U.S. FOOD AND DRUG ADMINISTRATION MUIRKIRK ROAD CAMPUS MASTER PLAN

Final Environmental Impact Statement

Appendix E – Transportation Impact Study

April 2023

Prepared by:

GSA

In cooperation with:

FDA U.S. FOOD & DRUG ADMINISTRATION

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Traffic Impact Study for
U.S. Food and Drug Administration
Muirkirk Road Campus Master Plan

General Services Administration

Stantec

February 2023

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PROJECT SUMMARY

INTRODUCTION

The U.S. General Services Administration (GSA), National Capital Region, on behalf of and in cooperation with the U.S. Food and Drug Administration (FDA), is engaging in a master planning effort for the Muirkirk Road Campus (MRC), located at 8301 Muirkirk Road, Laurel, MD, to consolidate additional FDA employees to the MRC. FDA owns 249 acres of land at Muirkirk Road, of which 197 acres is the West Parcel, which is bounded to the north by Muirkirk Road and residential properties; to the east by Odell Road and the MRC East Parcel; to the south by Odell Road, the Beltsville Information Management Center, and the Special Collection Service; and to the west by Ellington Drive. The MRC West Campus has a current population of 300 employees. The Master Plan will include additional office, laboratory, and shared use spaces to support a total population of 1,800 by 2040.

Proposed development would occur on the MRC West Campus and is anticipated to happen in three phases. The first phase would consist of the relocation of existing employees from an aging building on the site into an MOD 2 and a new annex building and is anticipated to be completed within the next three to five years. This phase would not generate any additional trips because it is a reassignment of existing employees within the campus.

Phase 2 is anticipated to occur around 2030 with the consolidation of additional employees from other leased office locations. The number of additional employees in this phase varies depending on the Master Plan action alternative selected. Action alternatives A and C would result in a total site population of 1,000 employees, while action alternative B (the preferred alternative) would result in a total site population of 468 employees.

The timing of additional employees to reach a total site population of 1,800 (Phase 3) is not known at this time but is assumed to be a gradual increase within a 20-to-30-year time frame with a horizon year of 2040 chosen as a benchmark for this analysis. The proposed action will result in an increase in vehicle trips to and from the MRC West Campus, particularly during the AM and PM peak commuter periods. Therefore, a Traffic Impact Study (TIS) is required to assess and report potential transportation impacts resulting from the planned growth on the MRC West Campus.

2021 EXISTING CONDITIONS

The existing roadway network within the vicinity of MRC West Campus was assessed to provide a baseline to compare to future conditions. Due to the COVID-19 pandemic, traffic volumes on the roadway network were much lower than what would be anticipated post-pandemic. In order to develop 2021 traffic volumes, field-collected data was compared to data obtained from existing pre-COVID count locations to develop factors in which to adjust the field-collected data to reflect anticipated 2021 volumes without the impacts of the pandemic. The study area intersections were analyzed utilizing Synchro 10/SimTraffic. The results of the capacity analysis show that all but two study area intersections operate at an overall level of service (LOS) D or better. The results also show that six out of the 13 study area intersections operate with one or more lane groups at LOS E or F in at least one peak hour.

PHASE 1 (2025)

Phase 1 of the MRC Master Plan calls for the relocation of approximately 61 employees from the existing BRF building, in the northeast corner of the MRC West Campus, to the MOD 2 building and a new 18,000 square-foot building that would be located adjacent to MOD 2. It is anticipated that this building would be constructed within the next three to five years. This relocation is occurring internally to the campus with employees that are already assigned to the MRC West Campus. Therefore, Phase 1 would not generate any additional vehicle trips on the study area roadway network and thus was not analyzed as part of this TIS.

PHASE 2 (2030) NO ACTION CONDITION

The 2030 No Action Condition evaluates the future transportation network with future volumes, excluding the planned consolidation of additional employees on the MRC West Campus. It includes traffic growth due to nearby developments, increases in background traffic, and future development and infrastructure enhancements recommended in the *Brickyard Traffic Impact Study* (2008) and *Konterra Town Center-East Traffic Impact Study* (2008), prepared by The Traffic Group, as well as *Bureau of Engraving and Printing Transportation Impact Study* (2020), prepared by Alliance Consulting Group. Under the 2030 No Action Condition, delay and queuing are anticipated to increase at 10 study area intersections. Seven out of the 13 study area intersections would operate with one or more lane groups at LOS E or F in at least one peak hour.

PHASE 3 (2040) NO ACTION CONDITION

The 2040 No Action Condition evaluates the future transportation network with future volumes, excluding the planned MRC West Campus expansion. It includes traffic growth due to nearby developments, increases in background traffic, and future development and infrastructure enhancements recommended in the *Brickyard Traffic Impact Study* (2008) and *Konterra Town Center-East Traffic Impact Study* (2008), prepared by The Traffic Group, as well as *Bureau of Engraving and Printing Transportation Impact Study* (2020), prepared by Alliance Consulting Group. Under the 2040 No Action Condition, delay and queuing are anticipated to increase at 11 study area intersections. Seven out of the 13 study area intersections would operate with one or more lane groups at LOS E or F in at least one peak hour.

Significant increases in delay and queueing would be anticipated at the unsignalized intersections of Muirkirk Road and Muirkirk Meadows Drive and Virginia Manor Road (MD 212/MD 206) and Ritz Way. However, it should be noted that MDOT SHA conducted a study in 2008 entitled *MD 201 Extended/US 1 Corridor Study* which proposed changes to several roadways within the study area. While the study was put on hold in 2008 and there are no current plans to renew the study, the recommendations, if eventually implemented, may result in better operations along US 1, Odell Road, and MD 201 than what is presented in this report.

PHASE 2 (2030) ACTION CONDITION

The 2030 Action Condition analyses examines future anticipated volumes, taking into consideration traffic under the 2030 No Action Condition as well as traffic that would be generated by the proposed increase in employees at the MRC West Campus. There are four Master Plan action alternatives, A, B, and C, that are included in the Environmental Impact Statement (EIS). Alternatives A and C

accommodates the same approximate number of employees in 2030 (approximately 700 additional employees) and have the same site access points. Therefore, Master Plan action alternatives A and C were evaluated as a single action alternative in this TIS. Master Plan action alternative B (the preferred alternative) has a lower number of additional employees projected by 2030 (approximately 168), and thus was analyzed separately. The Institute of Transportation Engineers (ITE) Trip Generation Manual, 11th Edition, was utilized to estimate the number of AM peak hour, PM peak hour, and total weekday trips that would be generated by the additional MRC West Campus employees. It should be noted that because of the COVID-19 pandemic, accurate driveway volume counts for existing employees on the site was not possible. Therefore, the 2030 Action Condition includes trips generated for all existing and proposed employees for each alternative.

A 50 percent non-single occupancy vehicle (SOV) trip credit was applied to the base trip generation rates in 2030 to estimate the anticipated vehicular trip generation from the proposed growth based on the goals established in the *Transportation Management Plan for U.S. Food and Drug Administration Muirkirk Road Campus Master Plan* (2022) (TMP) (Table E-1). The 50 percent non-SOV trip credit is based on the National Capital Planning Commission (NCPC) parking requirements of 1 parking space per two employees which would limit parking on the site, the TMP developed for the campus as part of the Master Plan analysis, and FDA's new post-pandemic teleworking policy, which allows many employees to continue to work from home most days.

Table E-1: Future Auto Trip Generation in Phase 2 (2030)

	Number of Employees	AM Peak Hour			PM Peak Hour			Total Daily
		In	Out	Tot	In	Out	Tot	
Existing (2021)	300	159	22	181	28	138	166	1,182
Phase 2: 2030 Action Alternatives A and C	1,000	399	55	454	69	335	404	2,951
With Non-SOV Mode Share Goal (50%)		**109**	200	28	227	35	168	202
Phase 2: 2030 Action Alternative B	468	217	30	247	39	191	230	1,657
With Non-SOV Mode Share Goal (50%)		**109**	**15**	**124**	**20**	**96**	**115**	**829**

A trip distribution analysis was conducted to estimate how the new vehicle trips would travel to and from the site. Employee home ZIP code data for employees that work in other offices within the DC area other than the MRC or the White Oak Campus was obtained from a 2017 survey conducted for FDA's White Oak Campus. The data indicated that most employees would likely arrive from points north and west of the MRC via I-95 and MD 200. The trip distribution also accounts for a proposed new access point on Odell Road.

The results of the capacity analysis for all Master Plan action alternatives show that the trips generated would increase movement delay by 10 or more seconds at six of the study area intersections when compared to the 2030 No Action Condition. Seven out of the 14 study area intersections would operate with one or more lane groups at LOS E or F in at least one peak hour. The results are similar between Master Plan action alternatives because most of the network delay is existing or would be generated by other large-scale developments, such as Konterra Town Center East.

PHASE 3 (2040) ACTION CONDITION

The 2040 Action Condition analyses examine future anticipated volumes, taking into consideration traffic under the 2040 No Action Condition as well as traffic that would be generated by the proposed growth of MRC West Campus employees. The number of total onsite employees (1,800) by 2040 is anticipated to be the same in all of the Master Plan action alternatives, and site access is similar between all action alternatives as well. Therefore, only one 2040 action condition is evaluated in this TIS. The ITE Trip Generation Manual, 11th Edition, was utilized to estimate the number of AM peak hour, PM peak hour, and total weekday trips that would be generated by the additional MRC West Campus employees. It should be noted that because of the COVID-19 pandemic, accurate driveway volume counts for existing employees on the site was not possible. Therefore, the 2040 Action Condition includes trips generated for all 1,800 employees. A 50 percent non-SOV trip credit was applied to the base trip generation rates in 2040 to estimate the anticipated vehicular trip generation from the proposed growth based on the goals established in the TMP (Table E-2). The 50 percent non-SOV trip credit is based on the National Capital Planning Commission (NCPC) parking requirements of 1 parking space per two employees which would limit parking on the site, the TMP developed for the campus as part of the Master Plan analysis, and FDA's new post-pandemic teleworking policy, which allows many employees to continue to work from home most days.

Table E-2: Future Auto Trip Generation in Phase 3 (2040)

	Number of Employees	AM Peak Hour			PM Peak Hour			Total Daily
		In	Out	Tot	In	Out	Tot	
Existing (2021)	300	159	22	181	28	138	166	1,182
Phase 3: 2040 Action Alternatives A, B, C	1,800	674	92	766	106	518	624	4,613
With Non-SOV Mode Share Goal (50%)		**337**	**46**	**383**	**53**	**259**	**312**	**2,307**

The results of the capacity analysis show that the trips generated would increase movement delay by 10 or more seconds at seven of the study area intersections when compared to the 2040 No Action Condition. Seven out of the 14 study area intersections would operate with one or more lane groups at LOS E or F in at least one peak hour.

PHASE 2/PHASE 3 ACTION CONDITION WITH MITIGATION

An Action with Mitigation Condition was created to help reduce the delay times for both the 2030 and 2040 project years. The 2030/2040 Action with Mitigation Condition provides mitigation measures at locations that would experience an increase in intersection delay of more than 10 seconds per vehicle and/or degradation of level of service to LOS E or F. The recommended mitigation measures include signal timing and coordination enhancements at all signalized intersections as well as physical improvements shown in the list below.

However, it should be noted that the proposed Action Condition only minimally increases delay at most of the critical study area intersections. Most of the intersections for which mitigation has been developed, with the exception of the intersection of Muirkirk Road and the MRC West Campus site driveway (Pasture Road), would experience significant delay and queuing in the No Action conditions. Thus, the mitigation measures are used to demonstrate what types of enhancements could improve operations at these intersections. The cost and responsibility for the mitigation

measures should not be solely placed on future projects associated with the MRC Master Plan. The intersections and associated mitigation measures are listed below:

PHASE 2 (2030) ACTION CONDITION (ALTERNATIVES A AND C) MITIGATION

- **Virginia Manor Road (MD 206)/Konterra Drive and Muirkirk Road:**
  - Provide a second southbound left-turn lane from Konterra Drive onto eastbound Muirkirk Road.
  - Provide a second westbound left-turn lane from Muirkirk Road onto southbound Muirkirk Road and eliminate the split phasing for the Muirkirk Road approaches.
- **Virginia Manor Road /Ritz Way (MD 212) and Virginia Manor Road (MD 206):**
  - Install a traffic signal that is coordinated with the other signals along Virginia Manor Road/Konterra Drive (MD 206). A roundabout could also be considered at this intersection but would require further investigation.
- **Muirkirk Road and Muirkirk Meadows Drive:**
  - Install a traffic signal that is coordinated with the other nearby traffic signals on Muirkirk Road.
- **Muirkirk Road and Old Baltimore Pike/Cedarhurst Drive:**
  - Construct separate right-turn only lane from eastbound Muirkirk Road to southbound Old Baltimore Pike.
- **Muirkirk Road and Pasture Road/Snowden Woods Road:**
  - Install a traffic signal at the intersection. A roundabout could also be considered at this location. However, this would warrant further investigation as additional right-of-way (ROW) may be required.
- **Powder Mill Road and Springfield Road:**
  - Install a traffic signal at this intersection and provide separate right and left-turn lanes on westbound and eastbound Powder Mill Road, respectfully. This is also a recommendation contained in the *Bureau of Engraving and Printing Transportation Impact Study* (2020), prepared by Alliance Consulting Group. It is assumed that this signal would be implemented as part of the Bureau of Engraving and Printing project.
- **Muirkirk Road/Crystal Plaza and Laurel Bowie Road (MD 197):**
  - Provide two northbound and southbound left-turn lanes from MD 197 to Muirkirk Road/Crystal Plaza.
  - Provide a second eastbound left-turn lane from Muirkirk Road to northbound MD 197.

PHASE 2 (2030) ACTION CONDITION (ALTERNATIVE B) MITIGATION

- **Virginia Manor Road (MD 206)/Konterra Drive and Muirkirk Road:**
  - Provide a second southbound left-turn lane from Konterra Drive onto eastbound Muirkirk Road.
  - Provide a second westbound left-turn lane from Muirkirk Road onto southbound Muirkirk Road and eliminate the split phasing for the Muirkirk Road approaches.
- **Virginia Manor Road /Ritz Way (MD 212) and Virginia Manor Road (MD 206):**

  - Install a traffic signal that is coordinated with the other signals along Virginia Manor Road/Konterra Drive (MD 206). A roundabout could also be considered at this intersection but would require further investigation.
- **Muirkirk Road and Muirkirk Meadows Drive:**
  - Install a traffic signal that is coordinated with the other nearby traffic signals on Muirkirk Road.
- **Muirkirk Road and Old Baltimore Pike/Cedarhurst Drive:**
  - Restripe the eastbound Muirkirk Road approach to consist of one left-turn lane, one through lane, and one right-turn only lane.
- **Muirkirk Road and Pasture Road/Snowden Woods Road:**
  - Install a traffic signal at the intersection. A roundabout could also be considered at this location. However, this would warrant further investigation as additional right-of-way (ROW) may be required.
- **Powder Mill Road and Springfield Road:**
  - Install a traffic signal at this intersection and provide separate right and left-turn lanes on westbound and eastbound Powder Mill Road, respectfully. This is also a recommendation contained in the *Bureau of Engraving and Printing Transportation Impact Study* (2020), prepared by Alliance Consulting Group. It is assumed that this signal would be implemented as part of the Bureau of Engraving and Printing project.

PHASE 3 (2040) ACTION CONDITION (ALTERNATIVES A, B, C) ADDITIONAL MITIGATION

- **Konterra Drive and MD 200 Off-Ramp:**
  - Provide a second eastbound right-turn lane from the MD 200 ramp onto southbound Konterra Drive.
- **Virginia Manor Road (MD 206)/Konterra Drive and Muirkirk Road:**
  - Provide a third southbound left-turn lane from Konterra Drive onto eastbound Muirkirk Road and construct a third receiving lane on Muirkirk Road that would become a right-turn only lane at Muirkirk Meadows Drive.
- **Muirkirk Road and Old Baltimore Pike/Cedarhurst Drive:**
  - Modify the southbound Cedarhurst Drive approach to consist of one shared through-right lane and one shared through-left lane.
- **Muirkirk Road/Crystal Plaza and Laurel Bowie Road (MD 197):**
  - Provide two northbound and southbound left-turn lanes from MD 197 to Muirkirk Road/Crystal Plaza (if not already constructed in Phase 2).
  - Provide a second eastbound left-turn lane from Muirkirk Road to northbound MD 197 (if not already constructed in Phase 2).

In addition to the above mitigation measures, it is also recommended that FDA continue to engage in the update of a TMP that outlines transportation demand management (TDM) strategies to reduce single-occupancy vehicle trips in order to achieve the NCPC parking ratio requirements. A recent TMP, attached in Appendix D, has been prepared for the MRC West Campus that provides a variety of policy, service, and infrastructure strategies, which are anticipated to reduce single-occupancy vehicle trips to and from the campus, which would help to mitigate the impacts to surrounding transportation network.

Additionally, the Konterra Town Center – East development, which was approved in 2009 but has since not been started, was included in this analysis. This development is anticipated to generate a significant number of trips. Therefore, prior to the implementation of any of the mitigation measures west of the US 1 corridor, the status of the Konterra Town Center development should be re-evaluated. It is likely that many of the mitigation measures would not be required if the Konterra Town Center development does not proceed.

Furthermore, this study was conducted during the COVID-19 pandemic. COVID-19 has significantly changed commute patterns, and it is anticipated that these changes may have a long-term impact, even after the pandemic is over, that may include an increased number of employees working from home, as well as a reluctance for people to use mass transit or ride in carpool or vanpool vehicles. Therefore, it is recommended that the intersections identified as requiring mitigation be re-evaluated in the future, at the time of permitting for the new office buildings proposed in the Master Plan, to determine if the mitigation recommendations are still applicable.

CONCLUSION

The results of this traffic analysis show that an increase of 1,500 employees at the MRC West Campus by 2040 would have a moderate adverse impact on traffic conditions in the study area. An overall increase in delay of 10 seconds or more would occur at seven of the 14 study area intersections. It should be noted that other nearby developments and background traffic growth will have a significant adverse impact on many of the study area intersections. Mitigation measures were considered at all study intersections to address operational deficiencies that are present in the No Action as well as the Action Alternative. As traffic spreads out on the network from the site, the impact of the trips on the network are less notable. Many of the impacts that are experienced on the intersections that are over a mile from the site are largely due to conditions under the No Action Condition. Thus, the full extent of the improvements needed in this area should not be solely attributable to future projects at the MRC West Campus. Furthermore, it is recommended that the intersections identified as requiring mitigation be re-evaluated in the future at the time of permitting for the new office buildings proposed in the Master Plan to determine if the mitigation recommendations are still applicable once the full impact of COVID-19's effects on travel behavior is understood, as well as to determine if the planned developments, such as Konterra Town Center – East, proceed.

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List of Acronyms

AADT	Annual Average Daily Traffic
AAWDT	Annual Average Weekday Traffic
BARC	Beltsville Agricultural Research Center
BEP	Bureau of Engraving and Printing
FDA	U.S. Food and Drug Administration
GIS	Geographic Information Systems
GSA	U.S. General Services Administration
GSF	Gross Square Footage
HCM	Highway Capacity Manual
ITE	Institute of Transportation Engineers
I-TMS	Internet Traffic Monitoring System
LOS	Level of Service
LUC	Land Use Code
MWCOG	Metropolitan Washington Council of Governments
MRC	Muirkirk Road Campus
NCPC	National Capital Planning Commission
NTS	Not to Scale
RTA	Regional Transportation Agency
SF	Square Feet
SHA	Maryland Department of Transportation State Highway Administration
SOV	Single Occupancy Vehicle
TDM	Transportation Demand Management
TMP	Transportation Management Plan
TIS	Traffic Impact Study
V/C	Volume to Capacity
VPD	Vehicles Per Day
WMATA	Washington Metropolitan Area Transit Authority

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CHAPTER 1: INTRODUCTION

The U.S. General Services Administration (GSA), National Capital Region (NCR), on behalf of and in cooperation with the U.S. Food and Drug Administration (FDA), is engaging in a master planning effort for the Muirkirk Road Campus (MRC), located at 8301 Muirkirk Road, Laurel, MD, to consolidate additional FDA employees to the MRC West Campus. The MRC West Campus consists of approximately 197 acres of an overall 249 acres of land owned by FDA along Muirkirk Road and Odell Road, with a current population of 300 employees (Figure 1). The Master Plan will include additional office, laboratory, and shared use spaces to support a total population of 1,800 by 2040.

Proposed development would occur on the MRC West Campus and is anticipated to happen in three phases. The first phase would consist of the relocation of existing employees from an aging building on the site into MOD 2 and a new building adjacent to MOD 2, which is anticipated to be completed within the next three to five years. This phase would not generate any additional trips because it is the reassignment of existing employees within the campus.

Phase 2 is anticipated to occur around 2030 with the consolidation of additional employees from other leased office locations. The number of additional employees in this phase varies depending on the Master Plan action alternative selected. Action alternatives A and C would result in a total site population of 1,000 employees, while action alternative B (the preferred alternative) would result in a total site population of 468 employees.

The timing of additional employees to reach a total site population of 1,800 (Phase 3) is not known at this time but is assumed to be a gradual increase within a 20-to-30-year time frame with a horizon year of 2040 chosen as a benchmark for this analysis. The proposed action will result in an increase in vehicle trips to and from the MRC West Campus, particularly during the AM and PM peak commuter periods. Therefore, a Traffic Impact Study (TIS) is required to assess and report potential transportation impacts resulting from the planned growth on the MRC West Campus.

This TIS will assess and evaluate the potential transportation impacts resulting from the proposed additional employees at the MRC West Campus for the 2030 and 2040 horizon years. The No Action Condition evaluates the future transportation network with future volumes, excluding growth at the MRC West Campus. It includes traffic growth due to nearby developments, increases in background traffic, and any future development and infrastructure enhancements recommended by other transportation agencies. The Action Condition examines future anticipated volumes on the study area roadway network, taking into consideration traffic volumes and infrastructure improvements under the No Action Condition, as well as traffic that would be generated by the relocation of employees to the MRC West Campus.

The Action Condition with Mitigation presents the results of additional analysis with roadway improvements and/or enhancements that would likely be required to address existing and future No Action congestion and queueing as well as mitigate the transportation impacts of the additional trips anticipated to be generated by the planned growth of the MRC West Campus for horizon years 2030 and 2040.

The report is divided into three sections. Chapter 1 provides an introduction to the project. Chapter 2 will discuss the transportation network and the capacity analysis conducted for the study. Chapter 3 will summarize the findings and conclusions. This TIS should also be reviewed in conjunction with the TMP that has been developed for the master planning effort, attached in Appendix D.

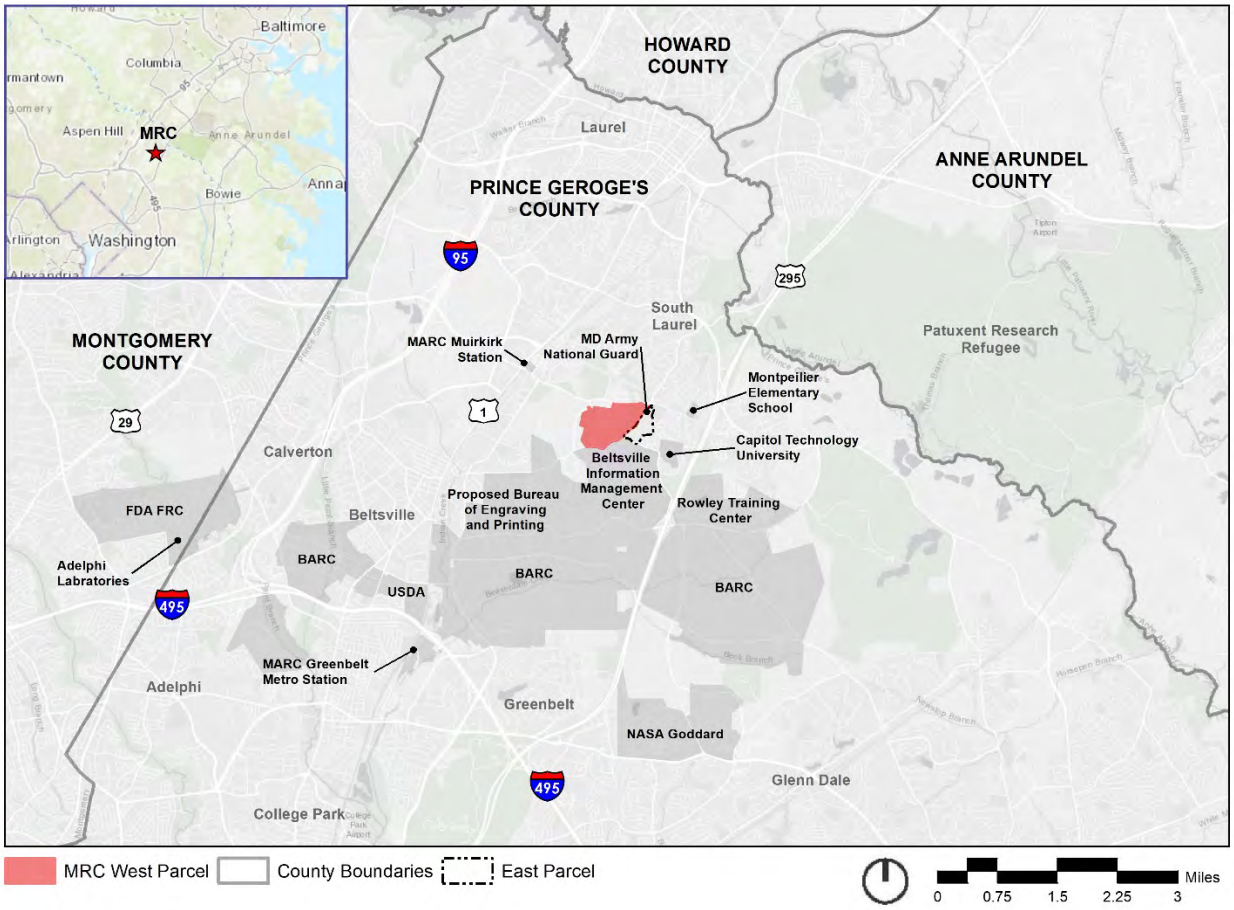

Figure 1: FDA Muirkirk Road Campus Regional Map

CHAPTER 2: TRANSPORTATION SYSTEM

This section describes the assessment of the existing transportation network and the potential transportation impacts resulting from the proposed increase of employees at the MRC West Campus.

