preliminary Plan 4-06016, Waiver of the Rules. Available online at: http://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=2&ved=0CCQQFjAB&url=http%3A%2F%2Fmncppc.iqm2.com%2FCitizens%2FFileOpen.aspx%3FType%3D4%26ID%3D1307&ei=5CqUVdy8FpWjugSV9rKQBw&usg=AFQjCNERSq00W-4IKnv0hAIIxQcjkDdSfA&sig2=fS-4EoJ51tOZBubn-1NfpA&bvm=bv.96952980,d.c2E&cad=rja, accessed March 20, 2014.

Maryland State Highway Administration (Maryland SHA)

2014a 2013_Functional_Class.shp (GIS data). Available online at: http://sha.maryland.gov/Index.aspx?PageId=282, accessed April 27, 2015.

2014b AADTs of Stations for the Years 2007-2013. Available online at: http://www.marylandroads.com/oppen/station_history.pdf, accessed January 1, 2015.

2015a "High Occupancy Vehicle (HOV) Lanes Frequently Asked Questions." Available online at: http://marylandroads.com/Index.aspx?PageId=249&d=39, accessed April 29, 2015.

2015b Maryland crash and injury data from 2011-2013. Received on March 11, 2015.

Maryland Transit Administration (MTA)

2013 Purple Line Final Environmental Impact Statement. Available online at: http://www.purplelinemd.com/en/about-the-project/studies-reports/feis-document, accessed February 6, 2015.

Masog, Tom

2014 Meeting with Tom Masog, transportation supervisor, M-NCPPC, December 14, 2014, between Mark Berger, Louis Berger, and Tom Masog, M-NCPPC, December 22, 2014.

2015 Personal communication between Tom Masog, transportation supervisor, M-NCPPC, and Mark Berger, Louis Berger, March 17, 2015.

Metropolitan Washington Council of Governments (MWCOG)

2011 State of the Commute. Available online at: http://www.mwcog.org/uploads/pub-documents/pV5bX1o20140916131635.pdf, accessed March 16, 2014.

2013 Commuter Connections State Of The Commute Survey 2013 Technical Survey Report Draft. Prepared for: State of the Commute. Available online at: http://www.mwcog.org/transportation/weeklyreport/2013/files/09-17/CommuterConnections_StateOfTheCommuteSurvey_2013_Draft_SurveyReport.pdf (modal split represents an average for the entire MWCOG region).

2014 MWCOG Memoranda to Louis Berger including Travel Demand Model Data 01_09_14 & Data 07_16_14 in administrative record. Emailed from Meseret Seifu.

2015 Round 8.3 Regional Growth Rates by Mode, 2008-2025. Received on January 20, 2015.

National Capital Planning Commission (NCPC)

2004 The Comprehensive Plan for the National Capital. Available online at: http://www.ncpc.gov/ncpc/Main%28T2%29/Planning%28Tr2%29/ComprehensivePlan.html, accessed February 13, 2015.

2012 Draft Update (June 2012) to the Policies in the Transportation and Workplace Elements, Comprehensive Plan for the National Capital, Federal Elements. Available online at: http://www.ncpc.gov/DocumentDepot/Actions_Recommendations/2011July/Comp_Plan_Update_Transportation_Workplace_Elements_CP01_Recommendation_July2011_.pdf, accessed March 16, 2014.

O'Connell, Johnathan

2014 "Sears to close Landover store in March," The Washington Post online, January 6, 2014. Available online at: http://www.washingtonpost.com/business/capitalbusiness/sears-to-close-landover-store-in-march/2014/01/06/f9b80d3a-7722-11e3-af7f-13bf0e9965f6_story.html, accessed March 3, 2015.

Prince George's County Department of Public Works and Transportation (PGC DPWT)

2013 Prince George's County. Public Works and Transportation. TheBus schedules. Available online at: http://www.princegeorgescountymd.gov/sites/PublicWorks/Transit/TheBus/Pages/Maps-and-Schedules.aspx, accessed December 19, 2014.

Prince George's County Economic Development Corporation

2013 Prince George's County. Economic Development Corporation. Developments and Projects: Woodmore Towne Centre at Glenarden. Available online at: http://www.pgcedc.com/business-development/developments-projects, accessed June 19, 2015.