The MRC West Campus is an FDA laboratory facility and is located on approximately 197 acres in an exurban area adjacent to the Beltsville Agricultural Research Center (BARC). The MRC West Campus currently consists of 480,000 gross square footage (GSF) of office and laboratory space, with 320 surface parking spaces, and has a current population of 300 FDA employees and support staff. The remaining areas of the campus outside of the buildings and parking areas are largely forested with some pasture areas for animals. Employee and visitor access is provided via a secured access on Muirkirk Road. Two driveways exist along Odell Road. However, the northern driveway is permanently closed and the southern driveway is exclusively used for deliveries.

The site is located approximately three miles east of I-95 and MD 200 and approximately 2.5 miles west of the Baltimore-Washington Parkway (Parkway). The MRC West Campus has limited transit connections. It is approximately 1.5 miles east of the Muirkirk Maryland Area Regional Commuter (MARC) station, and Regional Transportation Agency (RTA) Route 302 runs along Muirkirk Road and has an end-line stop at the Muirkirk Road entrance.

EXISTING CONDITIONS

This section describes the existing transportation facilities in the vicinity of the MRC West Campus, including traffic conditions and the availability of public transportation facilities.

EXISTING PUBLIC TRANSPORTATION FACILITIES

METRORAIL

The Washington Metropolitan Area Transit Authority (WMATA) Metrorail system connects downtown Washington, DC to the adjoining areas in Maryland and Virginia. Six lines, including the Red, Blue, Orange, Green, Yellow, and Silver, interconnect within Washington, DC. Prior to the COVID-19 pandemic, the Metrorail system operated from 5:00 AM to 11:30 PM Monday through Thursday, from 5:00 AM to 1:00 AM on Fridays, 7:00AM to 1:00 AM on Saturdays, and 8:00 AM to 11:00 PM on Sundays. Trains arrived approximately every six minutes during the peak hours and every twelve minutes at other times. During the COVID-19 pandemic, the Metrorail system operates from 5:00 AM to 11:00 PM on weekdays, 7:00 AM to 11:00 PM on Saturdays, and 8:00 AM to 11:00 PM on Sundays. Trains arrive approximately every six minutes during the peak hours and every twelve minutes at other times.

The campus is approximately 6.5 miles from the Greenbelt Metro station on Metrorail's Green Line. The Green Line operates between Branch Avenue and Greenbelt in Prince George's County and has 21 stations and three transfer points to other Metrorail lines (Figure 2: Metrorail System Map (Source: WMATA)). The line runs along the same path as the Yellow Line from L'Enfant Plaza to Fort Totten at all times, and from L'Enfant Plaza to Greenbelt only during rush hours. The line operates at an 8- to 12-minute headway during weekdays and Saturdays, a 15-minute headway on

Sundays, and 20-minute late-night headways. The Greenbelt station, the closest station to the MRC West Campus, has 3,875 parking spaces, 81 bike racks, 38 lockers, and numerous bus service connections, including Regional Transportation Agency of Central Maryland (RTA) Bus 302 to Laurel which stops at the MRC West Campus driveway on Muirkirk Road.

Figure 2: Metrorail System Map (Source: WMATA)

MARC

The MARC train system connects downtown Washington, DC and Baltimore, Maryland to adjoining areas in Maryland. Three lines, including the Brunswick, Camden, and Penn, interconnect within Washington, DC.

The Muirkirk station, approximately 1.5 miles from the MRC West Campus, is located along the Camden Line, indicated in orange in Figure 3, below. Camden Line service operates from 6:00 AM to 9:00 AM and from 3:30 PM to 9:00 PM on weekdays only. There is no weekend nor off-peak service. Trains arrive approximately every 30 minutes. Bus service to the station is provided through RTA Route 302 which stops at the station every hour on weekdays. The Muirkirk station has approximately 650 parking spaces.

Figure 3: MARC Rail System with Commuter Buses (Source: MDOT)

BUS

WMATA Bus Route 89M services the study area with connections to the South Laurel Park-and-Ride Lot and to the Greenbelt Metrorail station. The bus stop is located within the overall study area on Ritz Way west of Baltimore Avenue, south of Muirkirk Road. Buses arrive approximately every 30 minutes during peak times and approximately every hour during weekday off-peak times. There is no service on weekends. The nearest stop is approximately two miles from the MRC West Campus.

As shown in Figure 4, the MRC West Campus (labeled as FDA Muirkirk Campus) is served by RTA Route 302. Route 302 operates at approximately one-hour headways and provides local service that connects the Towne Centre at Laurel to the Greenbelt Metro station.

Figure 4: RTA Route 302 Route Map (NTS)

PEDESTRIAN AND BICYCLE FACILITIES

The MRC West Campus has limited pedestrian facilities and no bicycle facilities on site. Onsite pedestrian facilities mainly consist of sidewalks around buildings and between buildings and the parking areas. There are no sidewalk connections between MODs 1 and 2, the two primary buildings on campus that house most of the staff and laboratory space, and the Beltsville Research Facility or the Animal Research Facility. In addition, there is no pedestrian sidewalk connection to the bus stop on Muirkirk Road. Curb ramps are provided along pedestrian facilities throughout the site; however, many do not meet current ADA accessibility standards.

Furthermore, there are no sidewalk or bicycle lane connections to the campus on the surrounding roadway network. Sidewalks are provided along the western part of Muirkirk Road from Virginia Manor Road to Old Baltimore Pike, as well as along the eastern portion of Muirkirk Road from Mount Pleasant Drive to MD 197. The lack of pedestrian and bicycle facilities connecting to the MRC West Campus is a significant barrier to pedestrian and bicycle commuting. However, the campus is also relatively isolated, and is not close to major transit or higher-density residential areas that could generate pedestrian and bicycle commuting trips.

Similar to on-site accessibility, there are curb ramps at intersections where sidewalk is provided. However, many appear to not meet current ADA standards. Therefore, wherever new or improved on or off-site infrastructure is provided, it should meet ADA accessibility standards that are in place at the time of design.

EXISTING ACCESS AND PARKING

Primary access for visitors and employees is provided by a gated driveway (Pasture Road) on Muirkirk Road. The driveway intersects with Muirkirk Road at an unsignalized intersection that also includes Snowden Woods Road (Figure 5). Separate left and right-turn lanes are provided on Muirkirk Road at the intersection.

There are also two access points on Odell Road. The northernmost access, located adjacent to the Beltsville Research Facility, is not active and the gate is permanently locked (Figure 6). The southernmost access to Pasture Drive is only used for employees with special access to the animal pasture area of the campus as well as for deliveries and emergency access (Figure 7). No turn lanes are provided on Odell Road at this location.

Figure 5: Primary Access on Muirkirk Road

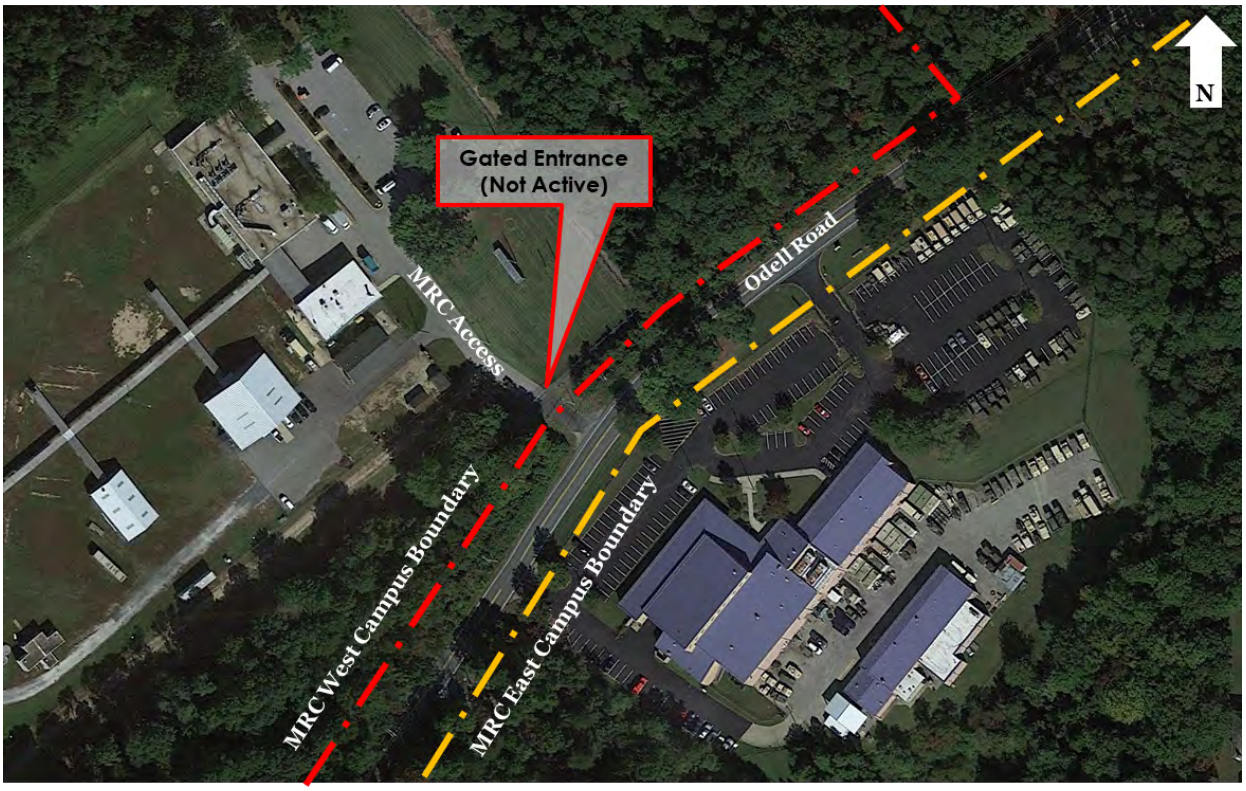

Figure 6: Northern Odell Road Access (Closed)

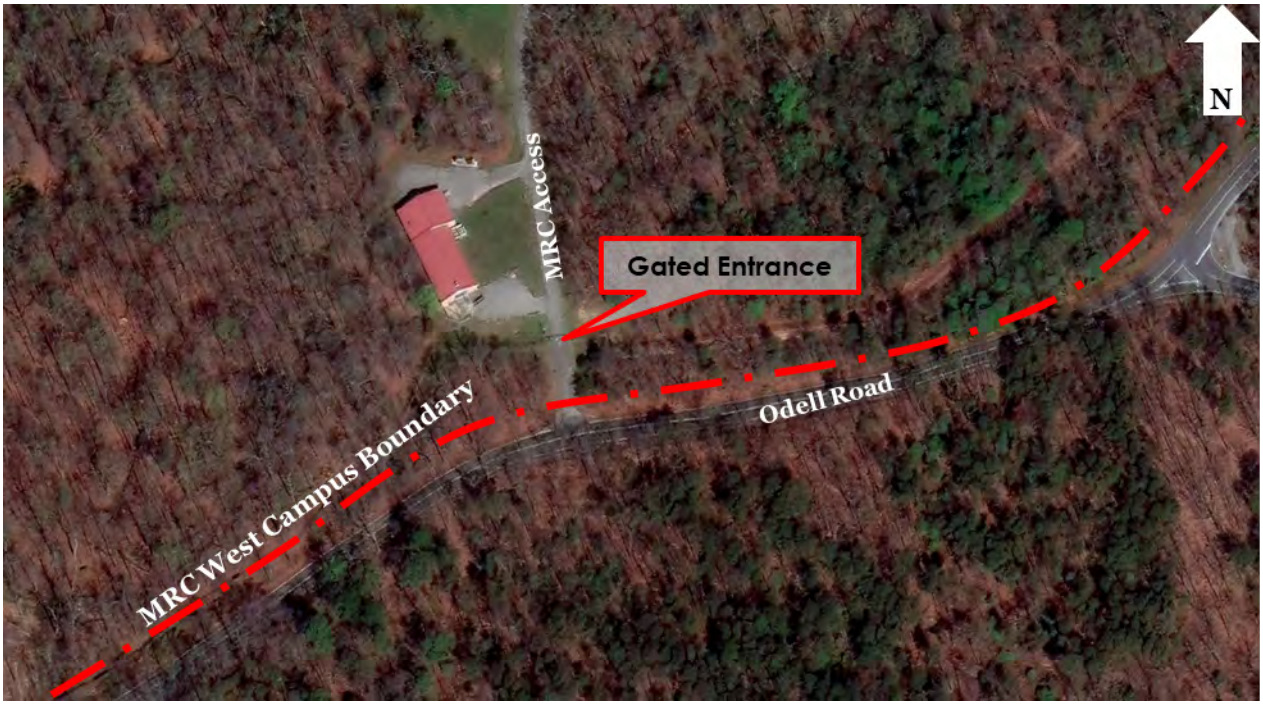

Figure 7: Southern Odell Road Access

Parking is not regulated at the MRC West Campus. Approximately 283 spaces serve the MOD 1 and MOD 2 Buildings, accessed through the main gate on Muirkirk Road. MOD 1 and MOD 2 are two buildings that serve as the primary laboratory and staff office space on the campus. They are located south of the main entrance from Muirkirk Road A separate 37-space parking lot is provided for the Beltsville Research Facility on the east side of the campus, accessed via a gate on Odell Road. The locations of the buildings and parking areas and their approximate capacities are shown in Figure 8.

It should also be noted that the Animal Research Facility and pasture areas on the south side of the campus have areas that can be used for loading or parking near the buildings. However, these areas are only accessible to the staff that is specifically assigned to these areas. Although many of the buildings have pavement around them that can be used for loading or parking, there are no striped parking spaces. Therefore, these areas are not considered as part of the overall total on-site parking count.

Figure 8: Building and Surface Parking Locations

EXISTING ROADWAY NETWORK

The vehicle study area for the MRC West Campus TIS is located primarily in Laurel which is in Prince George's County, Maryland. The vehicle study area limits are defined as primarily bounded by Muirkirk Road to the north, Powder Mill Road to the south, Laurel Bowie Road (MD 197) the east, and Virginia Manor Road (MD 206)/Konterra Drive to the west. Figure 9 shows the 13 existing intersections that were included in the capacity analysis.

Figure 9: TIS Study Area

Characteristics of the major corridors within the study area were obtained from the Maryland Annual Average Daily Traffic – Annual Average Daily Traffic (SHA Statewide AADT Lines) map[1] through the Maryland Geographical Information Services (GIS) Data Catalog denoting functional classification, 2018 AADT, 2018 Annual Average Weekday Traffic (AAWDT), 2018 Truck AADT, and number of lanes. This information is summarized in Table 1.

[1] https://data.imap.maryland.gov/datasets/maryland-annual-average-daily-traffic-annual-average-daily-traffic-sha-statewide-aadt-lines?geometry=-77.495%2C38.744%2C-76.440%2C38.932

Table 1: Study Area Major Corridor Characteristics

Roadway	Functional Class	2018 AADT (1,000 vehicles per day, vpd)	2018 AAWDT (1,000 vpd)	2018 Truck AADT (vpd)	Number of Lanes
Muirkirk Road (east of Old Baltimore Pike)	Minor Arterial	10.7	11.5	297	Varies (2-4)
Muirkirk Road (west of Old Baltimore Pike)	Minor Arterial	23.1	24.7	905	Varies (2-4)
Virginia Manor Road	Major Collector	10.4	11.0	N/A	Varies (4-6)
MD 212 (Ritz Way)	Minor Arterial	17.1	18.3	531	6
MD 197	Principal Arterial Other	50.1	53.6	N/A	6
Konterra Drive	Major Collector	13.7	14.5	N/A	4
WB MD 200 On-Ramp	Principal Arterial Other Freeways	2.0	2.1	N/A	2
EB MD 200 Off-Ramp	Principal Arterial Other Freeways	2.8	3.0	N/A	2
Old Baltimore Pike	Minor Arterial	16.0	17.1	1720	2
Powder Mill Road	Minor Arterial	12.0	12.8	N/A	2

DATA COLLECTION AND HOURS OF ANALYSIS

At the time of this analysis, the global community was experiencing the effects of the COVID-19 pandemic which has significantly impacted typical traffic conditions. Therefore, a traditional traffic count data program was not possible. The project team reviewed historic traffic count data on the Maryland Department of Transportation State Highway Administration (SHA) Internet Traffic Monitoring System (I-TMS), as well as from other previous traffic studies. However, data was not available for all study area intersections, and some of the data exceeded ten years. Therefore, in coordination with Prince George's County, a data collection plan was developed. The plan consisted of collecting turning movement count data at all study intersections, listed in Table 2. Pre-pandemic ATR and TMC data was then obtained from I-TMS and compared to the 2021 counts to calculate the percent difference between pre-pandemic volumes and the 2021 volumes. The percent difference was then used to develop factors in which to increase the 2021 field data to a pre-COVID condition. Three factors were developed to reflect the different functional classification of each major study roadway as well as the type of commuting pattern each experience. As regional routes, US 1 and MD 197 would not have seen as great impact on typical traffic as other routes. However, a local road such as Muirkirk Road, would have experienced a greater decrease in traffic volumes due to the highly residential nature of the area and the fact that most MRC West Campus staff was working remotely. These factors are summarized in Table 3.

Table 2: Study Area Intersections

Study Area Intersection	Signalization
Konterra Drive & MD 200 On-Ramp	Signalized
Konterra Drive & Md 200 Off-Ramp	Signalized
Virginia Manor Road/ Konterra Drive & Muirkirk Road	Signalized
Virginia Manor Road/ Ritz Way (MD 212) & Virginia Manor Road	Unsignalized
Muirkirk Meadows Drive & Muirkirk Road	Unsignalized
Brickyard Boulevard/ Driveway) & Muirkirk Road	Signalized
Old Baltimore Pike/ Cedarhurst Drive & Muirkirk Road	Signalized
Pasture Road/ Snowden Woods Road & Muirkirk Road	Unsignalized
Odell Road/ Cedarbrook Lane & Muirkirk Road	Signalized
Laurel Bowie Road (MD 197) & Murirkirk Road/ Crystal Plaza Driveway	Signalized
Odell Road & Springfield Road	Unsignalized
Odell Road & Ellington Drive	Unsignalized
Powder Mill Road & Springfield Road	Unsignalized

Table 3: Intersection COVID-19 Factors

Location	Pre-Pandemic Volume		2021 Volume		Adjustment Factor		Study Area Intersection to which Factor was applied
	AM	PM	AM	PM	AM	PM	
Muirkirk Road near Odell Road/Cedarbrook Lane (ATR)	1022	1130	404	641	2.5	1.8	Odell Road & Springfield Road Odell Road & Ellington Drive Powder Mill Road & Springfield Road Odell Road/ Cedarbrook Lane & Muirkirk Road Pasture Road/ Snowden Woods Road & Muirkirk Road
Muirkirk Road near Muirkirk Meadows Drive (ATR)	2316	2187	1037	1383	2.2*	1.4*	Konterra Drive & MD 200 On-Ramp Konterra Drive & Md 200 Off-Ramp Virginia Manor Road/ Konterra Drive & Muirkirk Road Virginia Manor Road/ Ritz Way (MD 212) & Virginia Manor Road Muirkirk Meadows Drive & Muirkirk Road Brickyard Boulevard/ Driveway) & Muirkirk Road Old Baltimore Pike/ Cedarhurst Drive & Muirkirk Road
MD 206 at MD 212 (TMC)	2650	1911	1254	1467			
MD 197 at Muirkirk Road (TMC)	4410	5152	2496	3633	1.8	1.4	Laurel Bowie Road (MD 197) & Murirkirk Road/ Crystal Plaza Driveway

*Due to the close proximity of these two intersections, the percentage difference was averaged to create a factor for this area.

Appendix B contains the raw count data and map of all the count locations. An analysis of the data revealed that the individual intersection AM and PM peak period hours varied throughout the study area. An AM peak hour of 7:15-8:15 AM and a PM peak hour of 4:00-5:00 PM were utilized. Volumes were balanced upwards between intersections, where appropriate, to account for the various time periods that the data was collected. The balanced 2021 existing volumes with the COVID-19 factors applied are shown in Exhibits 1 and 2 in Appendix A.

Furthermore, the COVID-19 pandemic also affected the ability for the project team to collect other existing conditions data, such as travel time runs and queue length measurements. However, based on anecdotal information obtained by the project team for the study area, the signalized intersection of Muirkirk Road and MD 197 was the only intersection that regularly experienced high delays in the existing condition, and the delay is primarily on Muirkirk Road as well as the northbound MD 197 left-turn lane to Muirkirk Road. In addition, the unsignalized intersections of Muirkirk Road and Muirkirk Meadows Drive and Virginia Manor Road (MD 212/206) and Ritz Way (MD 212) were also noted to experience delay during the peak periods on the stop-controlled approaches. Therefore, the project team ensured that the capacity analysis results reflected these conditions.

ANALYSIS METHODOLOGY

Synchro 10 traffic analysis software was used to perform the capacity analyses for the signalized and unsignalized intersections in the study area. This software package provides average control delay, volume-to capacity ratio (v/c) queues, and LOS for each lane group and for the overall intersection.

The v/c ratio relates the demand at a particular intersection (traffic volume, v) to the available capacity (c). The available capacity for each movement varies depending on number of lanes, lane width, perception/reaction time, green time, and cycle length, among others. A v/c ratio of 1.0 indicates that the demand for a particular movement is equal to the capacity. A movement with a v/c ratio at or over 1.0 is considered undesirable because the movement volume exceeds the capacity, which results in queuing, indicating unmet demand along that approach.

LOS is an evaluation of the quality of operation of an intersection and is a measure of the average delay a driver experiences while traveling through the intersection. LOS is dependent on a range of defined operating conditions such as traffic demand, lane geometry, and traffic signal timing and phasing.

LOS can range from A to F and is based on the average control delay per vehicle in seconds. For a signalized intersection, LOS A indicates operations with an average control delay less than 10 seconds per vehicle, while LOS F describes operations with an average control delay in excess of 80 seconds per vehicle. For an unsignalized intersection, LOS A indicates operations with an average control delay less than 10 seconds per vehicle, while LOS F describes operations with an average control delay in excess of 50 seconds per vehicle. The delay criteria for signalized and unsignalized intersections are summarized in Table 4.

Table 4: LOS Thresholds

Level of Service	Average Control Delay (seconds/vehicle)	
	Signalized	Unsignalized
A	Less than or equal to 10.0	Less than or equal to 10.0
B	>10.0 and ≤20.0	>10.0 and ≤15.0
C	>20.0 and ≤35.0	>15.0 and ≤25.0
D	>35.0 and ≤55.0	>25.0 and ≤35.0
E	>55.0 and ≤80.0	>35.0 and ≤50.0
F	Greater than 80.0 or v/c greater than 1.0	Greater than 50.0 or v/c greater than 1.0
Source: Highway Capacity Manual, 6th Edition		

2021 EXISTING CONDITIONS CAPACITY ANALYSIS RESULTS

2021 Existing Condition volumes for the AM and PM peak hours, shown in Exhibits 1 and 2 in Appendix A, were modeled in Synchro 10 to produce capacity analysis results, summarized in Exhibits 30 and 31 in Appendix A. All Synchro capacity analysis output is in Appendix C. The results show that most intersections currently operate at an overall LOS D or better. Table 5 indicates the lane groups that would operate at LOS of E or F (failing condition) as well as shows overall intersection LOS. The table also notes delay in seconds per vehicle. Figure 10 also illustrates overall intersection LOS for each peak hour on a map.

Table 5: 2021 Existing Condition
Lane Groups Operating at Overall LOS E or F
Overall Intersection LOS

Intersection	Lane Group	Existing Condition	
		AM	PM
Konterra Drive & MD 200 On-Ramp	Intersection	A (9.9)	A (8.1)
Konterra Drive & MD 200 Off-Ramp	Intersection	B (17.5)	A (6.5)
Virginia Manor Road/Konterra Drive & Muirkirk Road	SB-L	F (146.9)	-
	Intersection	E (57.9)	B (18.3)
Virginia Manor Road/Ritz Way (MD 212) & Virginia Manor Road	SB-L	F (374.0)	F (113.5)
	Intersection	E (39.3)	B (13.2)
Muirkirk Meadows Drive & Muirkirk Road	NB-LTR	F (285.0)	F (86.7)
	SB-LTR	F (791.7)	F (142.7)
	Intersection	C (15.3)	A (6.3)
Brickyard Boulevard/Driveway & Muirkirk Road	Intersection	A (9.4)	A (7.4)
Old Baltimore Pike/ Cedarhurst Drive & Muirkirk Road	NB-L	E (57.5)	-
	Intersection	C (26.3)	C (28.1)
Pasture Road/Snowden Woods Road & Muirkirk Road	Intersection	A (0.9)	A (1.0)
Odell Road/Cedarbrook Lane & Muirkirk Road	Intersection	B (13.6)	B (19.6)
Laurel Bowie Road (MD 197) & Muirkirk Road/Crystal Plaza Driveway	EB-L	E (78.1)	F (82.0)
	EB-LT	E (76.6)	E (78.4)
	WB-LT	F (84.5)	F (99.3)
	NB-L	F (128.5)	F (117.3)
	SB-L	E (76.8)	F (82.6)
	Intersection	D (43.5)	D (50.8)
Odell Road & Springfield Road	Intersection	A (7.1)	A (6.8)
Odell Road & Ellington Drive	Intersection	A (4.6)	A (3.5)
Powder Mill Road & Springfield Road	SB-LR	E (45.9)	F (57.1)
	Intersection	A (7.9)	D (12.8)

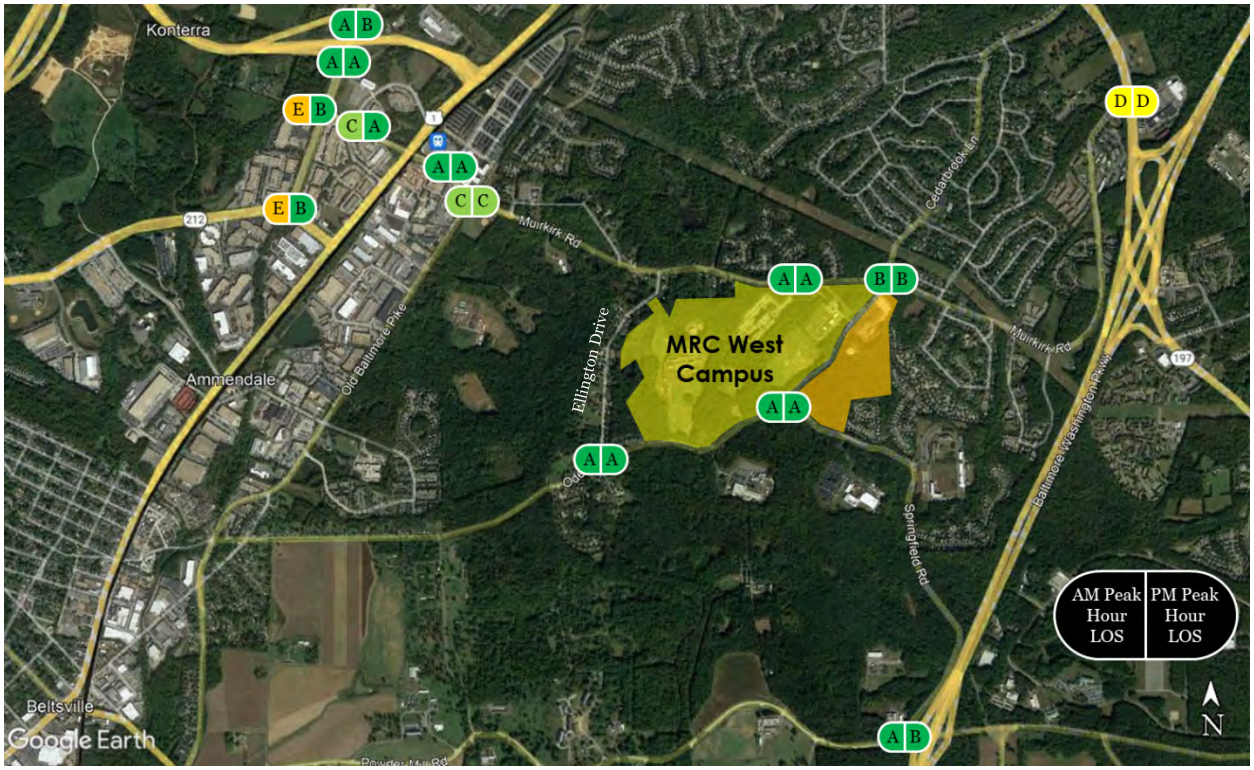

Figure 10: 2021 Existing Condition Overall Intersection LOS

TRANSPORTATION IMPACTS

Based on information provided by GSA and FDA, it was assumed that the Master Plan would be implemented in in three phases. The first phase would consist of the relocation of existing employees from an aging building on the site into other buildings on the same site and is anticipated to be completed within the next three to five years. Since Phase 1 consists of internal relocations of employees and would not generate additional trips, it was not analyzed in this TIS.

Phase 2 is the first phase that would result in additional employees being consolidated on the campus. Under Master Plan action alternatives A and C, Phase 2 would result in approximately 700 additional employees on campus for a total site population of 1,000 by 2030. Under Master Plan action alternative B (the preferred alternative), Phase 2 would result in an additional 168 employees on campus for a total site population of 468 by 2030. Therefore, this TIS analyzes one 2030 Action Condition for alternatives A and C, and one 2030 Action Condition for alternative B.

Phase 3 is anticipated to be the final phase of growth to reach an ultimate site population of 1,800 employees. All of the Master Plan action alternatives have a total site population of 1,800 in this phase. Therefore, only one 2040 Action Condition was analyzed in this TIS that would represent the potential impacts across all four of the Master Plan action alternatives.

PHASE 1 (2025)

Phase 1 of the MRC Master Plan consists of the relocation of approximately 61 employees from the existing BRF building, which is aging and is no longer meeting the needs of FDA staff, to a new building that would be constructed adjacent to MOD 2. The new building would be approximately 18,000 square feet and would support the staff relocating from the BRF. As this is a relocation of existing on-site staff from one area of the campus to another, it would not generate additional vehicle trips on the study area roadway network. Therefore, Phase 1 is not analyzed in this TIS.

PHASE 2/PHASE 3 (2030/2040) NO ACTION CONDITION

Utilizing information provided by the Metropolitan Washington Council of Governments (MWCOG), a population growth rate in Prince George's County of approximately 6.5 percent is anticipated between 2020 and 2040, which equates to an annual growth rate of 0.325 percent Over this same time period, the employment projections show a growth of 12.7 percent or 0.635 percent per year. Therefore, an average background growth rate of 0.5 percent per year on the study area roadway network was applied.

BACKGROUND DEVELOPMENTS

Three planned developments were identified within the project area that would impact the study area intersections. These planned developments include Konterra Town Center – East, The Brickyard, and the Bureau of Engraving and Printing (BEP).

Konterra Town Center is a proposed mixed-use development located on the northern portion of Konterra Drive, north of the Konterra Drive and MD-200 On-Ramp intersection, and will consist of 4,500 residential units, 600 hotel rooms, 1,500,000 square feet (SF) of retail space, and 3,800,000 SF of office space. Trip generation and trip distribution information for the development was available in a report entitled *Traffic Impact Analysis for Preliminary Plan of Subdivision #4-07108, Prince George's County, Maryland*, prepared by The Traffic Group and dated June 19, 2008. The project is separated into two phases, which Stantec has accommodated into the two project action years. The first phase, which was projected to be completed in 2010, is estimated to produce 2,585 total trips in the AM peak hour and 4,461 total trips in the PM peak hour. The second phase, which was projected to be completed in 2030, is estimated to produce 3,779 total trips in the AM peak hour and 6,253 total trips in the PM peak hour. The 2030 trip generation for the development can be seen in Exhibits 3 and 4, and 2040 trip generation for the development can be seen in Exhibits 13 and 14 in Appendix A. It should be noted that the Konterra site is located to the north of the study area on Virginia Manor Road. The trip distribution assumes that a direct connection to the ICC is in not in place for Phase I, but is in place for Phase II. Therefore, not all site-generated trips would enter the MRC West Campus study area.

It should be noted, however, that the proposed Konterra Town Center – East was approved in 2009 but as of 2022, nothing has been constructed, and there is no clear plan for completion. Therefore, consideration needs to be given to removing the potential impact of this development from future MRC-related traffic analyses if a new development schedule for the Konterra Town Center is not available. For the purposes of this analysis Phase I of the Konterra Town Center was incorporated into the 2030 No Action Condition traffic analysis, while Phase II was incorporated into the 2040 No Condition traffic analysis.

The second planned development, called The Brickyard, was identified that would have an impact on the existing roadway network within the study area. The Brickyard is a proposed residential development, consisting of condominiums and townhomes, located along Brickyard Boulevard, north of the Brickyard Boulevard and Muirkirk Road intersection. Trip generation and trip distribution information for the development was available in a report entitled *Letter Report for Preliminary Plan Subdivision #4-07053, Prince George's County, Maryland*, prepared by The Traffic Group and dated January 29, 2008. The project is mostly complete (originally estimated to be complete in 2012), and the trips associated with the development were accounted for in the turning movement count data (Appendix B), with the exception of approximately 218 units. ITE Land Use Code (LUC), Multifamily Housing (Low-Rise) was utilized to estimate that the additional 218 would produce 100 total trips in the AM peak hour and 118 total trips in the PM peak hour. The trip distribution and generation for the development can be seen in Exhibits 5 through 8 in Appendix A. These trips were incorporated into the 2030 No Action Condition volumes.

The final planned development, called bureau of Engraving and Printing, is anticipated to have a slight impact on the existing roadway network within the study area. The BEP would be located along Powder Mill Road, southwest of the Powder Mill Road and Springfield Road intersection. Trip generation and trip distribution information for the development was available in a report entitled *Bureau of Engraving and Printing Transportation Impact Study*, prepared by Alliance Consulting Group and dated June 2020. The only intersection that this TIS examines that overlaps with this study is at the intersection of Powder Mill Road and Springfield Road. The report estimates 365 additional westbound trips for the through movement in the AM peak hour and 366 additional eastbound trips for the through movement in the PM peak hour at this intersection beginning in 2029, the full implementation year. The trip generation for the development can be seen in Exhibits 9 and 10 in Appendix A. These trips were incorporated into the 2030 No Action Condition volumes.

PLANNED INFRASTRUCTURE

Prince George's County and SHA staff were contact during the project scoping to identify any planned infrastructure improvements in the study area that were not part of the developments discussed above. MDOT SHA noted that a 2008 study entitled, MD 201 Extended/US 1 Corridor Study, proposed changes to several roadways within the study area. This included widening MD 201 from Cherrywood Lane to Odell Road, widening US 1 from four to six lanes, and transportation systems management/transportation demand management improvements and strategies, medians, bicycle lanes, and pedestrian accommodations, where feasible. The MDOT SHA placed this study on hold in 2008 pending the identification of funding to complete planning and subsequent phases; however, the project was never restarted. Therefore, the improvements associated with this study were not included in the No Action condition.

PHASE 2 (2030) NO ACTION CONDITION CAPACITY ANALYSIS RESULTS

The projected volumes obtained by applying the growth rates to the 2021 volumes were added to the site-specific trip generation conducted for the three developments to develop 2030 No Action Condition volumes for the AM and PM peak hours, shown in Exhibits 11 and 12 in Appendix A. These volumes were modeled in Synchro 10 to produce capacity analysis results, summarized in Exhibits 30 and 31 in Appendix A.

All Synchro capacity analysis outputs are located in Appendix C.

The results show that nine intersections would continue to operate at an overall LOS D or better, while four would operate at LOS E or F in one or both peak hours. Table 6 shows the lane groups at study intersections that would operate at an overall LOS E or F (failing condition), as well as overall intersection LOS. Overall intersection delay in seconds per vehicle is noted in parentheses. Figure 11 also illustrates overall intersection LOS for each peak hour on a map.

Table 6: Phase 2 No Action Condition
Lane Groups Operating at Overall LOS E or F
Overall Intersection LOS

Intersection	Lane Group	2030 No Action Condition	
		AM	PM
Konterra Drive & MD 200 On-Ramp	Intersection	A (8.0)	A (5.6)
Konterra Drive & MD 200 Off-Ramp	Intersection	C (22.0)	B (19.9)
Virginia Manor Road/Konterra Drive & Muirkirk Road	WB-R	-	F (50.3)
	SB-L	F (298.0)	F (245.8)
	Intersection	F (109.4)	F (89.9)
Virginia Manor Road/Ritz Way (MD 212) & Virginia Manor Road	SB-L	F (*)	F (*)
	Intersection	F (*)	F (*)
Muirkirk Meadows Drive & Muirkirk Road	NB-LTR	F(*)	F (*)
	SB-LTR	F (*)	F (*)
	Intersection	F (*)	F (*)
Brickyard Boulevard/Driveway & Muirkirk Road	Intersection	B (10.5)	A (8.5)
Old Baltimore Pike/Cedarhurst Drive & Muirkirk Road	NB-L	F (72.0)	F (65.7)
	Intersection	C (30.4)	C (32.3)
Pasture Road/Snowden Woods Road & Muirkirk Road	NB-L	-	E (44.2)
	Intersection	A (1.1)	A (1.4)
Odell Road/Cedarbrook Lane & Muirkirk Road	Intersection	B (13.9)	C (20.8)
Laurel Bowie Road (MD 197) & Muirkirk Road/Crystal Plaza Driveway	EB-L	E (79.0)	F (83.6)
	EB-LT	E (76.9)	E (79.9)
	WB-LT	F (86.2)	F (104.5)
	NB-L	F (143.4)	F (128.5)
	SB-L	E (76.9)	F (84.1)
	Intersection	D (46.5)	D (54.6)
Odell Road & Springfield Road	Intersection	A (7.0)	A (6.9)
Odell Road & Ellington Drive	Intersection	A (4.6)	A (3.5)
Powder Mill Road & Springfield Road	SB-LR	F (453.3)	F (529.6)
	Intersection	F (62.6)	F (93.6)
* Delay exceeds calculable values in HCM 6th Edition.			

Figure 11: Phase 2 No Action Condition Overall Intersection LOS

PHASE 3 (2040) NO ACTION CONDITION CAPACITY ANALYSIS RESULTS

The projected volumes obtained by applying the growth rates to the 2021 volumes were added to the site-specific trip generation conducted for the three developments to develop 2040 No Action Condition volumes for the AM and PM peak hours, shown in Exhibits 15 and 16 in Appendix A. These volumes were modeled in Synchro 10 to produce capacity analysis results, summarized in Exhibits 30 and 31 in Appendix A.

All Synchro capacity analysis outputs are located in Appendix C.

The results show that eight intersections would continue to operate at an overall LOS D or better, while five would operate at LOS E or F in one or more peak hours. Table 7 indicates the lane groups at study intersections that would operate at an overall LOS of E or F (failing condition), as well as overall intersection LOS. Overall intersection delay in seconds per vehicle is noted in parentheses. Figure 12 also illustrates overall intersection LOS on a map.

Table 7: Phase 3 No Action Condition
Lane Groups Operating at Overall LOS E or F
Overall Intersection LOS

Intersection	Lane Group	2040 No Action Condition	
		AM	PM
Konterra Drive & MD 200 On-Ramp	Intersection	A (8.8)	A (6.2)
Konterra Drive & MD 200 Off-Ramp	Intersection	C (24.3)	B (20.0)
Virginia Manor Road/Konterra Drive & Muirkirk Road	WB-R	F (53.6)	F (57.7)
	SB-L	F (345.6)	F (288.9)
	Intersection	F (128.3)	F (104.5)
Virginia Manor Road/Ritz Way (MD 212) & Virginia Manor Road	SB-L	F (*)	F (*)
	SB-R	F (*)	F (*)
	Intersection	F (6*)	F (*)
Muirkirk Meadows Drive & Muirkirk Road	NB-LTR	F (*)	F (*)
	SB-LTR	F (*)	F (*)
	Intersection	F (*)	F (*)
Brickyard Boulevard/Driveway & Muirkirk Road	Intersection	B (10.9)	A (8.3)
Old Baltimore Pike/Cedarhurst Drive & Muirkirk Road	NB-L	F (91.1)	F (82.6)
	Intersection	D (35.7)	D (37.6)
Pasture Road/Snowden Woods Road & Muirkirk Road	NB-L	-	F (50.7)
	SB-LTR	-	E (37.1)
	Intersection	A (1.2)	A (1.6)
Odell Road/Cedarbrook Lane & Muirkirk Road	Intersection	B (14.3)	C (22.3)
Laurel Bowie Road (MD 197) & Muirkirk Road/Crystal Plaza Driveway	EB-L	E (79.7)	F (84.4)
	EB-LT	E (77.4)	F (81.3)
	WB-LT	F (88.3)	F (116.1)
	NB-L	F (162.4)	F (144.5)
	SB-L	E (76.7)	F (86.6)
	SB-TR	-	E (59.9)
	Intersection	D (51.0)	E (61.1)
Odell Road & Springfield Road	Intersection	A (7.3)	A (7.0)
Odell Road & Ellington Drive	Intersection	A (4.6)	A (3.5)
Powder Mill Road & Springfield Road	SB-LR	F (567.6)	F (657.6)
	Intersection	F (79.0)	F (117.5)
* Delay exceeds calculable values in HCM 6th Edition.			

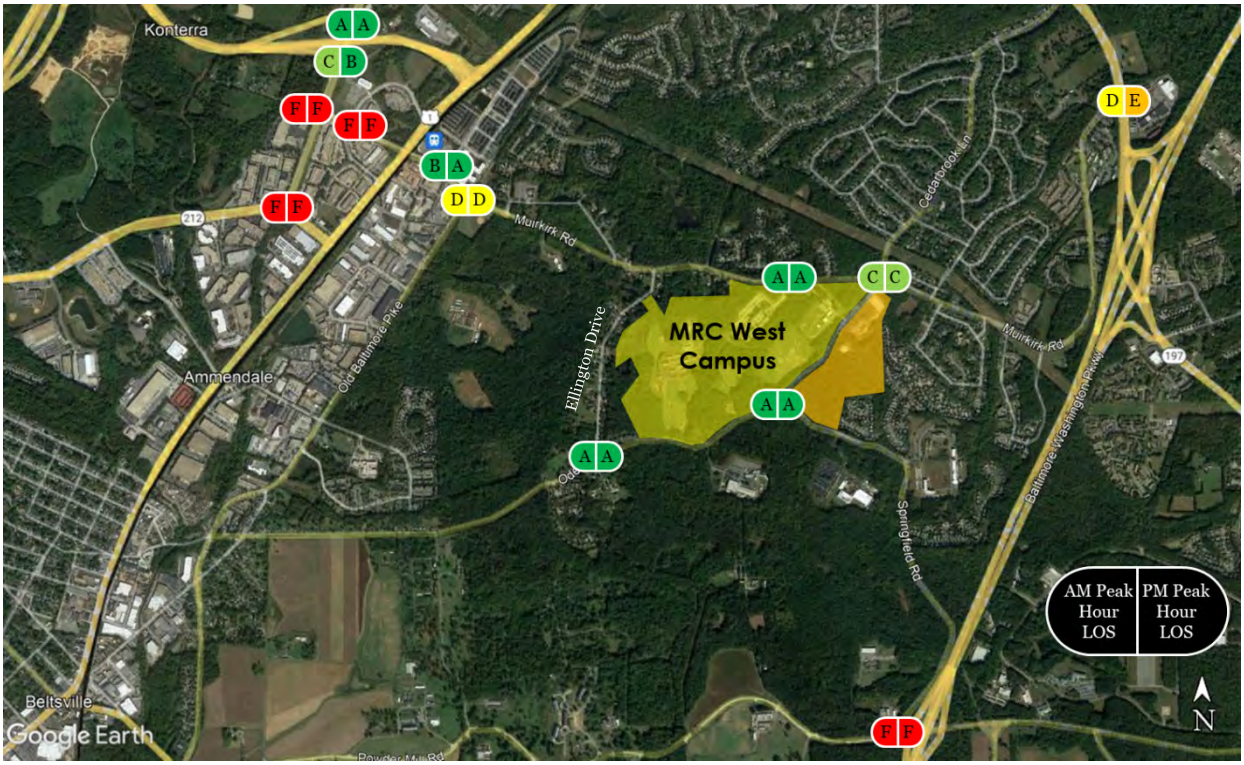

Figure 12: Phase 3 No Action Condition Overall Intersection LOS

PHASE 2/PHASE 3 (2030/2040) ACTION CONDITION

The Action Condition analysis examines future anticipated volumes, taking into consideration traffic under the No Action Condition as well as traffic that would be generated by the proposed growth of MRC West Campus. An additional intersection has also been added to the action condition. A second driveway has been proposed on Odell Road, approximately 1,000 feet south of the intersection of Muirkirk Road and Odell Road. This driveway would provide secured access for employees and trucks. Primary vehicular access, including visitor access, would still be provided via the existing Muirkirk Road driveway.

SITE TRIP GENERATION

The MRC West Campus is a complex trip generator with many variables that relate directly to how many vehicles enter and exit the campus during an average weekday. Employees arrive and depart primarily during typical AM and PM peak hours. The ITE *Trip Generation Manual (*11th Edition*)* Land Use Code 710 (General Office Building) was utilized to estimate the number of AM peak hour, PM peak hour, and total daily trips that would be generated by the additional 1,500 MRC West Campus employees (Table 8). These daily trips include both auto trips and non-auto trips.

Information obtained from the commuter survey conducted in November 2020 found that 97 percent of employees currently drive to work. However, NCPC parking guidance requires a parking ratio of one parking space per two employees, which would require that 50 percent of employees

arrive via modes other than driving alone because parking will only be provided for 50 percent of employees.

Furthermore, NCPC requires the development of a TMP to provide transportation demand management (TDM) strategies, an implementation plan, and performance monitoring guidance to help reduce SOV commute trips. A TMP has been developed in concert with this TIS as part of the master planning effort. One of the most significant strategies that will be utilized to reduce SOV trips to and from the MRC West Campus will be FDA's post-pandemic teleworking policy. FDA has adopted the new U.S. Department of Health and Human Services 21st Century Workplace Planning Policy, which allows certain employees that are not required to be onsite to work from home. Therefore, it is anticipated that most FDA employees that do not require access to the laboratories onsite to conduct their work will continue to work primarily from home.

Furthermore, the Master Plan strictly adheres to the one parking space per two employees requirement by NCPC when providing parking for each development phase. The restricted on-site parking, in combination with the TMP guidance and the new teleworking policy will result in substantially reduced SOV trips to the Campus. Therefore, a 50% non-auto trip credit, which was applied to the base trip generation rates in Phases 2 and 3 to estimate the anticipated vehicular trip generation from the proposed growth. The TMP can be found in Appendix D.

Table 8: Trip Generation Estimate

	Number of Employees	AM Peak Hour			PM Peak Hour			Total Daily
		In	Out	Tot	In	Out	Tot	
Existing (2021)	300	159	22	181	28	138	166	1,182
Phase 2: 2030 (Action Alternatives A and C)	1,000	399	55	454	69	335	404	2,951
With 50% Non-SOV Mode Share		200	28	227	35	168	202	1,476
Phase 2: 2030 (Action Alternative B)	468	217	30	247	39	191	230	1,657
With 50% Non-SOV Mode Share		**109**	**15**	**124**	**20**	**96**	**115**	**829**
Phase 3: 2040 (Action Alternatives A, B, and C)	1,800	674	92	766	106	518	624	4,613
With 50% Non-SOV Mode Share		**337**	**46**	**383**	**53**	**259**	**312**	**2,307**

SITE TRIP DISTRIBUTION

A trip distribution analysis was conducted to estimate how the new vehicle trips would travel to and from the site. Employee home ZIP code data for employees that work in other offices within the DC area other than the MRC West Campus or the White Oak Campus was obtained from a 2017 survey conducted for FDA's White Oak Campus (Figure 13). Utilizing typical weekday traffic conditions from Google Maps, a preferred route from off-campus was established for each given zip code. The following network entrance/exit points were established:

- Virginia Manor Road

- MD 200
- MD 212
- Laurel Bowie Road (MD 197)
- Muirkirk Meadows Drive
- Old Baltimore Pike
- Powder Mill Road

The designated routes were grouped by direction of arrival and departure to the study area network for the MRC West Campus employees. Utilizing the preferred routes of travel, percentages for each potential arrival/departure route were created for off-campus employees moving to the MRC West Campus. In general, most trips were oriented to/from I-95 via MD 200, Ammendale Road (MD 212), and Laurel Bowie Road (MD 197). The resulting trip distribution diagrams for the Action Conditions (Alternatives A, B, and C) can be found in Exhibits 17 through 23 in Appendix A.