Prince George's County Planning Department

2009 Prince George's County. Planning Department. Approved Countywide Master Plan of Transportation. Available online at: http://www.pgplanning.org/Resources/Publications/Mpot.htm, accessed March 3, 2015.

SDDCTEA

2011 Better Military Traffic Engineering, Pamphlet 55-17. Available online at: SDDCTEA_Pamphlet_55-17_2011 in Admin record accessed 9/26/2013. Available online at: http://www.sddc.army.mil/sites/TEA/Functions/SpecialAssistant/TrafficEngineeringBranch/Pages/default.aspx.

Transportation Research Board (TRB)

2000 Highway Capacity Manual (HCM), Transportation Research Board for the National Academies of Science. Washington, D.C.

2010 Highway Capacity Manual (HCM), Transportation Research Board for the National Academies of Science. Washington, D.C., December 2010.

2011 National Cooperative Highway Research Program Report 684, Enhancing Internal Trip Capture Estimation for Mixed-Use Developments, Transportation Research Board for the National Academies of Science, Washington, D.C.

2013 Transit Capacity and Quality of Service Manual, 3rd Edition. Transportation Research Board for the National Academies of Science. Available online at: http://www.trb.org/main/blurbs/169437.aspx, accessed December 19, 2014.

United States Census Bureau (U.S. Census Bureau)

2009-2013 American Community Survey Table B08301, Means of Transportation to Work; using American FactFinder. Available online at: http://factfinder.census.gov/faces/nav/jsf/pages/searchresults.xhtml?refresh=t, accessed February 23, 2015.

United States Department of Justice (USDOJ)

2007 Civil Rights Division, Standards for Accessibility Design - Chapter 6, Curb Ramps and Pedestrian Crossings, May 2007.

2010 2010 ADA Standards for Accessible Design, September 2010. Available online at: http://www.ada.gov/regs2010/2010ADAStandards/2010ADAstandards.htm#c4, accessed August 13, 2015.

Virginia Department of Transportation (VDOT)

2011 Virginia Supplement to the MUTCD. Available online at: http://www.virginiadot.org/business/virginia_mutcd_supplement.asp, accessed January 7, 2015.

2012 Traffic Impact Analysis Regulations. January 1, 2012. Available online at: http://www.vdot.virginia.gov/info/traffic_impact_analysis_regulations.asp, accessed October 17, 2013.

2013 VDOT Traffic Operations Analysis Toll Guidebook V1.1. Access online at: http://www.virginiadot.org/business/manuals-default.asp, accessed April 13, 2015.

Washington Metropolitan Area Transportation Authority

n.d. Largo Town Center Station Bus Map. Available online at: http://www.wmata.com/rail/station_bus_maps/PDFs/Largo%20Town%20Center%20STation.pdf, accessed January 15, 2015.

2008 WMATA Station Site & Access Planning Manual. Available online at: https://www.wmata.com/pdfs/planning/Station%20Access/SSAPM.pdf, accessed February 3, 2015.

2009 Guide for the Design and Placement of Transit Stops. Available online at: https://www.wmata.com/pdfs/planning/WMATA%20Guidelines-Design%20and%20Placement%20of%20Transit%20Stops.pdf, accessed April 7, 2015.

2013a WMATA 2012 Metrorail Passenger Survey. Received June 2, 2014.

2013b WMATA Asset Improvement Evaluation Study. Available online at: http://www.wmata.com/pdfs/planning/WMATABusShelterImprovementEvaluationStudyFinalReport062813.pdf, accessed February 2, 2015.

2013c WMATA Title VI Service Standards, Policies, and Definitions. Available online at: http://www.wmata.com/about_metro/board_of_directors/board_docs/091213_3BTitleVI.pdf, accessed February 14, 2015.

2014a Momentum Strategic Plan. Available online at: http://www.wmata.com/about_metro/news/Momentum_Strategic_Plan_2013-01-28-secure.pdf, accessed April 15, 2015.

2014b "Metro Plans to Increase Number of 8-car trains on Blue Line," July 2, 2014. Available online at: http://www.wmata.com/about_metro/news/PressReleaseDetail.cfm?ReleaseID=5739, accessed March 9, 2014.

2014c WMATA Metrorail Station Faregate Data (Largo Town Center), October 2014. Received on December 16, 2014.