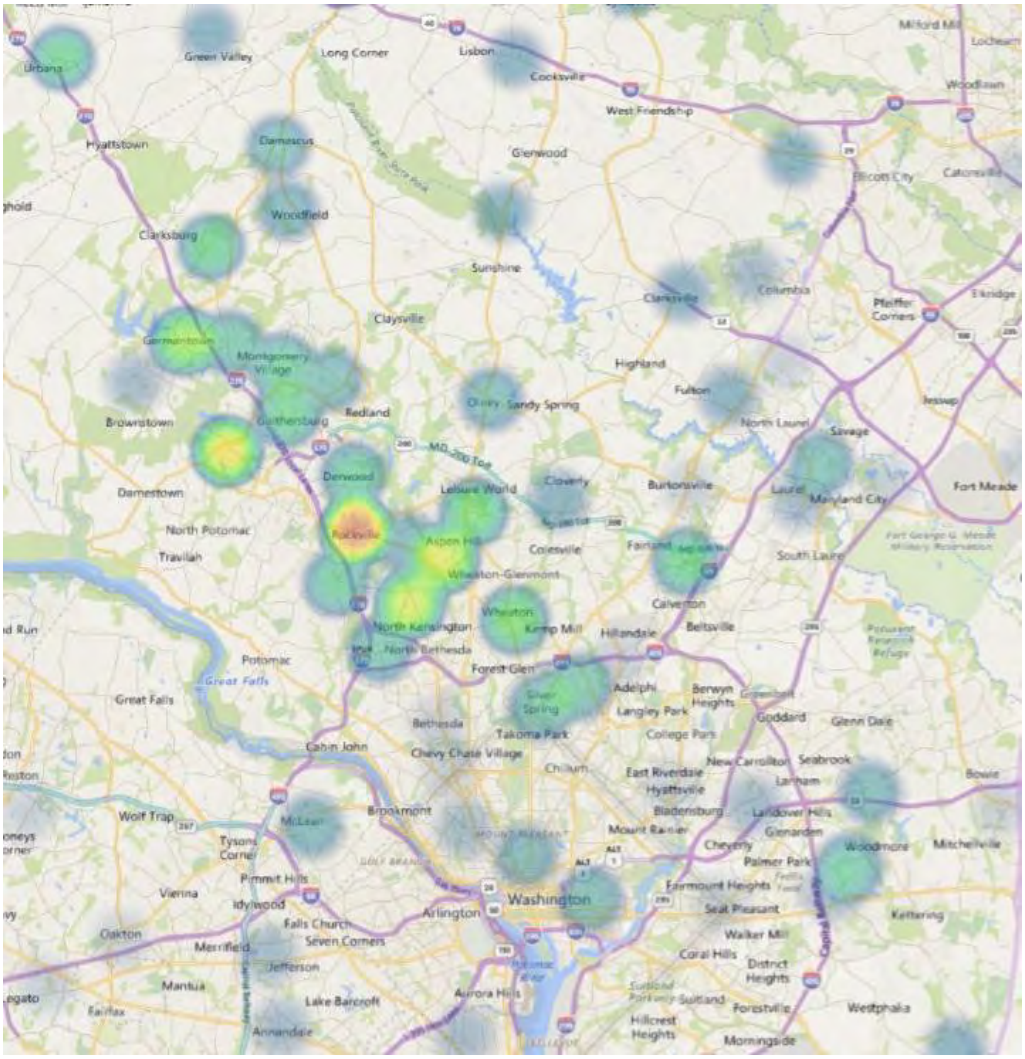

Figure 13: Concentration of Residences of Employees that may be Relocated to MRC West Campus

PHASE 2 (2030) ACTION CONDITION CAPACITY ANALYSIS RESULTS

Alternatives A and C

The 2030 No Action Condition traffic volumes and the proposed site-generated traffic volumes for Alternatives A and C were summed to obtain 2030 Action Condition (Alternatives A and C) volumes for the AM and PM peak hours, shown in Exhibits 24 and 25 in Appendix A. These volumes were modeled in Synchro 10 to produce capacity analysis results, summarized in Exhibits 30 and 31 in Appendix A. All Synchro capacity analysis outputs are located in Appendix C.

The results of the capacity analysis indicated that the proposed growth at the MRC West Campus would have a moderate impact on the study area roadway network when compared to the No Action Condition. Overall intersection delay would increase by less than 10 seconds per vehicle at all intersections except for the intersections of:

- Konterra Drive and MD 200 Off-Ramp
- Virginia Manor Road/Konterra Drive and Muirkirk Road
- Virginia Manor Road and Ritz Way
- Muirkirk Meadows Drive & Muirkirk Road
- Muirkirk Road and Snowden Woods Road/Site Driveway (Pasture Road)
- Powder Mill Road and Springfield Road

Table 9 shows the lane groups at study intersection that would operate at an overall LOS of E or F (failing condition), as well as overall intersection LOS. Figure 14 also illustrates overall intersection LOS on an aerial map. However, it should also be noted that many of the intersections that are impacted outside of the immediate area of the site experience an increase in delay due to the already high delays that are present in the No Action Condition. When traffic volume is added to already oversaturated intersection movements, Synchro-reported delay can increase exponentially. Therefore, it is likely that if the No Action Condition is addressed through other projects, the increase in delay attributed to MRC-generated traffic would be lower.

Table 9: Phase 2 Action Condition (Alternatives A & C)
Lane Groups Operating at Overall LOS E or F
Overall Intersection LOS

Intersection	Lane Group	2030 No Action Condition		2030 Action Condition (Alternatives A & C)	
		AM	PM	AM	PM
Konterra Drive & MD 200 On-Ramp	Intersection	A (8.0)	A (5.6)	A (8.2)	A (7.0)
Konterra Drive & MD 200 Off-Ramp	Intersection	C (22.0)	B (19.9)	C (29.9)	C (21.1)
Virginia Manor Road/Konterra Drive & Muirkirk Road	WB-R	-	F (50.3)	F (39.0)	F (89.7)
	SB-L	F (298.0)	F (245.8)	F (376.5)	F (264.8)
	Intersection	F (109.4)	F (89.9)	F (140.9)	F (107.7)
Virginia Manor Road/Ritz Way (MD 212) & Virginia Manor Road	SB-L	F (*)	F (*)	F (*)	F (*)
	SB-R	F(*)	F(*)	F (*)	F(*)
	Intersection	F (*)	F (*)	F (*)	F (*)
Muirkirk Meadows Drive & Muirkirk Road	NB-LTR	F(*)	F (*)	F (*)	F (*)
	SB-LTR	F (*)	F (*)	F (*)	F (*)
	Intersection	F (*)	F (*)	F (*)	F (*)
Brickyard Boulevard/Driveway & Muirkirk Road	Intersection	B (10.5)	A (8.5)	B (10.5)	A (8.0)
Old Baltimore Pike/Cedarhurst Drive & Muirkirk Road	EB-TR	-	-	F (67.5)	-
	NB-L	F (72.0)	F (65.7)	F (72.0)	F (65.7)
	Intersection	C (30.4)	C (32.3)	D (52.6)	C (32.3)
Pasture Road/Snowden Woods Road & Muirkirk Road	NB-L	-	E (44.2)	-	F (332.3)
	Intersection	A (1.1)	A (1.4)	A (1.6)	D (31.2)
Odell Road/Cedarbrook Lane & Muirkirk Road	Intersection	B (13.9)	C (20.8)	B (14.0)	C (22.1)
Laurel Bowie Road (MD 197) & Muirkirk Road/Crystal Plaza Driveway	EB-L	E (79.0)	F (83.6)	E (79.1)	F (83.8)
	EB-LT	E (76.9)	E (79.9)	E (76.7)	F (80.7)
	WB-LT	F (86.2)	F (104.5)	F (86.2)	F (104.5)
	NB-L	F (143.4)	F (128.5)	F (166.9)	F (130.3)
	SB-L	E (76.9)	F (84.1)	E (76.9)	F (84.1)
	Intersection	D (46.5)	D (54.6)	D (48.9)	D (55.0)
Odell Road & MRC Driveway	Intersection	-	-	A (0.3)	A (1.0)
Odell Road & Springfield Road	Intersection	A (7.0)	A (6.9)	A (7.2)	A (6.9)
Odell Road & Ellington Drive	Intersection	A (4.6)	A (3.5)	A (4.6)	A (3.5)
Powder Mill Road & Springfield Road	SB-LR	F (453.3)	F (529.6)	F (462.6)	F (558.7)
	Intersection	F (62.6)	F (93.6)	F (63.7)	F (100.8)
* Delay exceeds calculable values in HCM 6th Edition.					

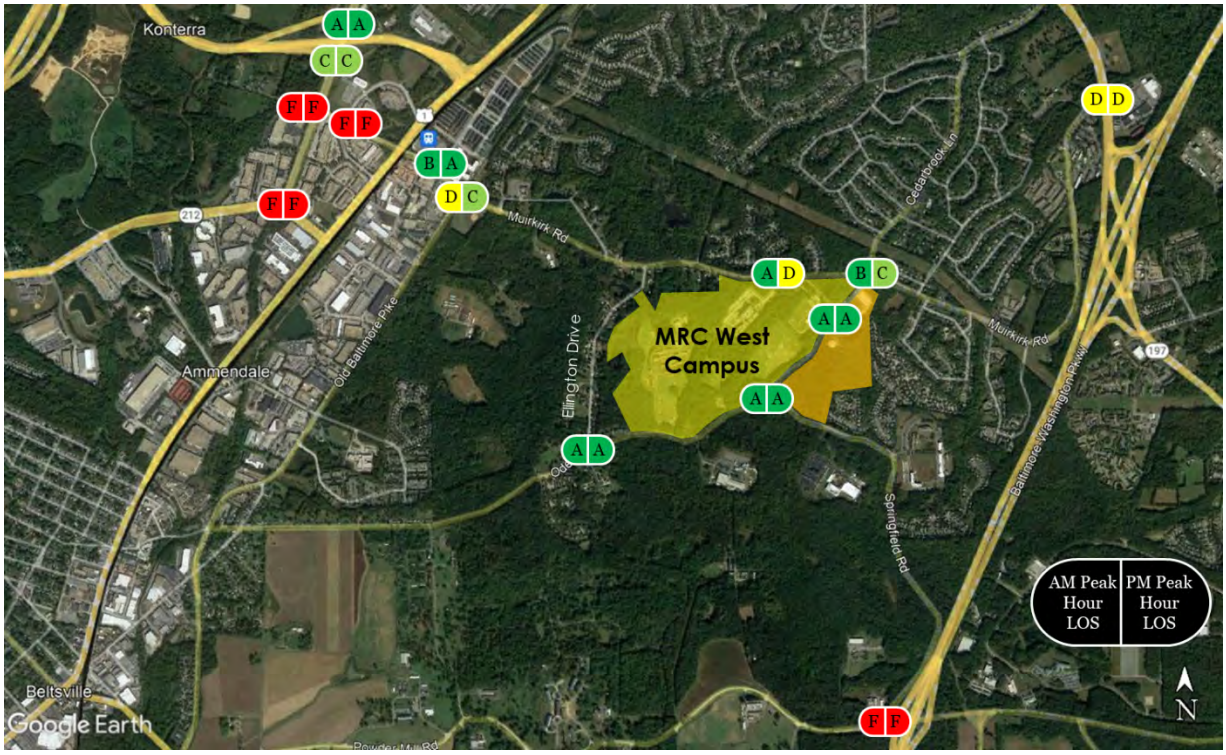

Figure 14: Phase 2 Action Condition (Alternatives A & C) Overall Intersection LOS

Alternative B (Preferred Alternative)

The 2030 No Action Condition traffic volumes and the proposed site-generated traffic volumes for Alternative B (the preferred alternative) were summed to obtain 2030 Action Condition (Alternative B) volumes for the AM and PM peak hours, shown in Exhibits 26 and 27 in Appendix A. These volumes were modeled in Synchro 10 to produce capacity analysis results, summarized in Exhibits 30 and 31 in Appendix A. All Synchro capacity analysis outputs are located in Appendix C.

The results of the capacity analysis indicate that the proposed growth at the MRC West Campus would have a moderate impact on the study area roadway network when compared to the No Action Condition. Overall intersection delay would increase by less than 10 seconds per vehicle at all intersections except for the intersections of:

- Konterra Drive and MD 200 Off-Ramp
- Virginia Manor Road/Konterra Drive and Muirkirk Road
- Virginia Manor Road and Ritz Way
- Muirkirk Meadows Drive & Muirkirk Road
- Muirkirk Road and Snowden Woods Road/Site Driveway (Pasture Road)
- Powder Mill Road and Springfield Road

Table 10 below shows the lane groups at study intersections that would operate at an overall LOS of E or F (failing condition), as well as overall intersection LOS. Figure 15 also illustrates overall intersection LOS on an aerial map. However, it should also be noted that many of the intersections that are impacted outside of the immediate area of the site experience an increase in delay due to the already high delays that are present in the No Action Condition. When traffic volume is added to

already oversaturated intersection movements, Synchro-reported delay can increase exponentially. Therefore, it is likely that if the No Action Condition is addressed through other projects, the increase in delay attributed to MRC-generated traffic would be lower.

Table 10: Phase 2 Action Condition (Alternative B) Lane Groups Operating at Overall LOS E or F Overall Intersection LOS

Intersection	Lane Group	2030 No Action Condition		2030 Action Condition (Alternative B)	
		AM	PM	AM	PM
Konterra Drive & MD 200 On-Ramp	Intersection	A (8.0)	A (5.6)	A (8.1)	A (6.4)
Konterra Drive & MD 200 Off-Ramp	Intersection	C (22.0)	B (19.9)	C (25.1)	C (20.6)
Virginia Manor Road/Konterra Drive & Muirkirk Road	WB-R	-	F (50.3)	-	F (71.6)
	SB-L	F (298.0)	F (245.8)	F (339.8)	F (257.0)
	Intersection	F (109.4)	F (89.9)	F (126.0)	F (99.6)
Virginia Manor Road/Ritz Way (MD 212) & Virginia Manor Road	SB-L	F (*)	F (*)	F (*)	F (*)
	SB-R	F(*)	F(*)	F (*)	F(*)
	Intersection	F (*)	F (*)	F (*)	F (*)
Muirkirk Meadows Drive & Muirkirk Road	NB-LTR	F(*)	F (*)	F (*)	F (*)
	SB-LTR	F (*)	F (*)	F (*)	F (*)
	Intersection	F (*)	F (*)	F (*)	F (*)
Brickyard Boulevard/Driveway & Muirkirk Road	Intersection	B (10.5)	A (8.5)	B (10.4)	A (8.1)
Old Baltimore Pike/Cedarhurst Drive & Muirkirk Road	EB-TR	-	-	F (-)	-
	NB-L	F (72.0)	F (65.7)	F (70.2)	F (65.7)
	Intersection	C (30.4)	C (32.3)	D (36.1)	C (32.3)
Pasture Road/Snowden Woods Road & Muirkirk Road	NB-L	-	E (44.2)	-	F (135.8)
	Intersection	A (1.1)	A (1.4)	A (1.4)	A (9.0)
Odell Road/Cedarbrook Lane & Muirkirk Road	Intersection	B (13.9)	C (20.8)	B (13.9)	C (21.6)
Laurel Bowie Road (MD 197) & Muirkirk Road/Crystal Plaza Driveway	EB-L	E (79.0)	F (83.6)	E (79.0)	F (83.8)
	EB-LT	E (76.9)	E (79.9)	E (76.9)	F (80.7)
	WB-LT	F (86.2)	F (104.5)	F (86.2)	F (104.5)
	NB-L	F (143.4)	F (128.5)	F (155.9)	F (130.3)
	SB-L	E (76.9)	F (84.1)	E (76.9)	F (84.1)
	Intersection	D (46.5)	D (54.6)	D (47.8)	D (55.0)
Odell Road & MRC Driveway	Intersection	-	-	A (0.2)	A (0.6)
Odell Road & Springfield Road	Intersection	A (7.0)	A (6.9)	A (7.1)	A (6.9)
Odell Road & Ellington Drive	Intersection	A (4.6)	A (3.5)	A (4.6)	A (3.5)
Powder Mill Road & Springfield Road	SB-LR	F (453.3)	F (529.6)	F (456.5)	F (543.9)
	Intersection	F (62.6)	F (93.6)	F (63.0)	F (97.4)
* Delay exceeds calculable values in HCM 6th Edition.					

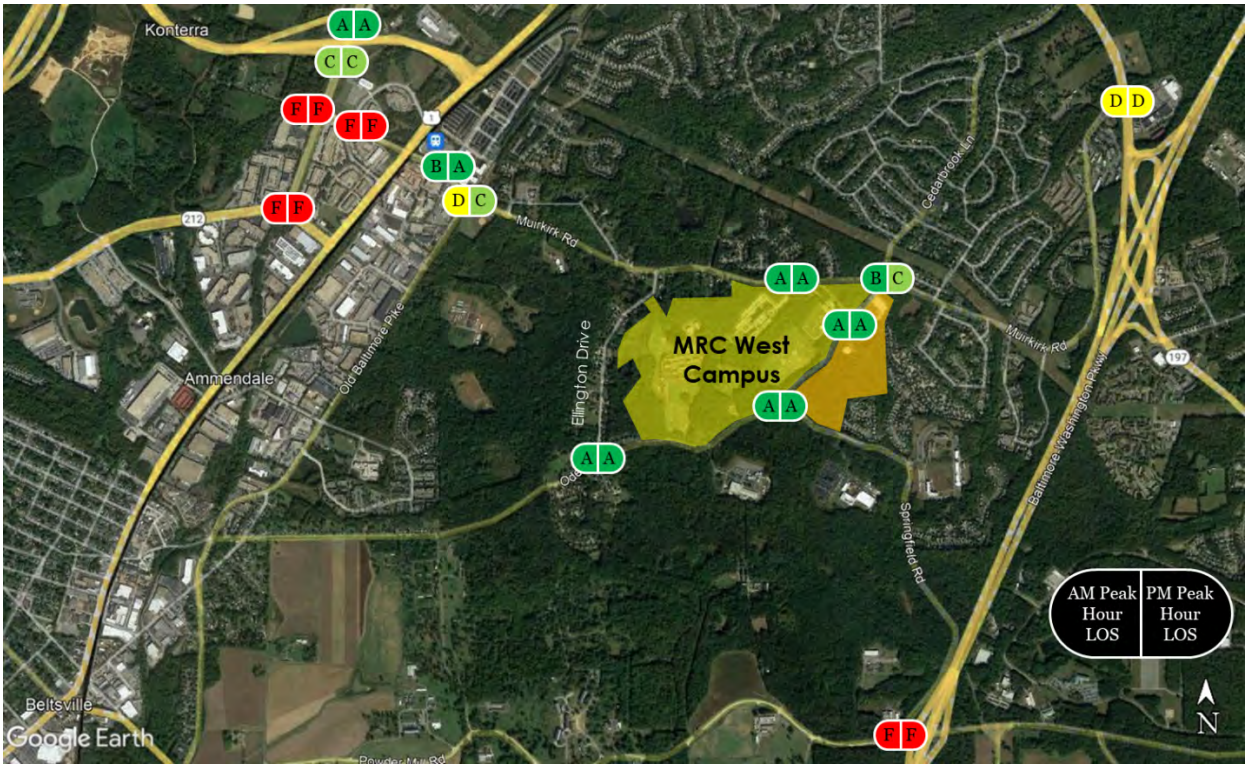

Figure 15: Phase 2 Action Condition (Alternative B) Overall Intersection LOS

PHASE 3 (2040) ACTION CONDITION CAPACITY ANALYSIS RESULTS

The 2040 No Action Condition traffic volumes and the proposed site-generated traffic volumes were summed to obtain 2040 Action Condition volumes for the AM and PM peak hours, shown in Exhibits 28 and 29 in Appendix A. These volumes were modeled in Synchro 10 to produce capacity analysis results, summarized in Exhibits 30 and 31 in Appendix A. All Synchro capacity analysis outputs are located in Appendix C.

The results of the capacity analysis indicate that the planned growth at the MRC West Campus would have a moderate impact on the study area intersections. Overall intersection delay would increase by less than 10 seconds per vehicle at all intersections except for the intersections of:

- Konterra Drive and MD 200 Off-Ramp
- Virginia Manor Road/Konterra Drive and Muirkirk Road
- Virginia Manor Road and Ritz Way
- Muirkirk Meadows Drive & Muirkirk Road
- Muirkirk Road and Snowden Woods Road/Site Driveway (Pasture Road)
- Powder Mill Road and Springfield Road

All intersections would operate at an overall LOS D or better with the exception of the intersections of:

- Virginia Manor Road/ Konterra Drive and Muirkirk Road
- Virginia Manor Road/ Ritz Way (MD 212) and Virginia Manor Road
- Muirkirk Meadows Drive and Muirkirk Road
- Old Baltimore Pike/ Cedarhurst Drive and Muirkirk Road,
- Muirkirk Road and Snowden Woods Road/Site Driveway (Pasture Road)
- Laurel Bowie Road (MD 197) & Muirkirk Road/Crystal Plaza Driveway
- Powder Mill Road & Springfield Road

These intersections would continue to operate at LOS E or F and experience an overall increase in delays. Table 11 below indicates the lane groups at study intersections that would operate at an overall LOS of E or F (failing condition), as well as overall intersection LOS. Figure 16 also illustrates overall intersection LOS on a map.

Table 11: Phase 3 Action Condition
Lane Groups Operating at Overall LOS E or F
Overall Intersection LOS

Intersection	Lane Group	2040 No Action Condition		2040 Action Condition	
		AM	PM	AM	PM
Konterra Drive & MD 200 On-Ramp	Intersection	A (8.8)	A (6.2)	A (9.4)	A (8.7)
Konterra Drive & MD 200 Off-Ramp	EB-R	-	-	F (155.2)	-
	Intersection	C (24.3)	B (20.0)	D (47.4)	C (21.8)
Virginia Manor Road/Konterra Drive & Muirkirk Road	WB-R	F (53.6)	F (57.7)	F (65.1)	F (125.1)
	SB-L	F (345.6)	F (288.9)	F (484.5)	F (316.2)
	Intersection	F (128.3)	F (104.5)	F (185.4)	F (133.4)
Virginia Manor Road/Ritz Way (MD 212) & Virginia Manor Road	EB-L	E (41.4)	-	F (105.0)	-
	SB-L	F (*)	F (*)	F (*)	F (*)
	SB-R	F (*)	F (*)	F (*)	F (*)
	Intersection	F (*)	F (*)	F (*)	F (*)
Muirkirk Meadows Drive & Muirkirk Road	WB-L	-	-	E (35.3)	-
	NB-LTR	F (*)	F (*)	F (*)	F (*)
	SB-LTR	F (*)	F (*)	F (*)	F (*)
	Intersection	F (*)	F (*)	F (*)	F (*)
Brickyard Boulevard/Driveway & Muirkirk Road	Intersection	B (10.9)	A (8.3)	B (11.3)	A (8.2)
Old Baltimore Pike/Cedarhurst Drive & Muirkirk Road	EB-TR	-	-	F (159.6)	-
	NB-L	F (91.1)	F (82.6)	F (91.1)	F (82.6)
	Intersection	D (35.7)	D (37.6)	F (98.9)	D (37.4)
Pasture Road/Snowden Woods Road & Muirkirk Road	NB-L	-	F (50.7)	E (39.3)	F (787.6)
	SB-LTR	-	E (37.1)	E (37.8)	E (44.8)
	Intersection	A (1.2)	A (1.6)	A (2.2)	F (97.7)
Odell Road/Cedarbrook Lane & Muirkirk Road	Intersection	B (14.3)	C (22.3)	B (14.8)	C (24.8)

Intersection	Lane Group	2040 No Action Condition		2040 Action Condition	
		AM	PM	AM	PM
Laurel Bowie Road (MD 197) & Muirkirk Road/Crystal Plaza Driveway	EB-L	E (79.7)	F (84.4)	F (80.1)	F (85.9)
	EB-LT	E (77.4)	F (81.3)	E (77.4)	F (82.6)
	WB-LT	F (88.3)	F (116.1)	F (88.3)	F (116.1)
	NB-L	F (162.4)	F (144.5)	F (203.6)	F (148.4)
	SB-L	E (76.7)	F (86.6)	E (76.7)	F (86.6)
	SB-TR	-	E (59.9)	-	E (61.6)
	Intersection	D (51.0)	E (61.1)	E (55.4)	E (62.4)
Odell Road & MRC Driveway	Intersection	-	-	A (0.5)	A (1.5)
Odell Road & Springfield Road	Intersection	A (7.3)	A (7.0)	A (7.4)	A (7.1)
Odell Road & Ellington Drive	Intersection	A (4.6)	A (3.5)	A (4.6)	A (3.5)
Powder Mill Road & Springfield Road	SB-LR	F (567.6)	F (657.6)	F (585.8)	F (698.1)
	Intersection	F (79.0)	F (117.5)	F (81.6)	F (128.7)
* Delay exceeds calculable values in HCM 6th Edition.					

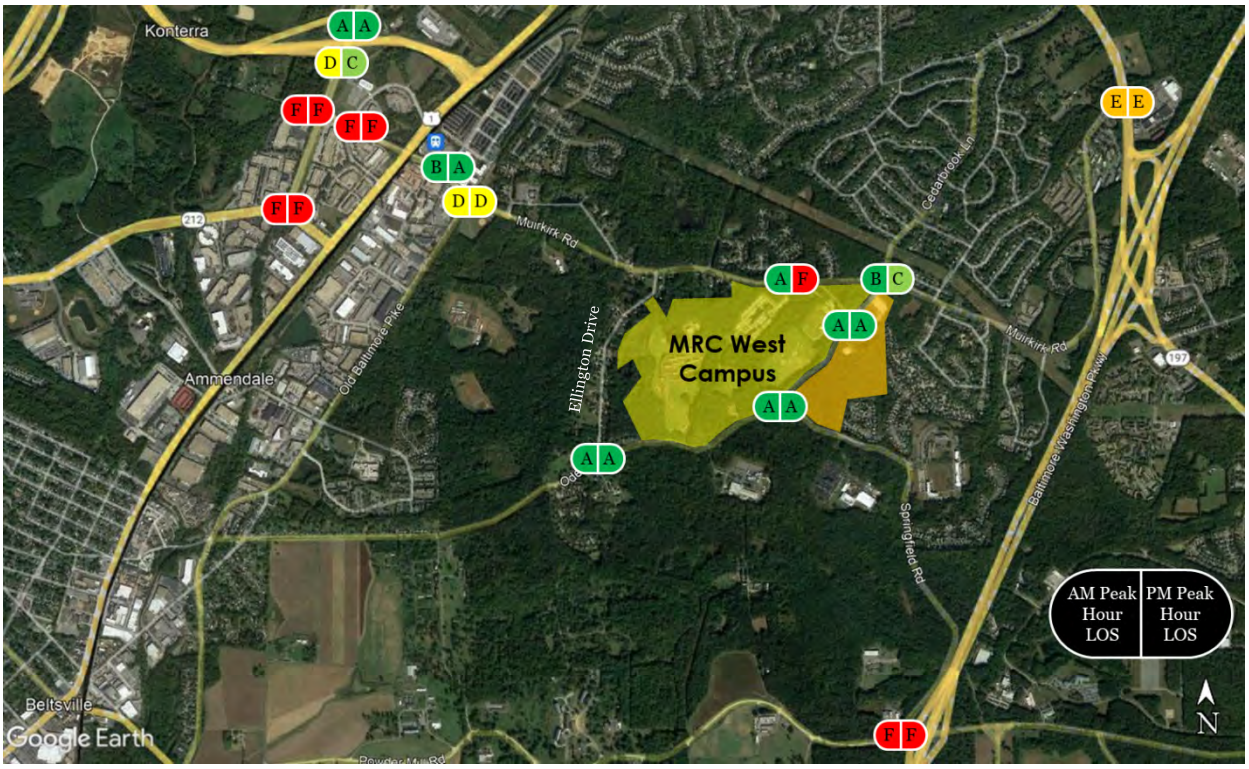

Figure 16: Phase 3 Action Condition Overall Intersection LOS

PHASE 2/PHASE 3 (2030/2040) ACTION CONDITION WITH MITIGATION

The analysis of the 2030/2040 No Action and Action Conditions indicates the need to provide intersection improvements to address deficiencies that would be present without the MRC West

Campus growth, as well as deficiencies that are directly related to the planned MRC West Campus growth. The 2030/2040 Action Condition with Mitigation analysis examines future anticipated volumes, taking into consideration traffic under the No Action Condition, as well as traffic that would be generated by the proposed growth of MRC West Campus employees.

PHASE 2 (2030) ACTION CONDITION WITH MITIGATION

Given the built-out nature of the transportation network within the study area, emphasis was placed on improving overall intersection operations through adjustments rather than new construction, such as constructing signalized intersections and additional lanes for movements that would experience an increase in delay of at least ten seconds per vehicle.

Recommended mitigation measures include signal timing and coordination adjustments as well as the following physical improvements at the signalized intersections (mitigation measures apply to both 2030 action alternatives unless otherwise noted):

VIRGINIA MANOR ROAD (MD 206)/KONTERRA DRIVE AND MUIRKIRK ROAD

- Provide a second southbound left-turn lane from Konterra Drive onto eastbound Muirkirk Road.
- Provide a second westbound left-turn lane from Muirkirk Road onto southbound Muirkirk Road and eliminate the split phasing for the Muirkirk Road approaches.
- Any improvements at this intersection should be re-evaluated as part of a future traffic analysis, as master-planned projects at the MRC West Campus advance to implementation, to determine if the Konterra development is still moving forward.

VIRGINIA MANOR ROAD/ RITZ WAY (MD 212) AND VIRGINIA MANOR ROAD (MD 206)

- Install a traffic signal that is coordinated with the other signals along Virginia Manor Road/Konterra Drive (MD 206). A traffic signal warrant analysis would need to be conducted as part of a future traffic analysis as master-planned projects at the MRC West Campus advance to implementation.

- A roundabout could also be considered at this intersection but would require further investigation.

MUIRKIRK MEADOWS DRIVE AND MUIRKIRK ROAD

- Install a traffic signal that is coordinated with the other nearby traffic signals on Muirkirk Road. A traffic signal warrant analysis would need to be conducted as part of a future traffic analysis as master-planned projects at the MRC West Campus advance to implementation.

OLD BALTIMORE PIKE/ CEDARHURST DRIVE AND MUIRKIRK ROAD

- Restripe the eastbound Muirkirk Road approach to consist of one left-turn lane, one through lane, and one right-turn lane (Master Plan action alternative B only).

- Construct separate right-turn only lane from eastbound Muirkirk Road to southbound Old Baltimore Pike (Master Plan action alternative A and C only).

PASTURE ROAD/ SNOWDEN WOODS ROAD AND MUIRKIRK ROAD

- Install a traffic signal at the intersection. A traffic signal warrant analysis would need to be conducted as part of a future traffic analysis as master-planned projects at the MRC West Campus advance to implementation.

- A roundabout could also be considered at this location. However, this would warrant further investigation as additional right-of-way (ROW) may be required.

POWDER MILL ROAD AND SPRINGFIELD ROAD

- Install a traffic signal at this intersection and provide separate right and left-turn lanes on westbound and eastbound Powder Mill Road, respectfully. This is also a recommendation contained in the *Bureau of Engraving and Printing Transportation Impact Study* (2020), prepared by Alliance Consulting Group. It is assumed that this signal would be implemented as part of the Bureau of Engraving and Printing project.

MUIRKIRK ROAD/CRYSTAL PLAZA DRIVEWAY AND LAUREL BOWIE ROAD (MD 197)

- Provide two northbound and southbound left-turn lanes from MD 197 to Muirkirk Road/Crystal Plaza (Master Plan action alternative A and C only).

- Provide a second eastbound left-turn lane from Muirkirk Road to northbound MD 197 (Master Plan action alternative A and C only).

PHASE 2 (2030) ACTION CONDITION WITH MITIGATION CAPACITY ANALYSIS RESULTS

Alternatives A and C

The proposed enhancements would result in intersections that operate at similar, or better, levels of service when compared to the 2030 No Action Condition (see Exhibits 30 and 31 in Appendix A). There would be no intersections that would continue to operate at an overall LOS E or F. Lane groups that would operate at an overall LOS of E or F (failing condition) at study intersections are shown in Table 12 in comparison to the Action Alternative, as well as overall intersection LOS. Figure 17 also illustrates overall intersection LOS on an aerial.

Table 12: Phase 2 Action Condition with Mitigation (Alternatives A and C)
Lane Groups Operating at Overall LOS E or F
Overall Intersection LOS

Intersection	Lane Group	2030 No Action Condition		2030 Action Condition with Mitigation (Alternatives A & C)	
		AM	PM	AM	PM
Konterra Drive & MD 200 On-Ramp	Intersection	A (8.0)	A (5.6)	A (6.2)	A (5.5)
Konterra Drive & MD 200 Off-Ramp	Intersection	C (22.0)	B (19.9)	C (26.0)	B (18.6)
Virginia Manor Road/Konterra Drive & Muirkirk Road	EB-LT	-	-	E (58.5)	-
	WB-L	-	-	-	E (65.8)
	WB-R	-	F (50.3)	-	-
	NB-T	-	-	E (58.8)	-
	SB-L	F (298.0)	F (245.8)	-	-
	Intersection	F (109.4)	F (89.9)	D (35.7)	C (34.9)
Virginia Manor Road/Ritz Way (MD 212) & Virginia Manor Road	SB-L	F (*)	F (*)	-	-
	Intersection	F (*)	F (*)	B (19.3)	B (15.9)
Muirkirk Meadows Drive & Muirkirk Road	NB-LTR	F (*)	F (*)	-	-
	SB-LTR	F (*)	F (*)	-	-
	Intersection	F (*)	F (*)	B (19.2)	B (17.5)
Brickyard Boulevard/Driveway & Muirkirk Road	Intersection	B (10.5)	A (8.5)	B (12.4)	A (8.0)
Old Baltimore Pike/Cedarhurst Drive & Muirkirk Road	NB-L	F (72.0)	F (65.7)	-	-
	Intersection	C (30.4)	C (32.3)	C (29.6)	C (27.6)
Pasture Road/Snowden Woods Road & Muirkirk Road	NB-L	-	E (44.2)	-	-
	Intersection	A (1.1)	A (1.4)	A (3.4)	B (13.1)
Odell Road/ Cedarbrook Lane & Muirkirk Road	Intersection	B (13.9)	C (20.8)	B (12.0)	B (19.1)
Laurel Bowie Road (MD 197) & Muirkirk Road/Crystal Plaza Driveway	EB-L	E (79.0)	F (83.6)	-	E (67.3)
	EB-LT	E (76.9)	E (79.9)	-	E (74.5)
	WB-LT	F (86.2)	F (104.5)	-	E (79.6)
	NB-L	F (143.4)	F (128.5)	-	E (72.2)
	SB-L	E (76.9)	F (84.1)	-	E (74.1)
	Intersection	D (46.5)	D (54.6)	D (37.0)	D (44.2)
Odell Road & MRC Driveway	Intersection	-	-	A (0.3)	A (1.0)
Odell Road & Springfield Road	Intersection	A (7.0)	A (6.9)	A (7.2)	A (6.9)
Odell Road & Ellington Drive	Intersection	A (4.6)	A (3.5)	A (4.6)	A (3.5)
Powder Mill Road & Springfield Road	SB-LR	F (453.3)	F (529.6)	-	-
	Intersection	F (62.6)	F (93.6)	B (14.6)	B (19.8)
* Delay exceeds calculable values in HCM 6th Edition.					

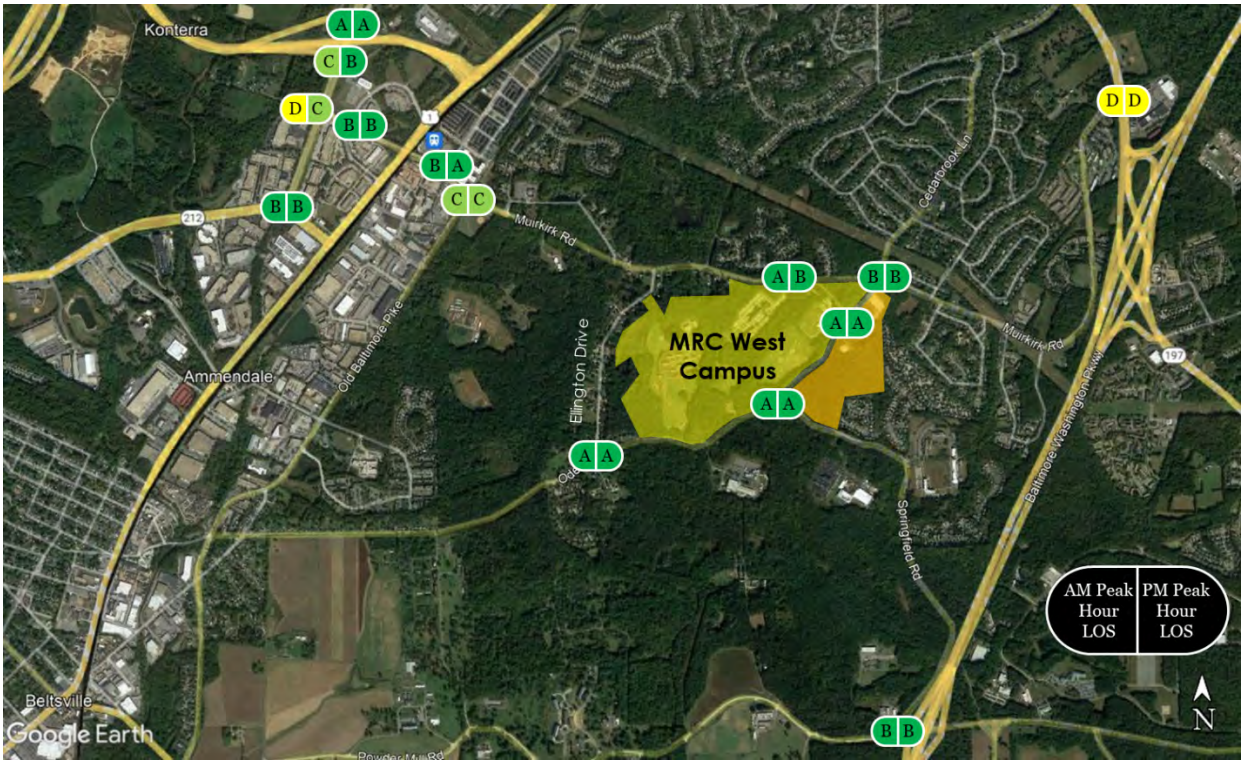

Figure 17: Phase 2 Action Condition with Mitigation (Alternatives A & C) Overall Intersection LOS

Alternative B (Preferred Alternative)

The proposed enhancements would result in intersections that operate at similar, or better, levels of service when compared to the 2030 No Action Condition (see Exhibits 30 and 31 in Appendix A). There would be no intersections that would continue operate at an overall LOS E or F. Lane groups that would operate at an overall LOS of E or F (failing condition) at study intersections are shown in Table 13 in comparison to the Action Alternative, as well as overall intersection LOS. Figure 18 also illustrates overall intersection LOS on an aerial.

Table 13: Phase 2 Action Condition with Mitigation (Alternative B)
Lane Groups Operating at Overall LOS E or F
Overall Intersection LOS

Intersection	Lane Group	2030 No Action Condition		2030 Action Condition with Mitigation (Alternative B)	
		AM	PM	AM	PM
Konterra Drive & MD 200 On-Ramp	Intersection	A (8.0)	A (5.6)	A (6.2)	A (5.3)
Konterra Drive & MD 200 Off-Ramp	Intersection	C (22.0)	B (19.9)	C (23.0)	C (21.1)
Virginia Manor Road/Konterra Drive & Muirkirk Road	EB-LT	-	-	E (58.3)	-
	WB-R	-	F (50.3)	-	E (61.9)
	SB-L	F (298.0)	F (245.8)	-	-
	Intersection	F (109.4)	F (89.9)	C (33.9)	D (37.9)
Virginia Manor Road/Ritz Way (MD 212) & Virginia Manor Road	SB-L	F (*)	F (*)	-	-
	Intersection	F (*)	F (*)	B (16.5)	B (14.1)
Muirkirk Meadows Drive & Muirkirk Road	NB-LTR	F (*)	F (*)	-	-
	SB-LTR	F (*)	F (*)	-	-
	Intersection	F (*)	F (*)	B (17.4)	B (15.4)
Brickyard Boulevard/Driveway & Muirkirk Road	Intersection	B (10.5)	A (8.5)	B (10.4)	A (7.8)
Old Baltimore Pike/Cedarhurst Drive & Muirkirk Road	NB-L	F (72.0)	F (65.7)	F (70.2)	F (65.7)
	Intersection	C (30.4)	C (32.3)	D (39.4)	C (32.6)
Pasture Road/Snowden Woods Road & Muirkirk Road	NB-L	-	E (44.2)	-	-
	Intersection	A (1.1)	A (1.4)	A (3.2)	B (10.3)
Odell Road/Cedarbrook Lane & Muirkirk Road	Intersection	B (13.9)	C (20.8)	B (13.9)	C (21.6)
Laurel Bowie Road (MD 197) & Muirkirk Road/Crystal Plaza Driveway	EB-L	E (79.0)	F (83.6)	E (79.0)	F (83.8)
	EB-LT	E (76.9)	E (79.9)	E (76.9)	F (80.7)
	WB-LT	F (86.2)	F (104.5)	F (86.2)	F (104.5)
	NB-L	F (143.4)	F (128.5)	F (155.9)	F (130.3)
	SB-L	E (76.9)	F (84.1)	E (76.9)	F (84.1)
	Intersection	D (46.5)	D (54.6)	D (47.8)	D (55.0)
Odell Road & MRC Driveway	Intersection	-	-	A (0.2)	A (0.6)
Odell Road & Springfield Road	Intersection	A (7.0)	A (6.9)	A (7.1)	A (6.9)
Odell Road & Ellington Drive	Intersection	A (4.6)	A (3.5)	A (4.6)	A (3.5)
Powder Mill Road & Springfield Road	SB-LR	F (453.3)	F (529.6)	-	-
	Intersection	F (62.6)	F (93.6)	B (14.7)	B (19.7)
* Delay exceeds calculable values in HCM 6th Edition.					

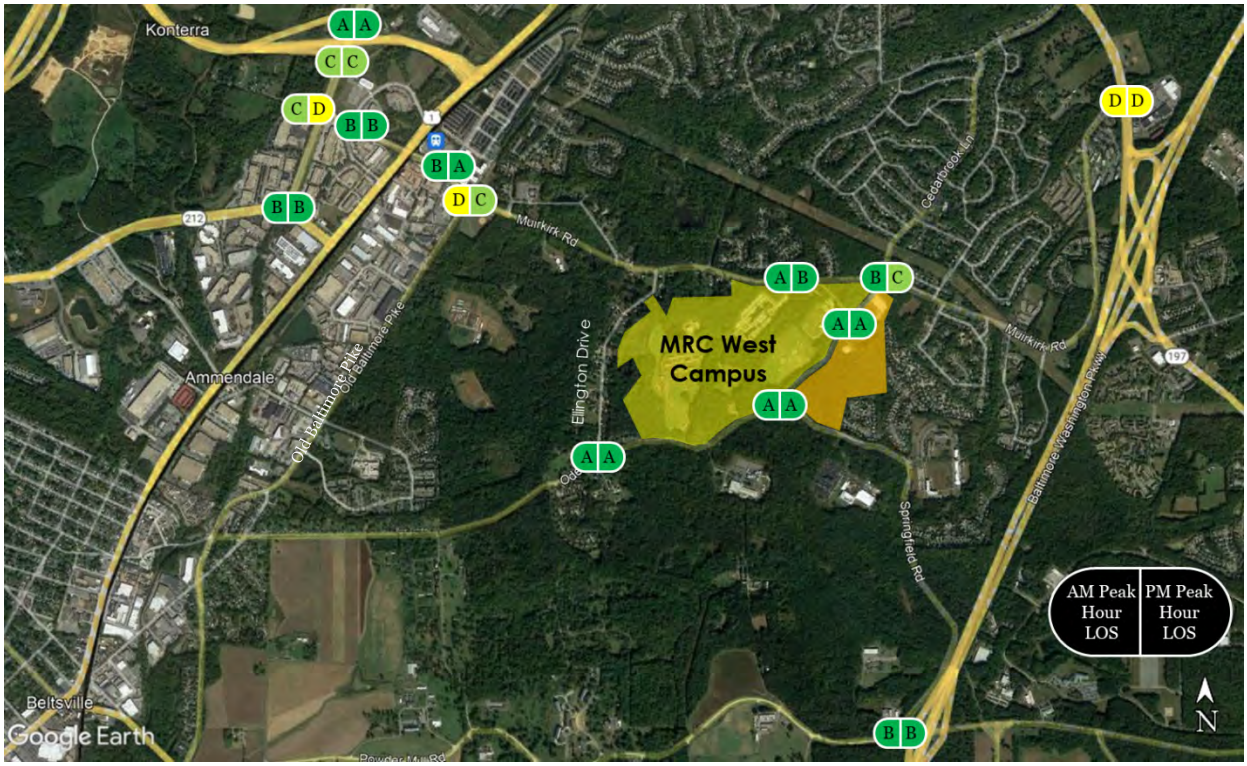

Figure 18: Phase 2 Action Condition with Mitigation (Alternative B) Overall Intersection LOS

PHASE 3 (2040) ACTION CONDITION WITH MITIGATION

The 2040 Action Condition with Mitigation includes the same improvements identified in the 2030 Action Condition with Mitigation alternatives, as well as the following:

KONTERRA DRIVE AND MD 200 OFF-RAMP

- Provide a second eastbound right-turn lane from the MD 200 ramp onto southbound Konterra Drive.

VIRGINIA MANOR ROAD (MD 206)/KONTERRA DRIVE AND MUIRKIRK ROAD

- Provide a third southbound left-turn lane from Konterra Drive onto eastbound Muirkirk Road and construct a third receiving lane on Muirkirk Road that would become a right-turn only lane at Muirkirk Meadows Drive.
- Any improvements at this intersection should be re-evaluated as part of a future traffic analysis, as master-planned projects at the MRC West Campus advance to implementation, to determine if the Konterra development is still moving forward.

OLD BALTIMORE PIKE/ CEDARHURST DRIVE AND MUIRKIRK ROAD

- Modify the southbound Cedarhurst Drive approach to consist of one shared through-right lane and one shared through-left lane.

MUIRKIRK ROAD/CRYSTAL PLAZA AND LAUREL BOWIE ROAD (MD 197)

- Provide two northbound and southbound left-turn lanes from MD 197 to Muirkirk Road/Crystal Plaza. This improvement would be required if not already constructed in Phase 2 as part of Master Plan action alternatives A and C.
- Provide a second eastbound left-turn lane from Muirkirk Road to northbound MD 197. This improvement would be required if not already constructed in Phase 2 as part of Master Plan action alternatives A and C.

PHASE 3 (2040) ACTION CONDITION WITH MITIGATION CAPACITY ANALYSIS RESULTS

The proposed enhancements would result in intersections that operate at similar, or better, levels of service when compared to the 2040 No Action Condition (see Exhibits 30 and 31 in Appendix A). There would be no intersections that would continue operate at an overall LOS E or F. Lane groups that would operate at an overall LOS of E or F (failing condition) at study intersections are shown in Table 14 in comparison to the Action Alternative, as well as overall intersection LOS. Figure 19 also illustrate overall intersection LOS on an aerial.

Table 14: Phase 3 Action with Mitigation Alternative
Lane Groups Operating at Overall LOS E or F
Overall Intersection LOS

Intersection	Lane Group	2040 No Action Condition		2040 Action Condition with Mitigation	
		AM	PM	AM	PM
Konterra Drive & MD 200 On-Ramp	Intersection	A (8.8)	A (6.2)	A (7.8)	A (7.3)
Konterra Drive & MD 200 Off-Ramp	Intersection	C (24.3)	B (20.0)	B (17.4)	B (17.1)
Virginia Manor Road/Konterra Drive & Muirkirk Road	EB-LT	-	-	E (55.1)	-
	WB-L	-	-	E (60.7)	E (65.7)
	WB-R	F (53.6)	F (57.7)	E (77.3)	-
	NB-L	-	-	E (56.4)	-
	SB-L	F (345.6)	F (288.9)	-	-
	Intersection	F (128.3)	F (104.5)	D (49.5)	D (42.0)
Virginia Manor Road/Ritz Way (MD 212) & Virginia Manor Road	SB-L	F (*)	F (*)	-	-
	SB-R	F (*)	F (*)	-	-
	Intersection	F (*)	F (*)	C (22.2)	B (14.0)
Muirkirk Meadows Drive & Muirkirk Road	NB-LTR	F (*)	F (*)	-	-
	SB-LTR	F (*)	F (*)	-	-
	Intersection	F (*)	F (*)	C (29.2)	C (20.9)
Brickyard Boulevard/Driveway & Muirkirk Road	Intersection	B (10.9)	A (8.3)	B (16.2)	B (10.2)
Old Baltimore Pike/Cedarhurst Drive & Muirkirk Road	NB-L	F (91.1)	F (82.6)	-	-
	Intersection	D (35.7)	D (37.6)	C (32.0)	C (33.2)
	NB-L	-	F (50.7)	-	-

Intersection	Lane Group	2040 No Action Condition		2040 Action Condition with Mitigation	
		AM	PM	AM	PM
Pasture Road/Snowden Woods Road & Muirkirk Road	SB-LTR	-	E (37.1)	-	-
	Intersection	A (1.2)	A (1.6)	A (3.8)	C (21.8)
Odell Road/Cedarbrook Lane & Muirkirk Road	Intersection	B (14.3)	C (22.3)	B (12.4)	C (21.3)
Laurel Bowie Road (MD 197) & Muirkirk Road/Crystal Plaza Driveway	EB-L	E (79.7)	F (84.4)	E (70.4)	E (67.5)
	EB-LT	E (77.4)	F (81.3)	E (71.0)	E (74.2)
	EB-R	-	-	E (58.9)	E (68.6)
	WB-LT	F (88.3)	F (116.1)	E (79.3)	F (104.1)
	NB-L	F (162.4)	F (144.5)	E (79.9)	E (76.0)
	SB-L	E (76.7)	F (86.6)	E (77.9)	E (75.2)
	SB-TR	-	E (59.9)	-	-
	Intersection	D (51.0)	E (61.1)	D (39.7)	D (47.2)
Odell Road & MRC Driveway	Intersection	-	-	A (0.5)	A (1.5)
Odell Road & Springfield Road	Intersection	A (7.3)	A (7.0)	A (7.4)	A (7.1)
Odell Road & Ellington Drive	Intersection	A (4.6)	A (3.5)	A (4.6)	A (3.5)
Powder Mill Road & Springfield Road	SB-LR	F (567.6)	F (657.6)	-	-
	Intersection	F (79.0)	F (117.5)	B (15.7)	C (25.9)
* Delay exceeds calculable values in HCM 6th Edition.					