2014d WMATA Maryland Metrobus schedules. Available online at: http://www.wmata.com/bus/timetables/timetables-state.cfm?State=MD, accessed December 19, 2014.

2014e WMATA Metrobus Automatic Passenger Counter (APC) Data, October 2014. Received on November 19, 2014.

2014f WMATA Metrorail Frequency. Available online at: http://www.wmata.com/rail/frequency.cfm, accessed December 20, 2014.

2015a WMATA Metrorail Station Inventory. Available online at: http://www.wmata.com/rail/stations.cfm, accessed January 8, 2015.

2015b Metro Announces Partnership with Enterprise to Expand Car Sharing at Parking Facilities. Available online at: http://www.wmata.com/about_metro/news/PressReleaseDetail.cfm?ReleaseID=5918, accessed August 13, 2015.

Washington Post

2014 Glenarden Apts. In Landover area to be razed, placed with mixed-use community. By Luz Lazo. Available online at: http://www.washingtonpost.com/local/trafficandcommuting/glenarden-apts-in-landover-area-to-be-razed-replaced-with-mixed-used-community/2014/10/28/d44c8fc2-595c-11e4-bd61-346aee66ba29_story.html, accessed December 14, 2014.

World Public Library

2015 Landover Mall. Available online at: http://netlibrary.net/article/whebn0001888913/landover%20mall, accessed February 3, 2015.

Zipcar

2015 Find Zipcar Car Sharing Locations in Washington, D.C. Available online at: http://www.zipcar.com/dc/find-cars, accessed June 22, 2015.

Site Visits

1. Site visit for sidewalks and parking check, Louis Berger, May 1, 2015.
2. Largo Town Center Station Site Inventory, FourSquare, December 19, 2014.

8.0 Acronyms and Abbreviations

A

AADT Annual average daily traffic

ADA Americans with Disabilities Act

ADT Average daily traffic

APTA American Public Transit Association

ATR Automated Traffic Recorder

B

BLS Bureau of Labor Statistics

C

CEQ Council on Environmental Quality

CFR Code of Federal Regulations

CLV Critical Lane Volume

CUP Central Utility Plant

D

DDOT District Department of Transportation

DTA dynamic traffic assignment

E

ECF Entry Control Facility

EIS Environmental Impact Statement

F

FBI Federal Bureau of Investigation

FHWA Federal Highway Administration

G

GIS Geographic Information Systems

GSA General Services Administration

GSF Gross Square Feet

H

HCM	Highway Capacity Manual
HCS	Highway Capacity Software
HQ	Headquarters

I

ISC	Interagency Security Committee
ITE	Institute of Transportation Engineers

J

JEH	J. Edgar Hoover

L

LRT	Light Rail Transit
LOS	Level of Service

M

MARC	Maryland Area Regional Commuter
MDOT	Maryland Department of Transportation
MEV	million entering vehicles
M-NCPPC	Maryland National Capital Park and Planning Commission
mph	miles per hour
Maryland SHA	Maryland State Highway Administration
MTA	Maryland Transit Administration
MUTCD	Manual on Uniform Traffic Control Devices
MWCOG	Metropolitan Washington Council of Governments

N

NCHRP	National Cooperative Highway Research Program
NCPC	National Capital Planning Commission
NCR	National Capital Region
NEPA	National Environmental Policy Act

NFPA	National Fire Protection Association
O	
OPO	Old Post Office
P	
PHF	peak hour factor
PGC PD	Prince George's County Planning Department
R	
RDF	Remote Delivery Facility
RFDS	Reasonably Foreseeable Development Scenario
S	
SDDCTEA	Surface Deployment and Distribution Command Transportation Engineering Agency
SF	Square Foot
SOV	Single Occupant Vehicle
T	
TAZ	Transportation Analysis Zone
TDM	Travel Demand Management
TIA	Transportation Impact Assessment
TIP	Transportation Improvement Program
TRB	Transportation Research Board
TWSC	Two-way STOP-Controlled
U	
U.S.	United States
USDOJ	U.S. Department of Justice
V	
v/c	volume-to-capacity ratio
VC	Visitor Center
VDOT	Virginia Department of Transportation

VHT Vehicle hours of travel

W

WMATA Washington Metropolitan Area Transit Authority