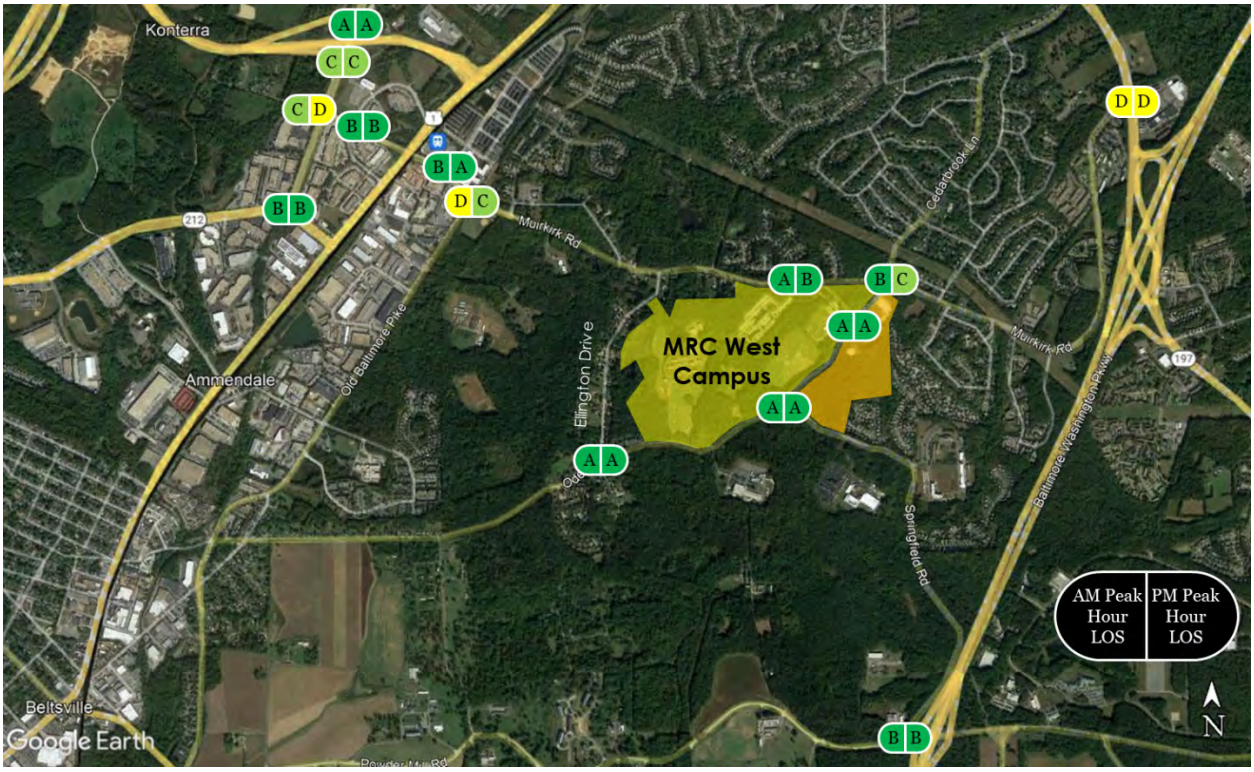

Figure 19: Phase 3 Action Condition with Mitigation Overall Intersection LOS

TRANSPORATION DEMAND MANAGEMENT

In addition to the proposed mitigation measures, it is recommended that FDA engage in the continual update of a robust TMP which outlines a variety of TDM strategies that can be used to reduce single occupancy vehicle trips, and thus reduce the overall impact to the study area roadway network. A TMP document has been prepared for the MRC West Campus as part of this overall analysis process, and is included in Appendix D. Recommendations include:

- Campus-wide Employee Transportation Coordinator(s)
- Improved communication with employees, including websites, apps, new employee transportation information package, raffles and competitions, etc.
- Improved carpool and vanpool incentives, including ride matching and establishing service corridors where many employees live.
- Transit incentives such as real-time transit information, transit subsidies, improved/safer transit facilities, additional commuter services.
- Telecommuting programs, including incentives to encourage telecommuting on peak commuting days (Tuesday – Thursday).
- Flexible work schedule program, including incentives to encourage flexible days off on peak commuting days (Tuesday – Thursday).
- Improvements to on and off-campus pedestrian and bicycle facilities.
- Parking policies, including preferential parking, parking reduction programs, smart parking, etc.
- Enhancing last-mile connectivity through shuttle services, improved pedestrian and bicycle connections, and bikeshare or scooters.
- A transportation center that can include areas for buses, shuttles, taxi's/TNCs, and future autonomous vehicles.

CHAPTER 3: CONCLUSIONS

The results of the study show that the addition of 1,500 employees to the MRC West Campus would have a moderate adverse impact on traffic conditions at some intersections within the study area. Given the congested nature of the study area corridors, the additional developments in the area, combined with trips generated by the proposed consolidation would require some mitigation measures. Recommended mitigation measures include signal timing and coordination improvements, as well as the following physical improvements:

PHASE 2 (2030) ACTION CONDITION (ALTERNATIVES A AND C) MITIGATION

- **Virginia Manor Road (MD 206)/Konterra Drive and Muirkirk Road:**
  - Provide a second southbound left-turn lane from Konterra Drive onto eastbound Muirkirk Road.
  - Provide a second westbound left-turn lane from Muirkirk Road onto southbound Muirkirk Road and eliminate the split phasing for the Muirkirk Road approaches.
- **Virginia Manor Road /Ritz Way (MD 212) and Virginia Manor Road (MD 206):**
  - Install a traffic signal that is coordinated with the other signals along Virginia Manor Road/Konterra Drive (MD 206). A roundabout could also be considered at this intersection but would require further investigation.
- **Muirkirk Road and Muirkirk Meadows Drive:**
  - Install a traffic signal that is coordinated with the other nearby traffic signals on Muirkirk Road.
- **Muirkirk Road and Old Baltimore Pike/Cedarhurst Drive:**
  - Construct separate right-turn only lane from eastbound Muirkirk Road to southbound Old Baltimore Pike.
- **Muirkirk Road and Pasture Road/Snowden Woods Road:**
  - Install a traffic signal at the intersection. A roundabout could also be considered at this location. However, this would warrant further investigation as additional right-of-way (ROW) may be required.
- **Powder Mill Road and Springfield Road:**
  - Install a traffic signal at this intersection and provide separate right and left-turn lanes on westbound and eastbound Powder Mill Road, respectfully. This is also a recommendation contained in the *Bureau of Engraving and Printing Transportation Impact Study* (2020), prepared by Alliance Consulting Group. It is assumed that this signal would be implemented as part of the Bureau of Engraving and Printing project.
- **Muirkirk Road/Crystal Plaza and Laurel Bowie Road (MD 197):**
  - Provide two northbound and southbound left-turn lanes from MD 197 to Muirkirk Road/Crystal Plaza.
  - Provide a second eastbound left-turn lane from Muirkirk Road to northbound MD 197.

PHASE 2 (2030) ACTION CONDITION (ALTERNATIVE B) MITIGATION

- **Virginia Manor Road (MD 206)/Konterra Drive and Muirkirk Road:**
  - Provide a second southbound left-turn lane from Konterra Drive onto eastbound Muirkirk Road.
  - Provide a second westbound left-turn lane from Muirkirk Road onto southbound Muirkirk Road and eliminate the split phasing for the Muirkirk Road approaches.
- **Virginia Manor Road /Ritz Way (MD 212) and Virginia Manor Road (MD 206):**
  - Install a traffic signal that is coordinated with the other signals along Virginia Manor Road/Konterra Drive (MD 206). A roundabout could also be considered at this intersection but would require further investigation.
- **Muirkirk Road and Muirkirk Meadows Drive:**
  - Install a traffic signal that is coordinated with the other nearby traffic signals on Muirkirk Road.
- **Muirkirk Road and Old Baltimore Pike/Cedarhurst Drive:**
  - Restripe the eastbound Muirkirk Road approach to consist of one left-turn lane, one through lane, and one right-turn only lane.
- **Muirkirk Road and Pasture Road/Snowden Woods Road:**
  - Install a traffic signal at the intersection. A roundabout could also be considered at this location. However, this would warrant further investigation as additional right-of-way (ROW) may be required.
- **Powder Mill Road and Springfield Road:**
  - Install a traffic signal at this intersection and provide separate right and left-turn lanes on westbound and eastbound Powder Mill Road, respectfully. This is also a recommendation contained in the *Bureau of Engraving and Printing Transportation Impact Study* (2020), prepared by Alliance Consulting Group. It is assumed that this signal would be implemented as part of the Bureau of Engraving and Printing project.

PHASE 3 (2040) ACTION CONDITION (ALTERNATIVES A, B, C) ADDITIONAL MITIGATION

- **Konterra Drive and MD 200 Off-Ramp:**
  - Provide a second eastbound right-turn lane from the MD 200 ramp onto southbound Konterra Drive.
- **Virginia Manor Road (MD 206)/Konterra Drive and Muirkirk Road:**
  - Provide a third southbound left-turn lane from Konterra Drive onto eastbound Muirkirk Road and construct a third receiving lane on Muirkirk Road that would become a right-turn only lane at Muirkirk Meadows Drive.
- **Muirkirk Road and Old Baltimore Pike/Cedarhurst Drive:**
  - Modify the southbound Cedarhurst Drive approach to consist of one shared through-right lane and one shared through-left lane.
- **Muirkirk Road/Crystal Plaza and Laurel Bowie Road (MD 197):**
  - Provide two northbound and southbound left-turn lanes from MD 197 to Muirkirk Road/Crystal Plaza (if not already constructed in Phase 2).
  - Provide a second eastbound left-turn lane from Muirkirk Road to northbound MD 197 (if not already constructed in Phase 2).

It should be noted that other nearby developments and background traffic growth will have a significant adverse impact on many of the study area intersections and that most of the operational deficiencies would exist in the No Action Condition. Although mitigation measures were considered at all study intersections in this assessment to address operational deficiencies that are present in the No Action Condition and Action Conditions, the proposed additional growth at the MRC West Campus has a limited effect on roadway operations as traffic spreads out on the network from the site. Many of the impacts that are experienced on the intersections that are over one mile from the site are largely due to the No Action Condition and other developments. Thus, the full extent of the improvements needed in this area should not be the sole responsibility of future projects at the MRC West Campus.

Additionally, the Konterra Town Center – East development, which was approved in 2009 but has since not been started, was included in this analysis. This development is anticipated to generate a significant number of trips. Therefore, prior to the implementation of any of the mitigation measures west of the US 1 corridor, the status of the Konterra Town Center development should be re-evaluated. It is likely that many of the mitigation measures would not be required if the Konterra Town Center development does not proceed.

Furthermore, this study was conducted utilizing data that was collected prior to the COVID-19 pandemic. COVID-19 has significantly changed commute patterns, and it is anticipated that these changes will have a long-term impact, even after the pandemic is over, that may include an increased number of employees working from home, as well as a reluctance for people to use mass transit or ride in carpool or vanpool vehicles. Therefore, it is recommended that the intersections identified as requiring mitigation be re-evaluated in the future at the time of permitting for the new office buildings proposed in the Master Plan, to determine if the mitigation recommendations are still applicable.

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Appendix A: Exhibits

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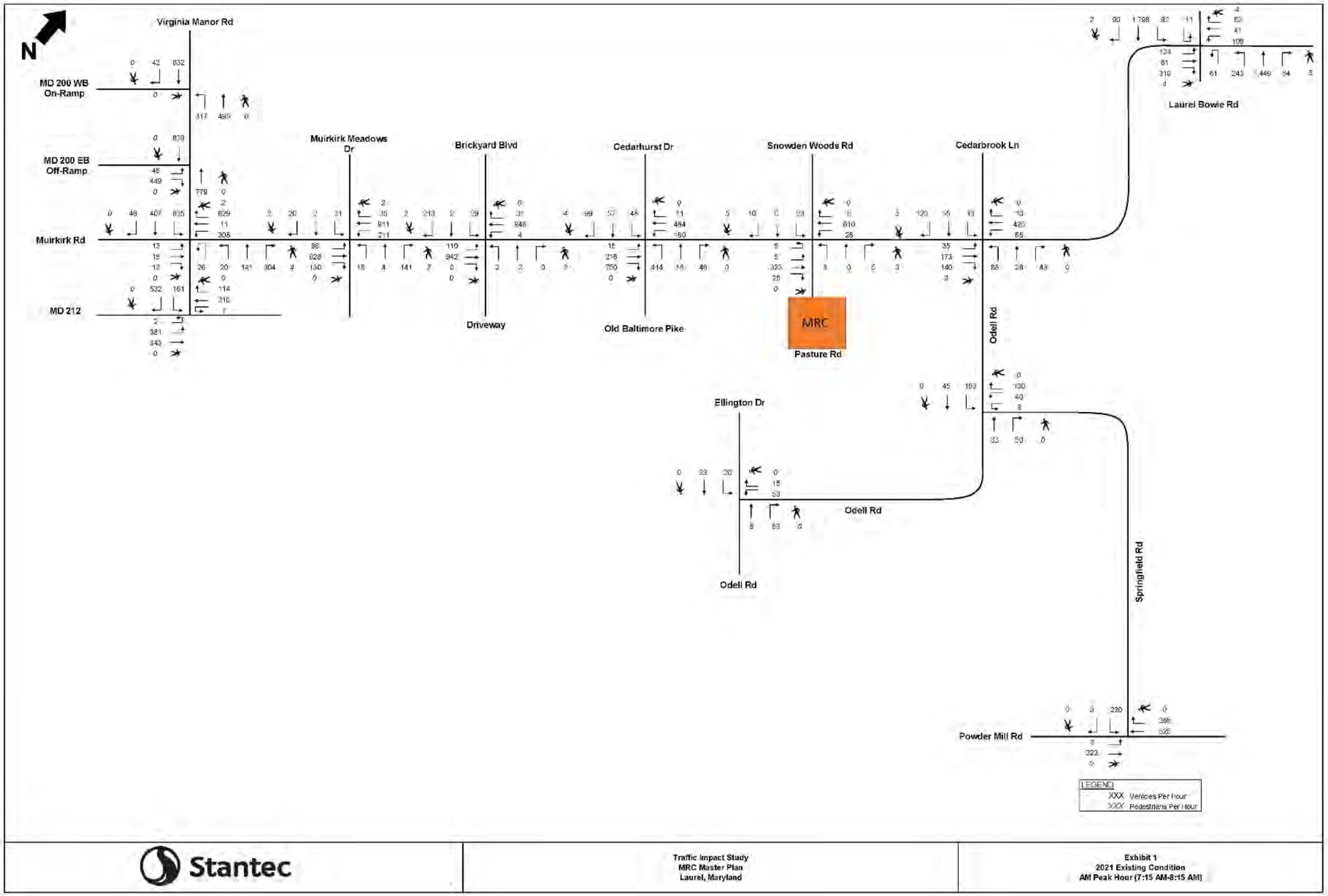
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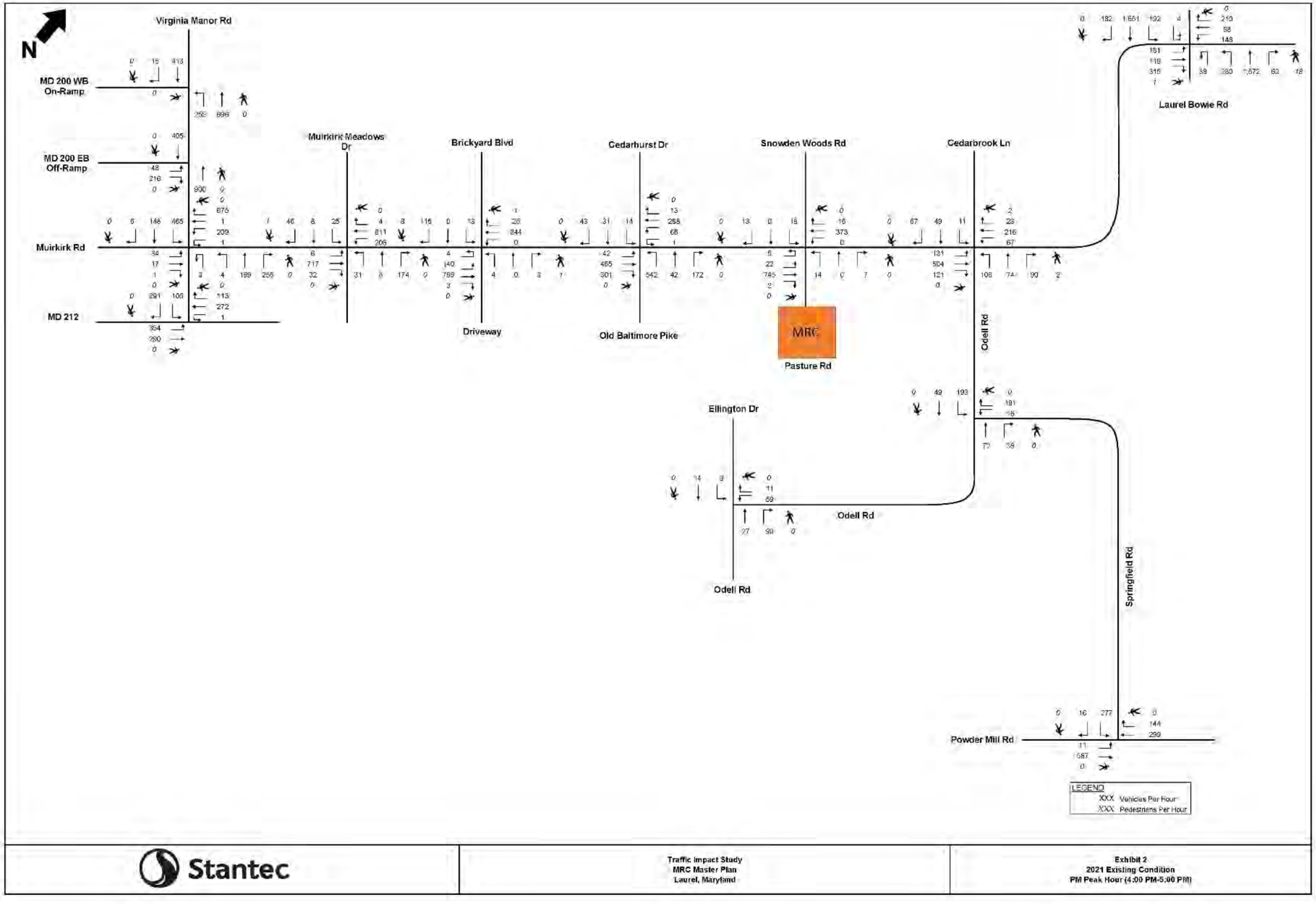
Virginia Manor Rd
MD 200 WB On-Ramp
MD 200 EB Off-Ramp
Muirkirk Rd
MD 212
Muirkirk Meadows Dr
Brickyard Blvd
Driveway
Cedarhurst Dr
Old Baltimore Pike
Snowden Woods Rd
MRC
Pasture Rd
Cedarbrook Ln
Laurel Bowie Rd
Odell Rd
Ellington Dr
Odell Rd
Odell Rd
Springfield Rd
Powder Mill Rd
LEGEND
XXX Vehicles Per Hour
XXX Pedestrians Per Hour
Stantec
Traffic Impact Study
MRC Master Plan
Laurel, Maryland
Exhibit 1
2021 Existing Condition
AM Peak Hour (7:15 AM-8:15 AM)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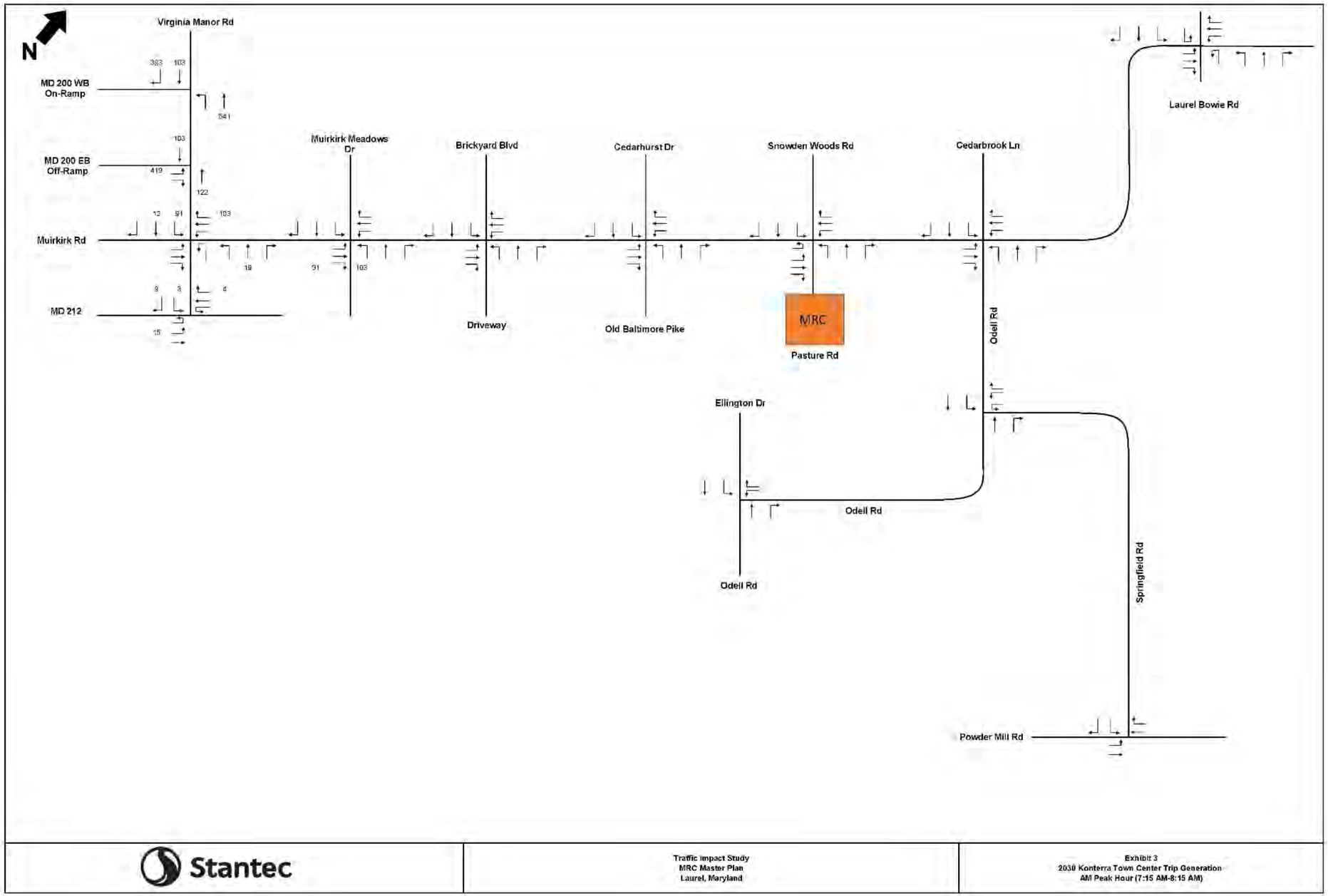
Virginia Manor Rd
MD 200 WB On-Ramp
MD 200 EB Off-Ramp
Muirkirk Rd
MD 212
Muirkirk Meadows Dr
Brickyard Blvd
Driveway
Cedarhurst Dr
Old Baltimore Pike
Snowden Woods Rd
MRC
Pasture Rd
Cedarbrook Ln
Odell Rd
Laurel Bowie Rd
Ellington Dr
Odell Rd
Odell Rd
Springfield Rd
Powder Mill Rd
LEGEND
XXX Vehicles Per Hour
XXX Pedestrians Per Hour
Stantec
Traffic Impact Study
MRC Master Plan
Laurel, Maryland
Exhibit 2
2021 Existing Condition
PM Peak Hour (4:00 PM-5:00 PM)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Virginia Manor Rd
MD 200 WB On-Ramp
MD 200 EB Off-Ramp
Muirkirk Rd
MD 212
Muirkirk Meadows Dr
Brickyard Blvd
Driveway
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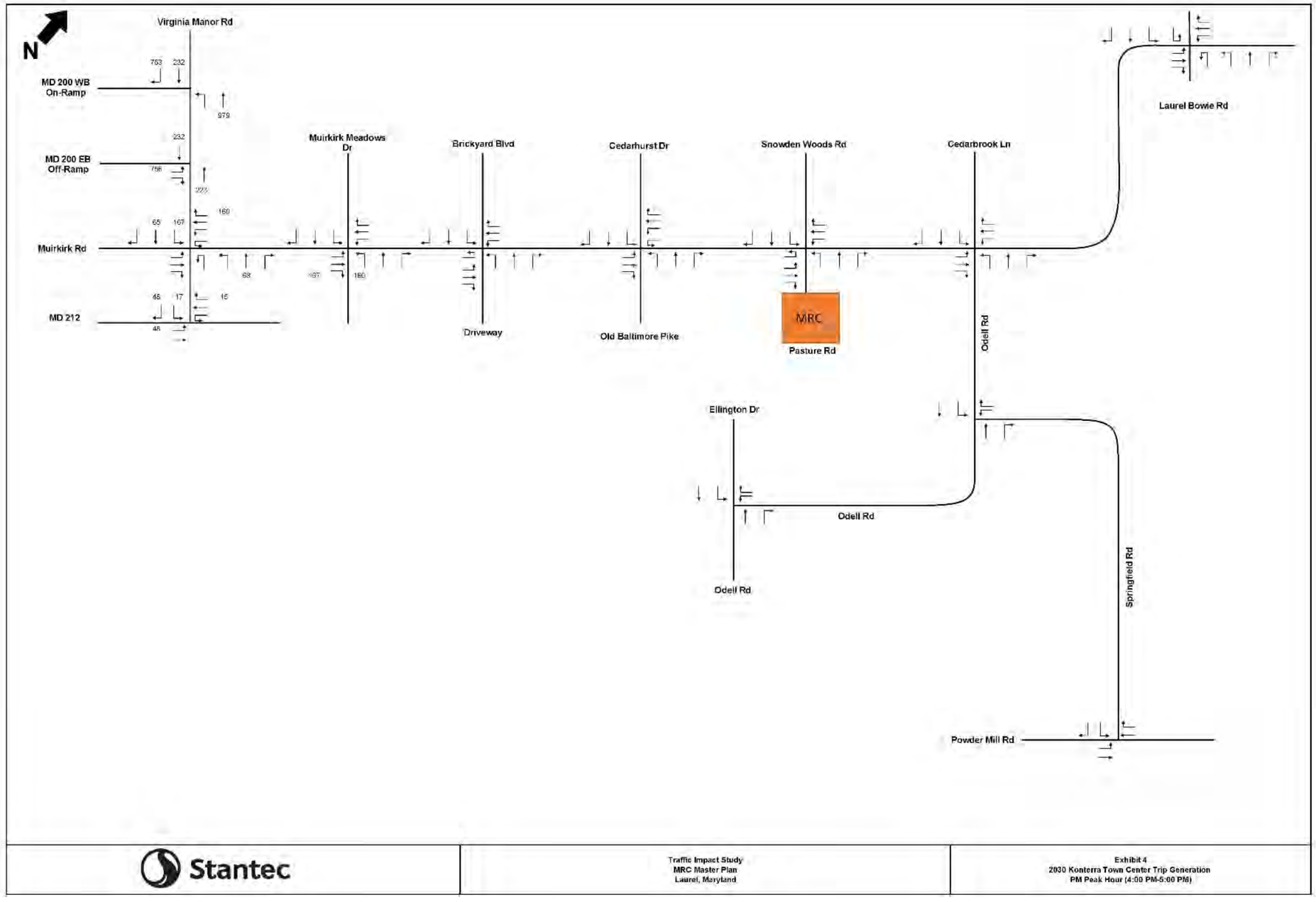
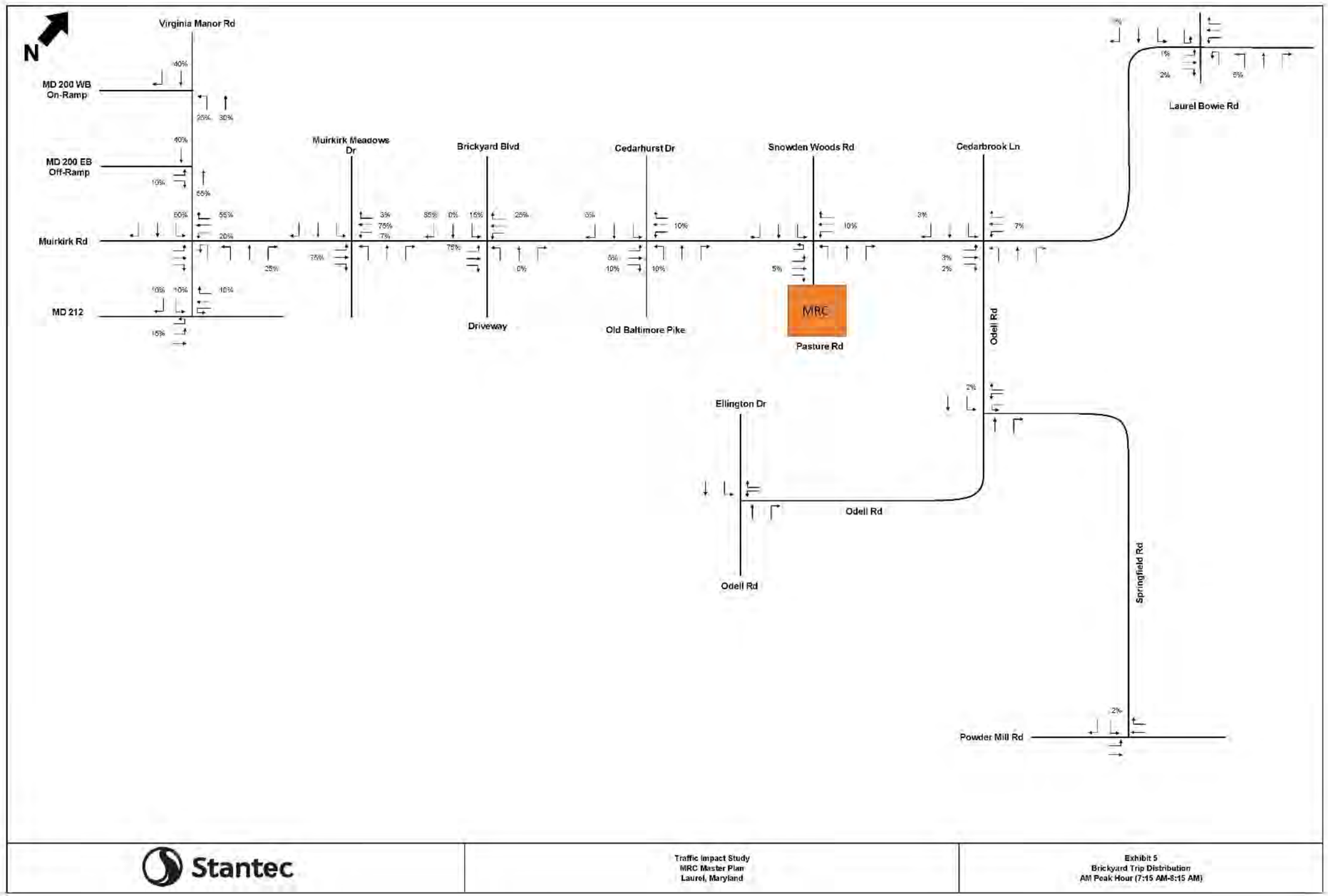
Old Baltimore Pike
Snowden Woods Rd
MRC
Pasture Rd
Cedarbrook Ln
Laurel Bowie Rd
Odell Rd
Ellington Dr
Odell Rd
Springfield Rd
Powder Mill Rd
Stantec
Traffic Impact Study
MRC Master Plan
Laurel, Maryland
Exhibit 3
2030 Konterra Town Center Trip Generation
AM Peak Hour (7:15 AM-8:15 AM)



Stantec	Traffic Impact Study MRC Master Plan Laurel, Maryland	Exhibit 4 2030 Konterra Town Center Trip Generation PM Peak Hour (4:00 PM-5:00 PM)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Virginia Manor Rd
MD 200 WB On-Ramp
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Muirkirk Rd
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Driveway
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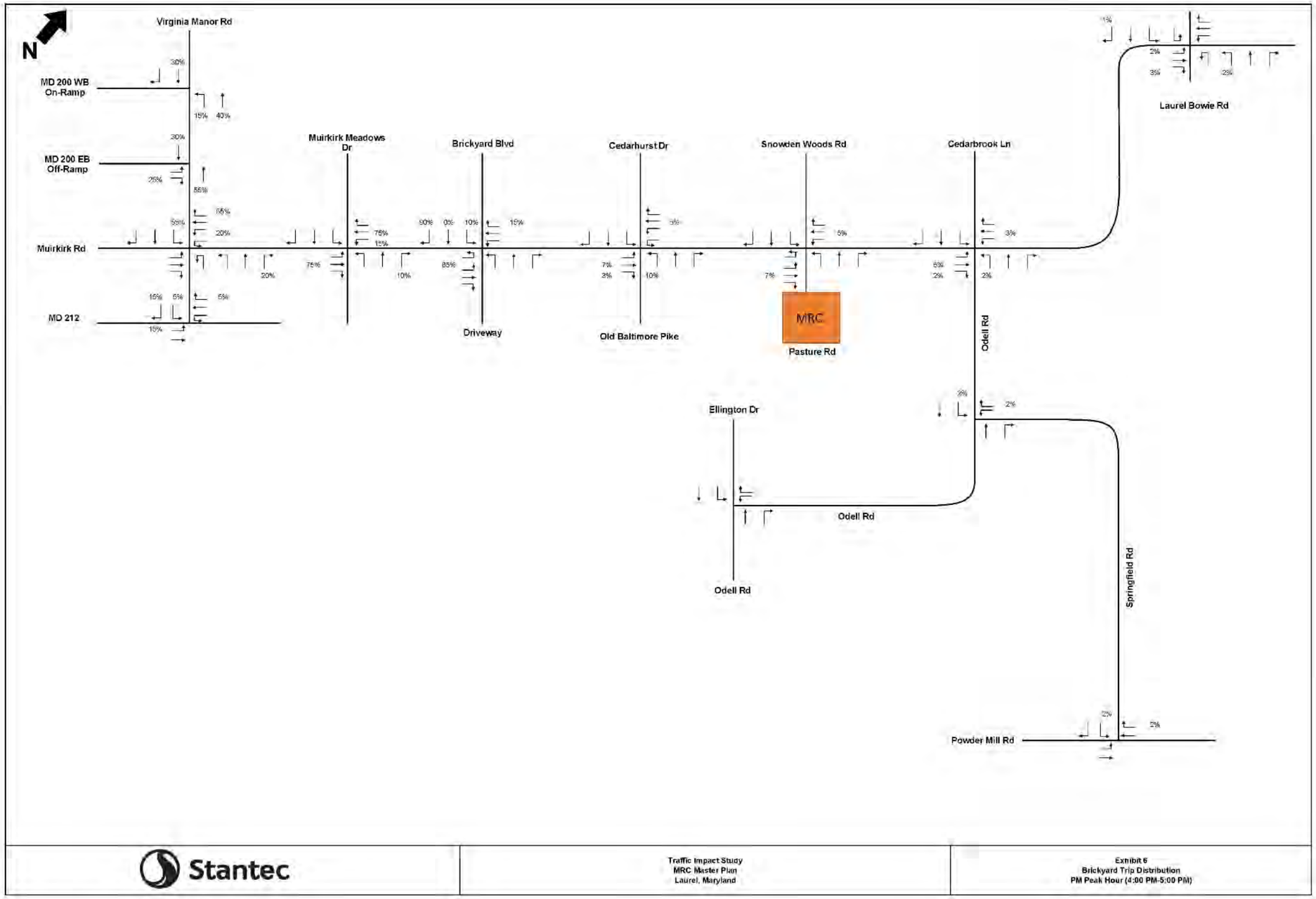
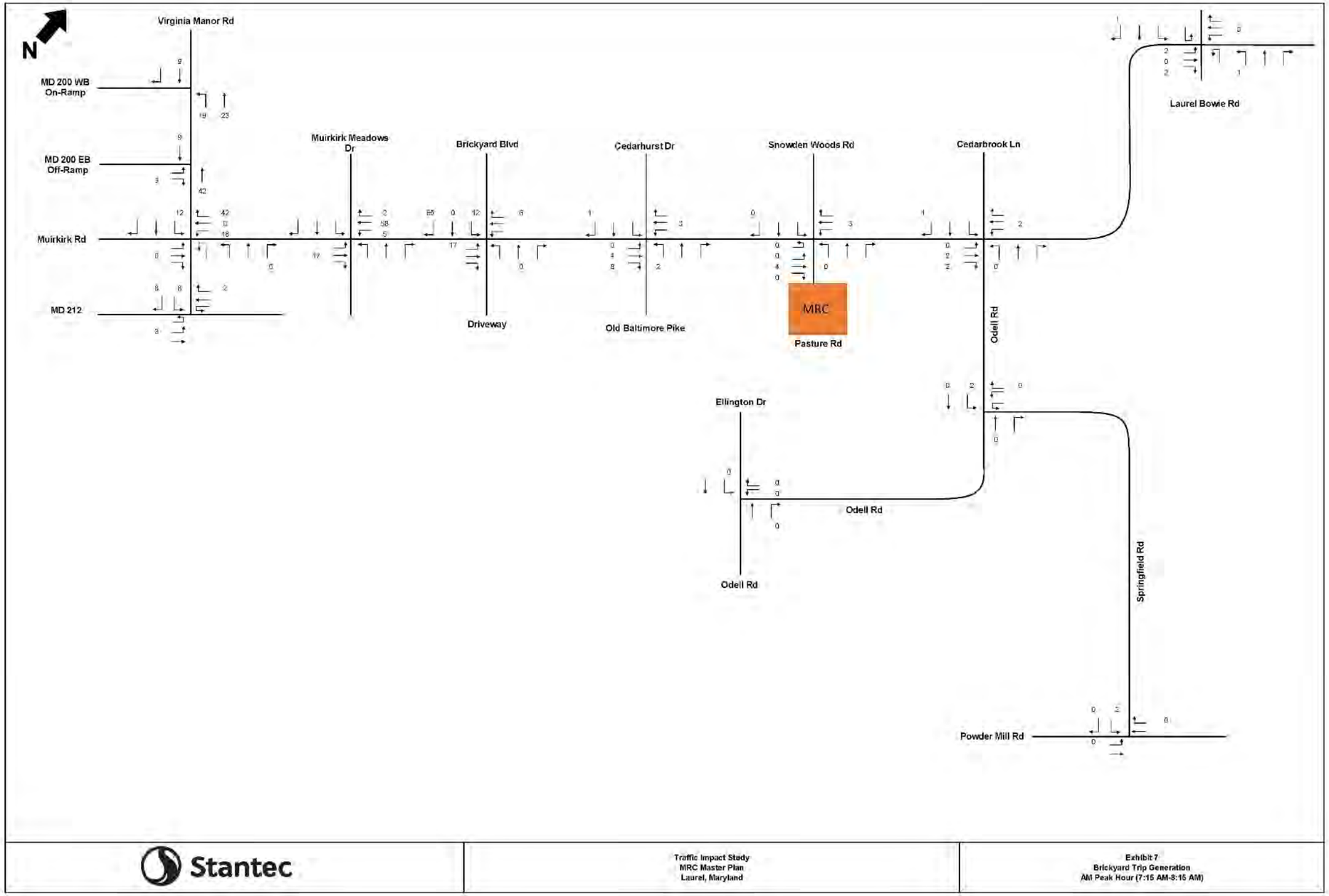
Old Baltimore Pike
Snowden Woods Rd
MRC
Pasture Rd
Cedarbrook Ln
Odell Rd
Laurel Bowie Rd
Ellington Dr
Odell Rd
Odell Rd
Springfield Rd
Powder Mill Rd
Stantec
Traffic Impact Study
MRC Master Plan
Laurel, Maryland
Exhibit 5
Brickyard Trip Distribution
AM Peak Hour (7:15 AM-8:15 AM)



Stantec

Traffic Impact Study
MRC Master Plan
Laurel, Maryland

Exhibit 6
Brickyard Trip Distribution
PM Peak Hour (4:00 PM-5:00 PM)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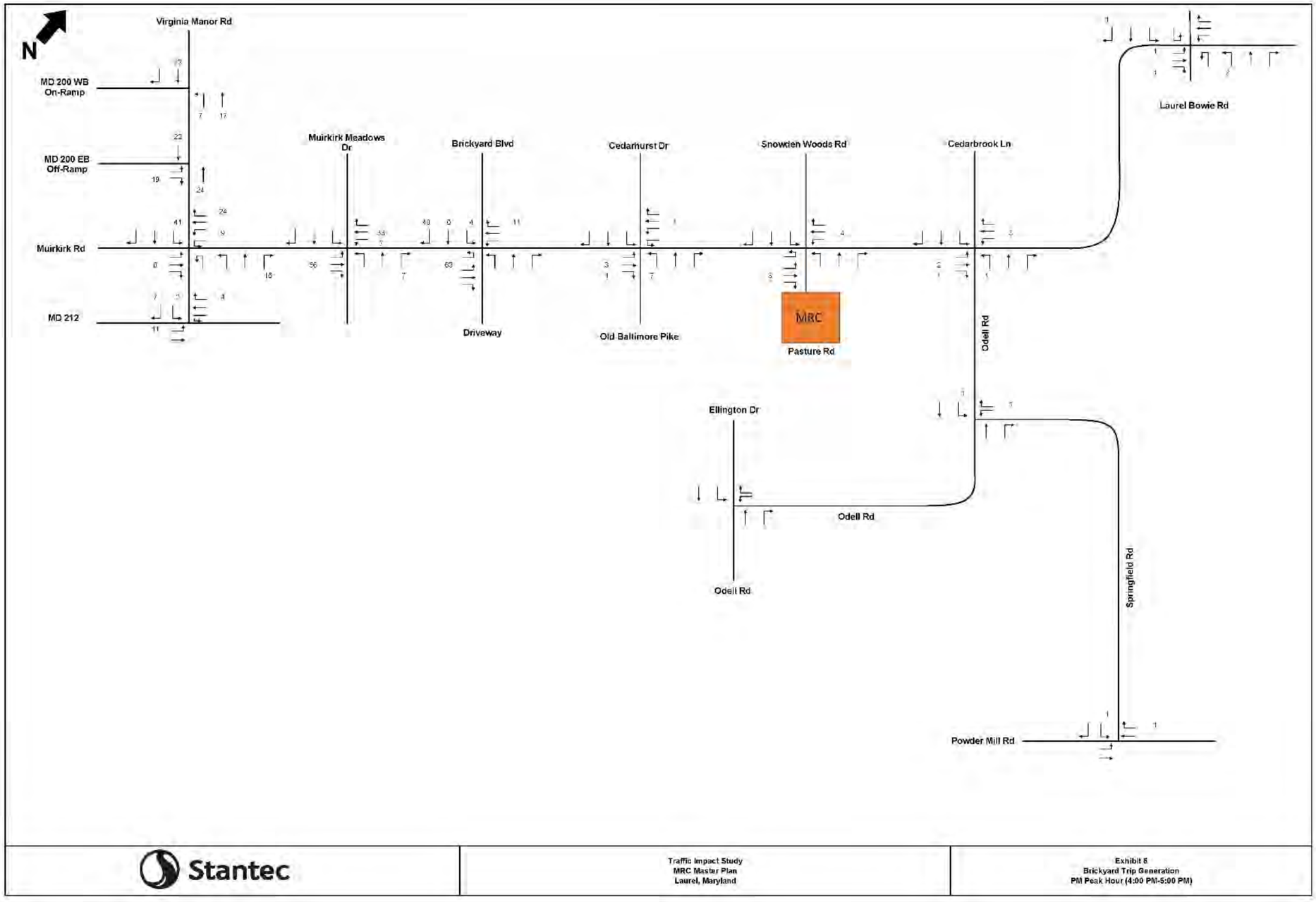
Virginia Manor Rd
MD 200 WB On-Ramp
MD 200 EB Off-Ramp
Muirkirk Rd
MD 212
Muirkirk Meadows Dr
Brickyard Blvd
Driveway
Cedarhurst Dr
Old Baltimore Pike
Snowden Woods Rd
MRC
Pasture Rd
Cedarbrook Ln
Laurel Bowie Rd
Odell Rd
Ellington Dr
Odell Rd
Springfield Rd
Powder Mill Rd
Stantec
Traffic Impact Study
MRC Master Plan
Laurel, Maryland
Exhibit 7
Brickyard Trip Generation
AM Peak Hour (7:15 AM-8:15 AM)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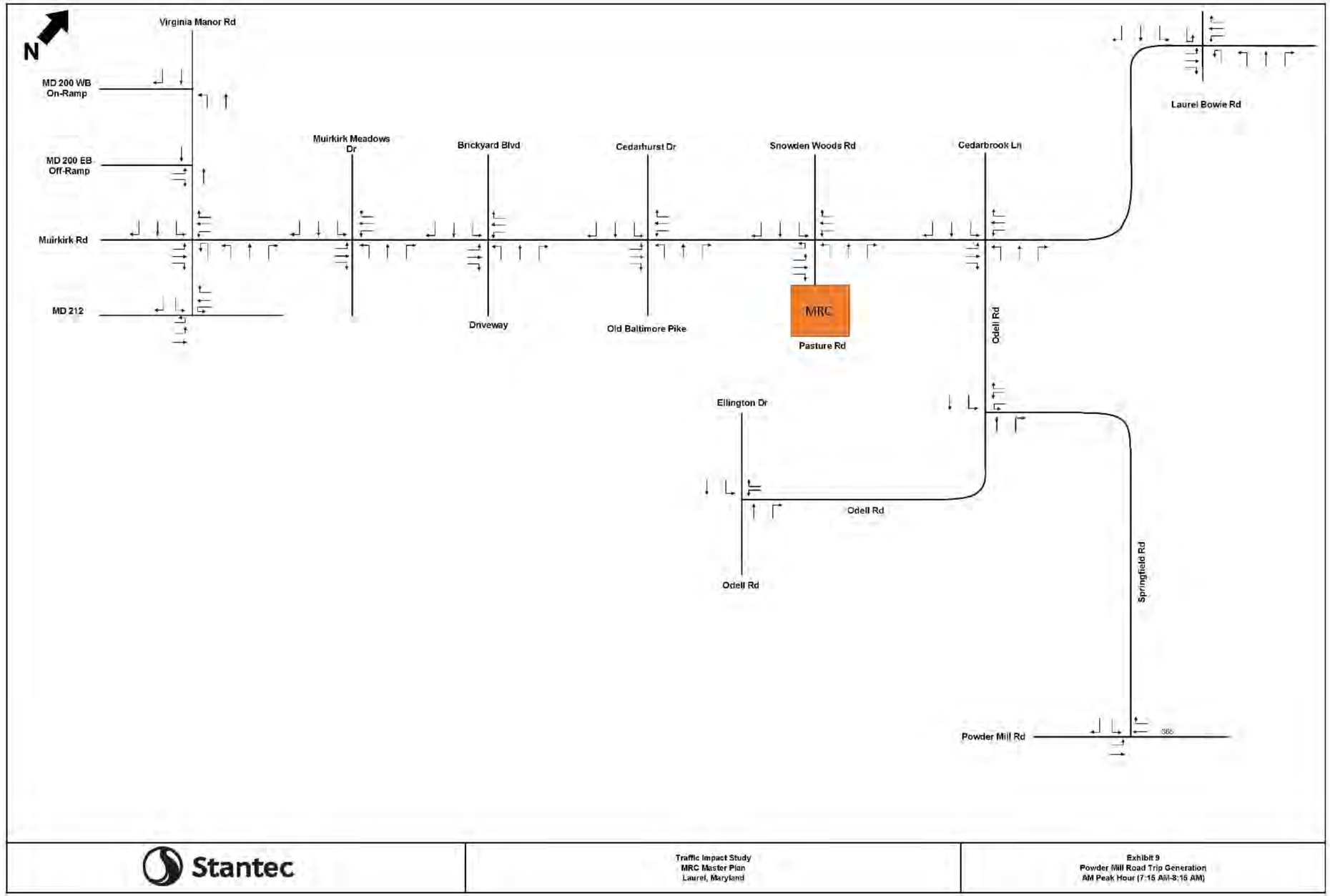
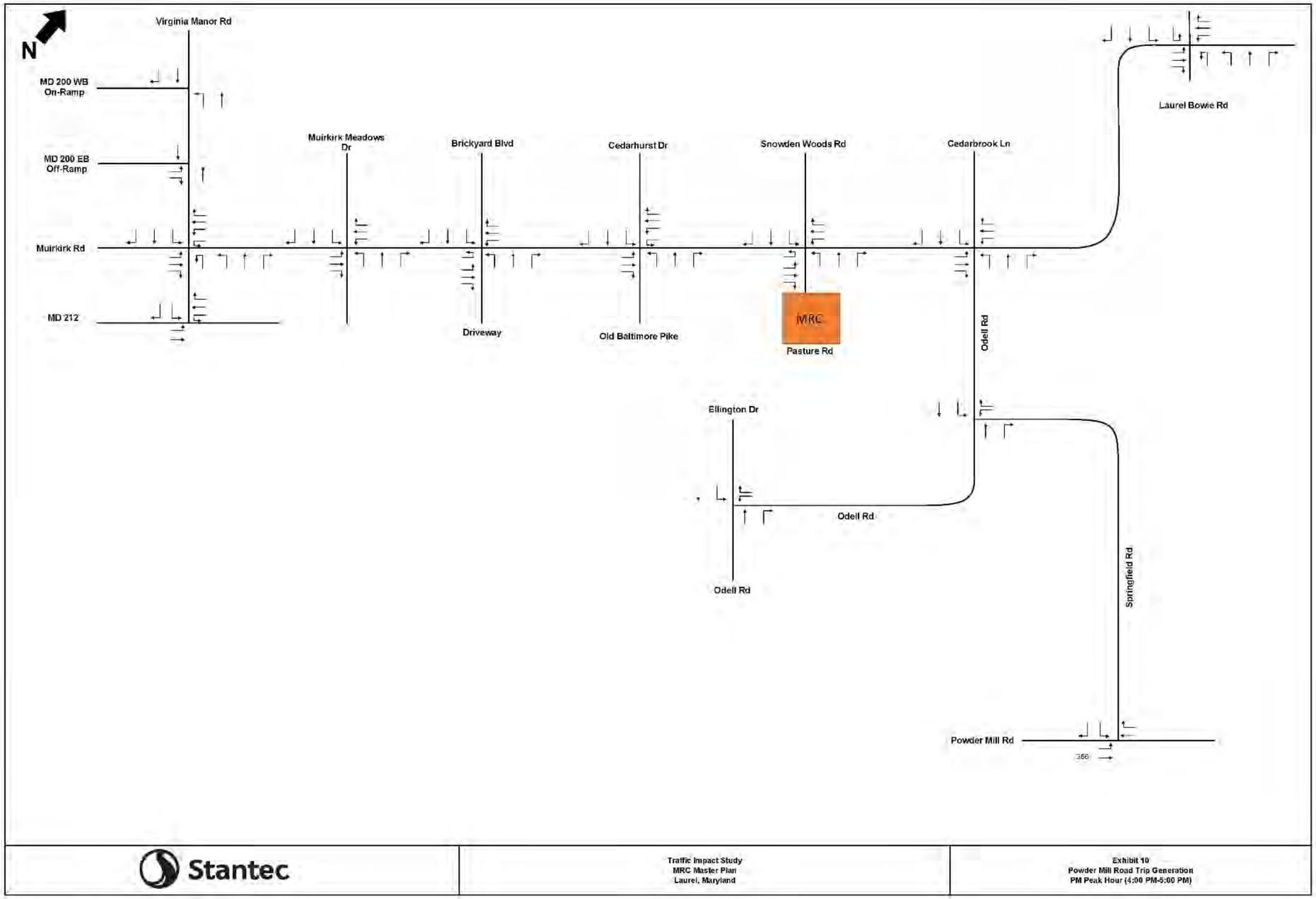
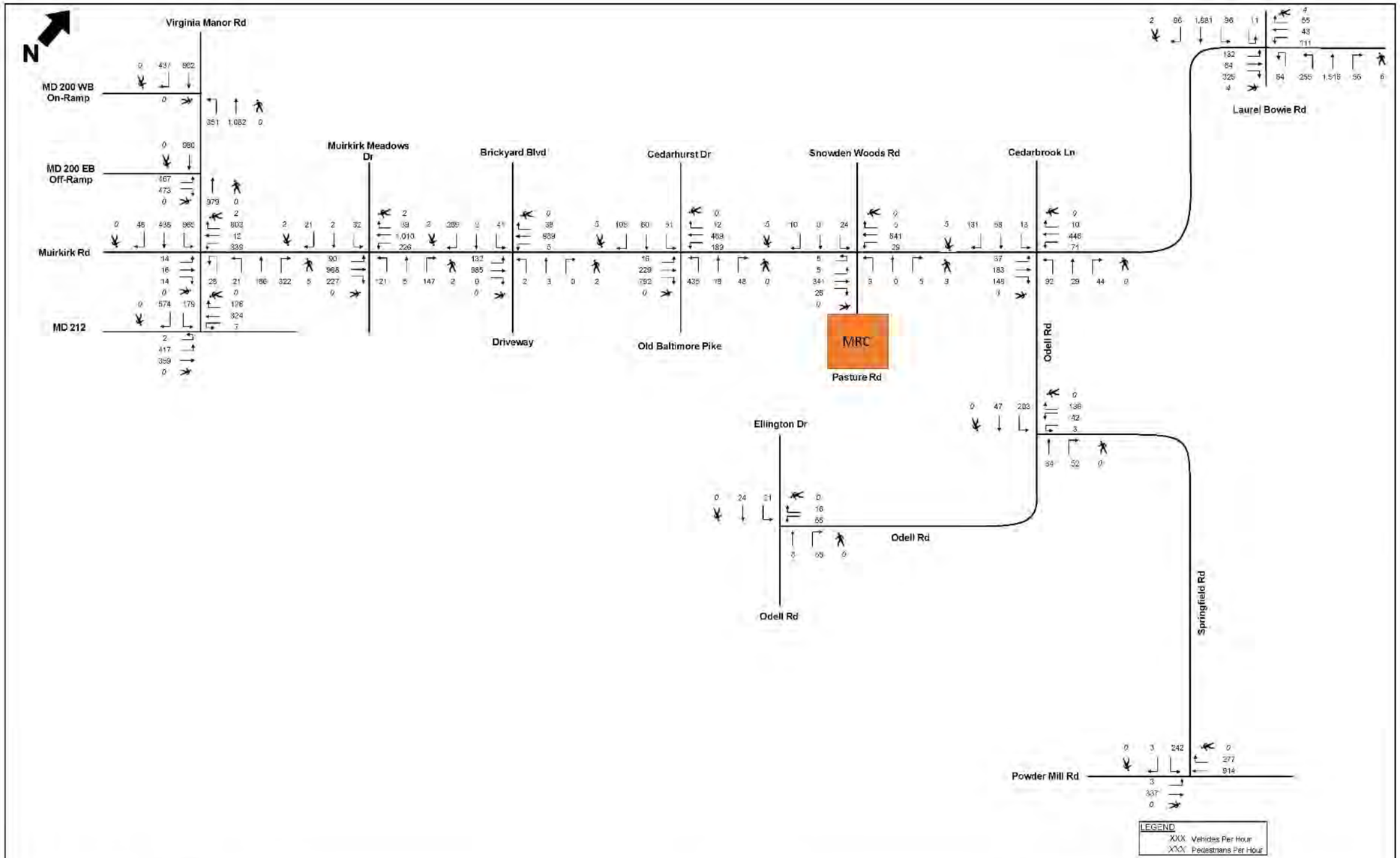
Virginia Manor Rd
MD 200 WB On-Ramp
MD 200 EB Off-Ramp
Muirkirk Rd
MD 212
Muirkirk Meadows Dr
Brickyard Blvd
Driveway
Cedarhurst Dr
Old Baltimore Pike
Snowden Woods Rd
MRC
Pasture Rd
Cedarbrook Ln
Laurel Bowie Rd
Odell Rd
Ellington Dr
Odell Rd
Springfield Rd
Powder Mill Rd
Stantec
Traffic Impact Study
MRC Master Plan
Laurel, Maryland
Exhibit 8
Brickyard Trip Generation
PM Peak Hour (4:00 PM-5:00 PM)


N
Virginia Manor Rd
MD 200 WB On-Ramp
MD 200 EB Off-Ramp
Muirkirk Rd
MD 212
Muirkirk Meadows Dr
Brickyard Blvd
Driveway
Cedarhurst Dr
Old Baltimore Pike
Snowden Woods Rd
MRC
Pasture Rd
Cedarbrook Ln
Odell Rd
Laurel Bowie Rd
Ellington Dr
Odell Rd
Odell Rd
Springfield Rd
Powder Mill Rd
Stantec
Traffic Impact Study
MRC Master Plan
Laurel, Maryland
Exhibit 9
Powder Mill Road Trip Generation
AM Peak Hour (7:15 AM-8:15 AM)

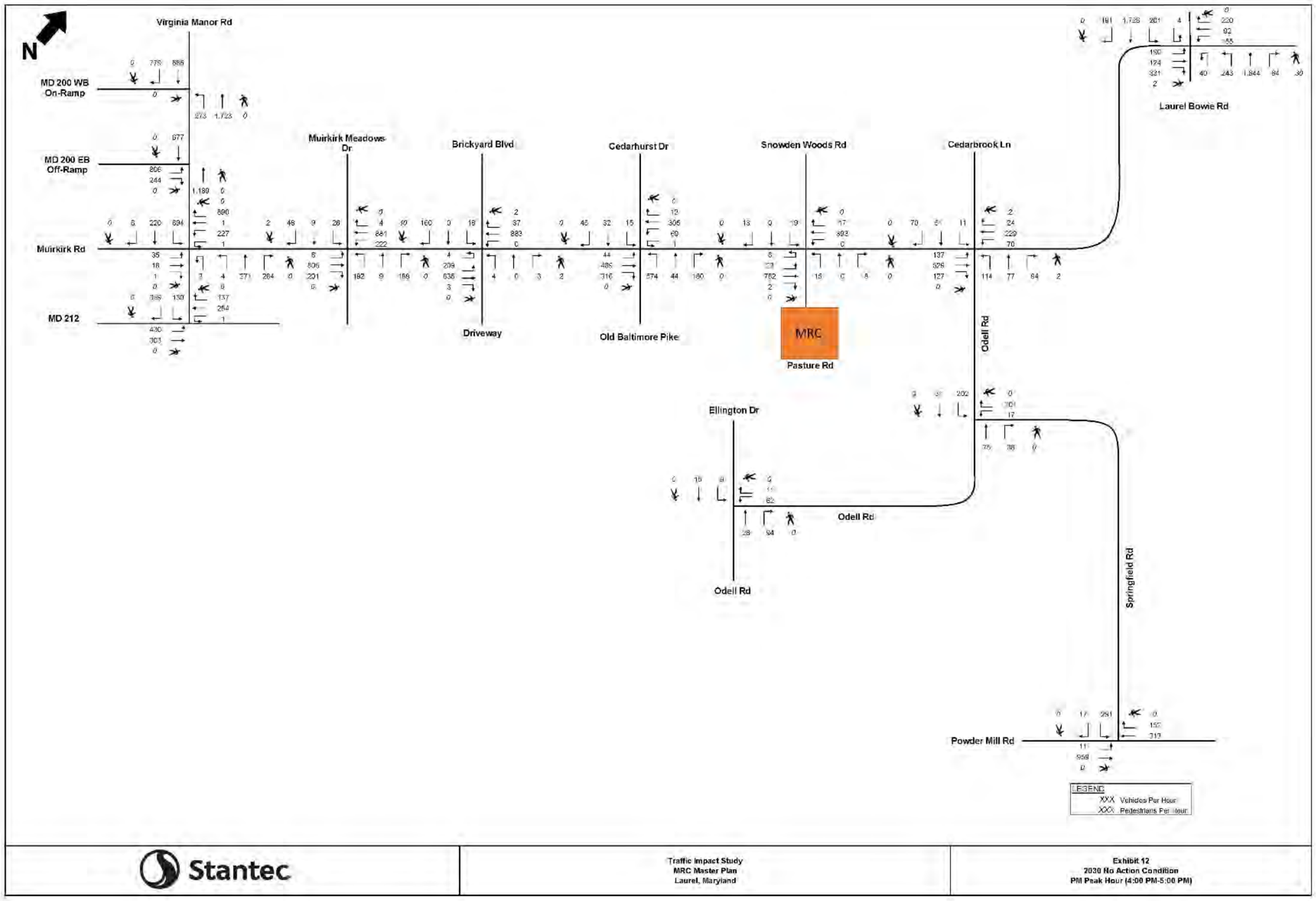

N
Virginia Manor Rd
MD 200 WB On-Ramp
MD 200 EB Off-Ramp
Muirkirk Rd
MD 212
Muirkirk Meadows Dr
Brickyard Blvd
Driveway
Cedarhurst Dr
Old Baltimore Pike
Snowden Woods Rd
MRC
Pasture Rd
Cedarbrook Ln
Laurel Bowie Rd
Odell Rd
Ellington Dr
Odell Rd
Odell Rd
Springfield Rd
Powder Mill Rd
356
Stantec
Traffic Impact Study
MRC Master Plan
Laurel, Maryland
Exhibit 10
Powder Mill Road Trip Generation
PM Peak Hour (4:00 PM-5:00 PM)

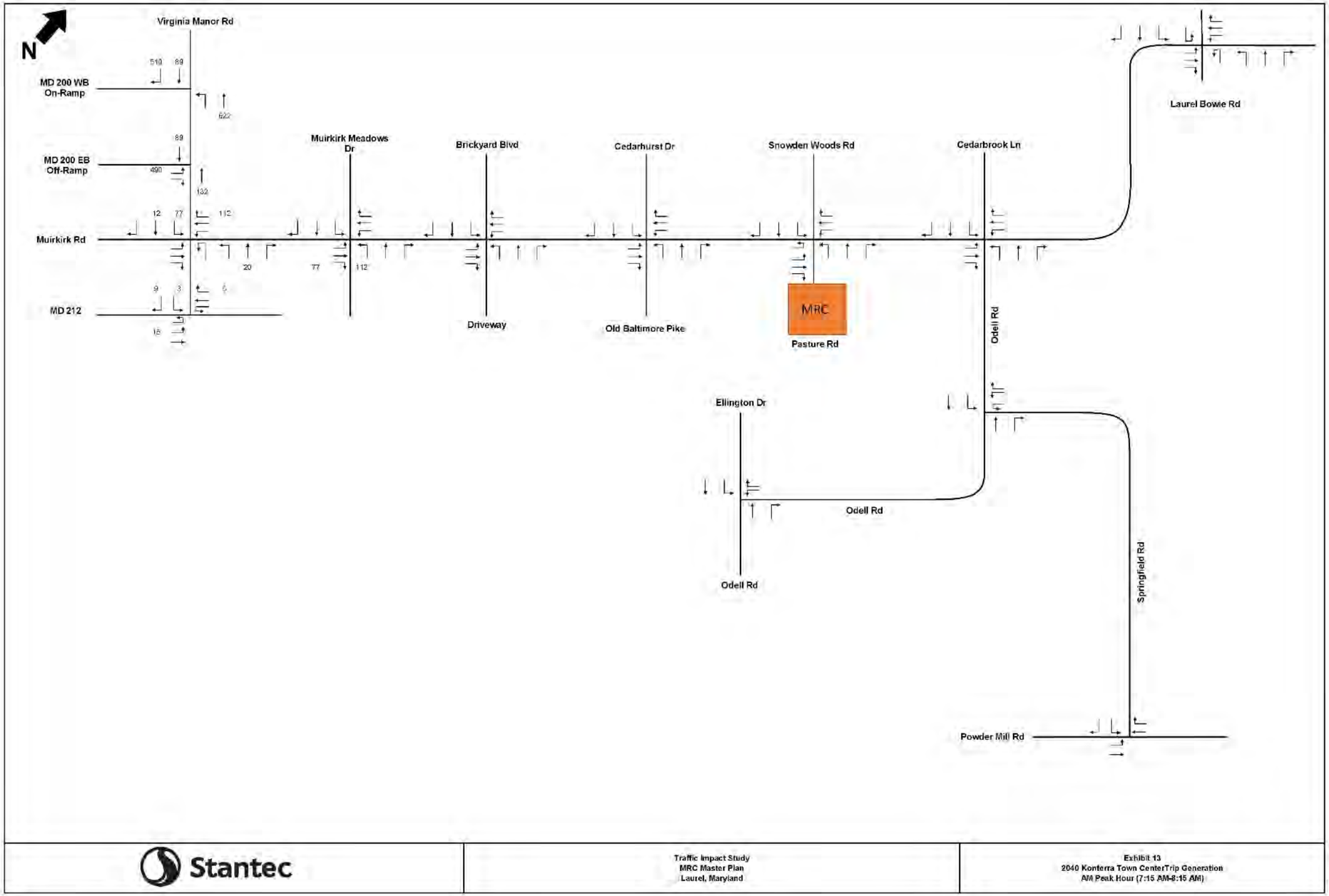


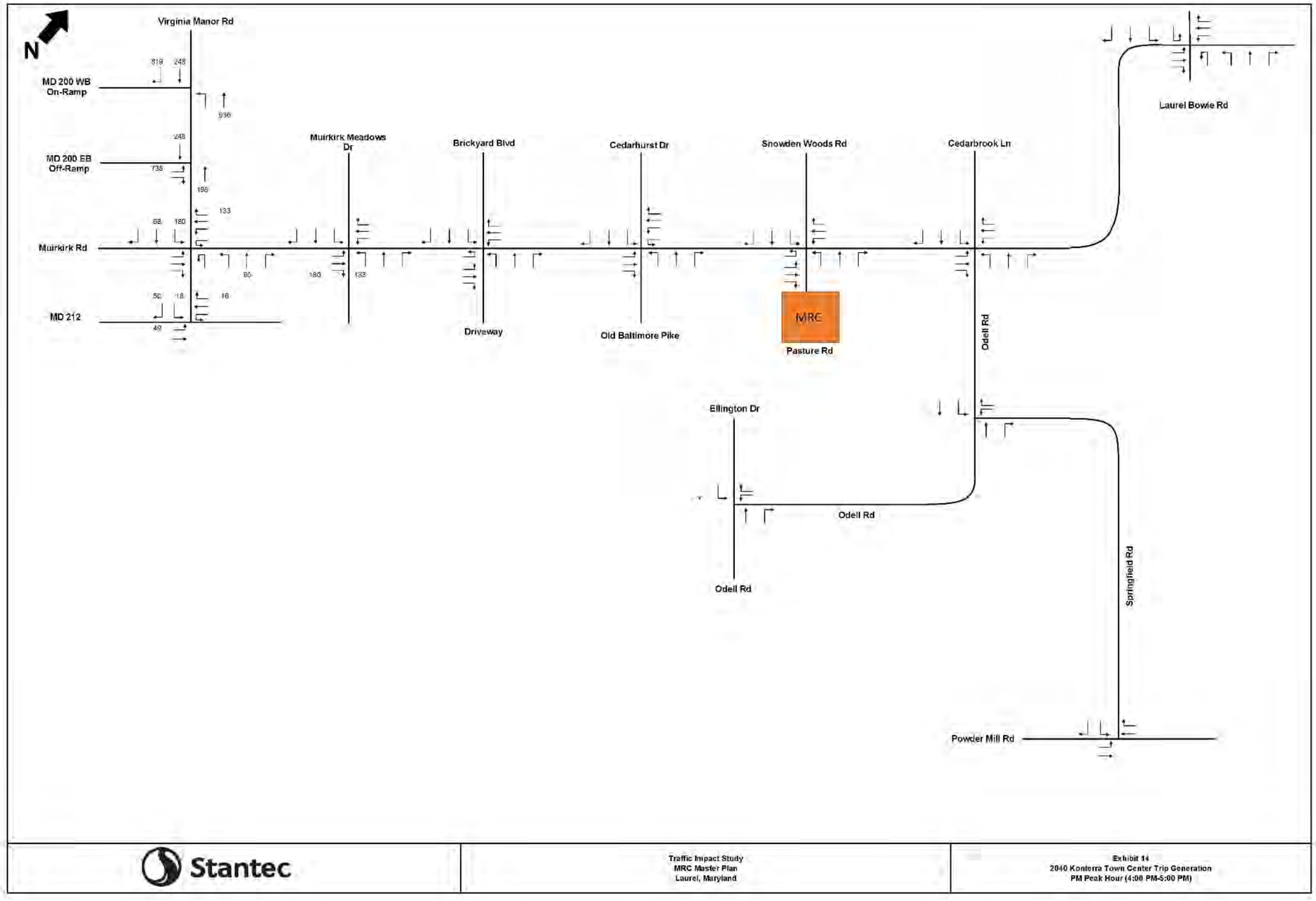
Stantec

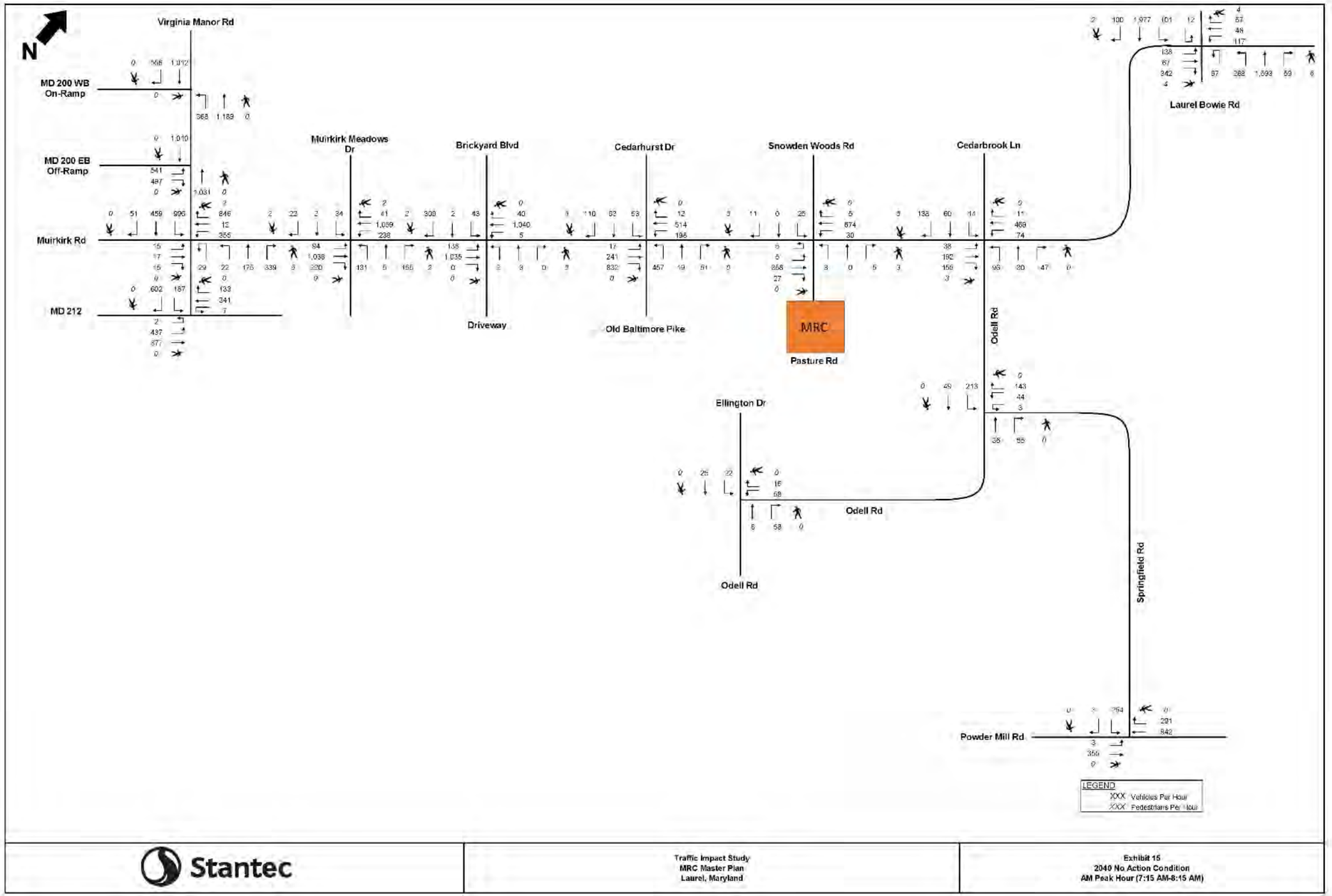
Traffic Impact Study
MRC Master Plan
Laurel, Maryland

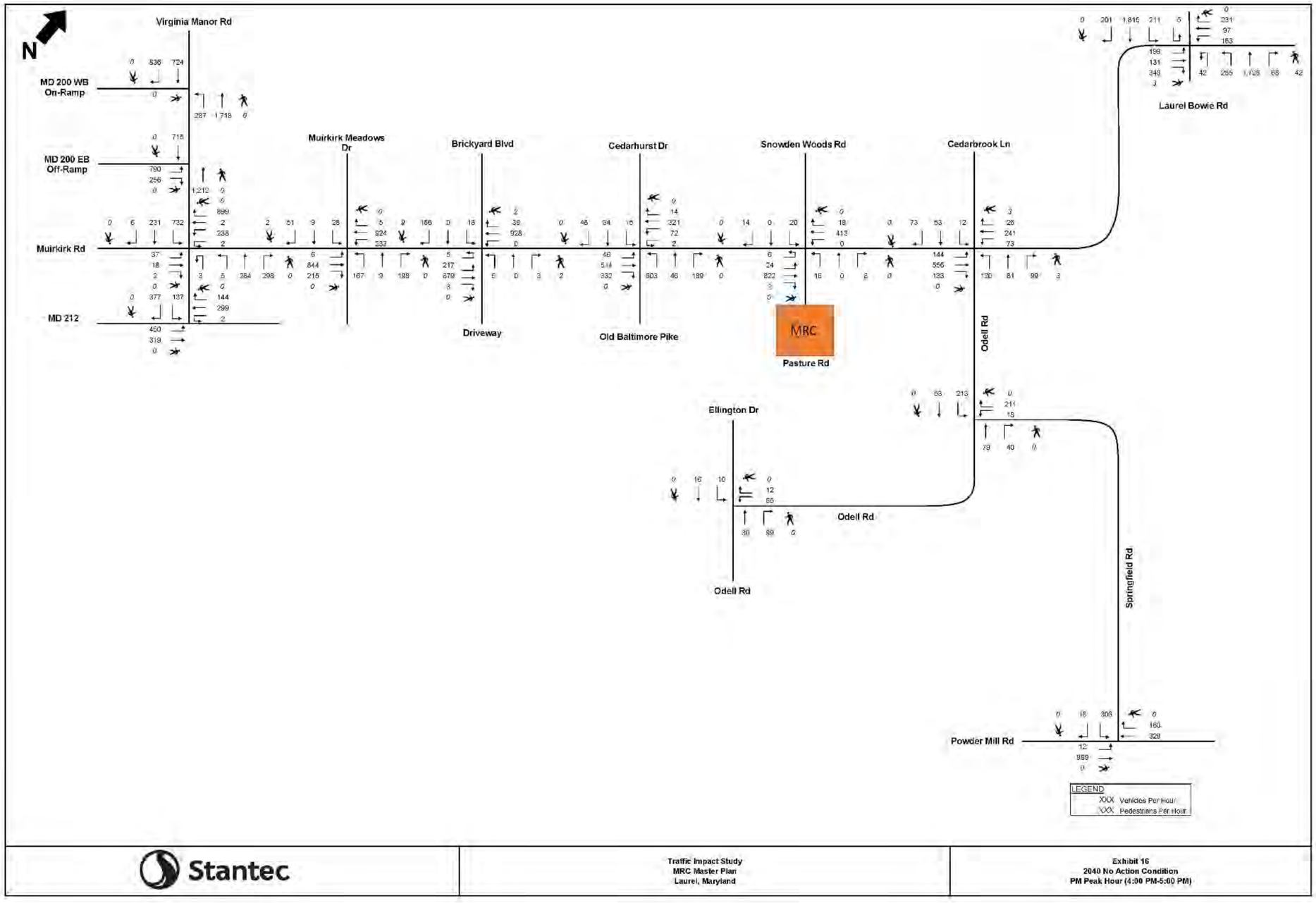
Exhibit 11
2030 No Action Condition
AM Peak Hour (7:15 AM-8:15 AM)

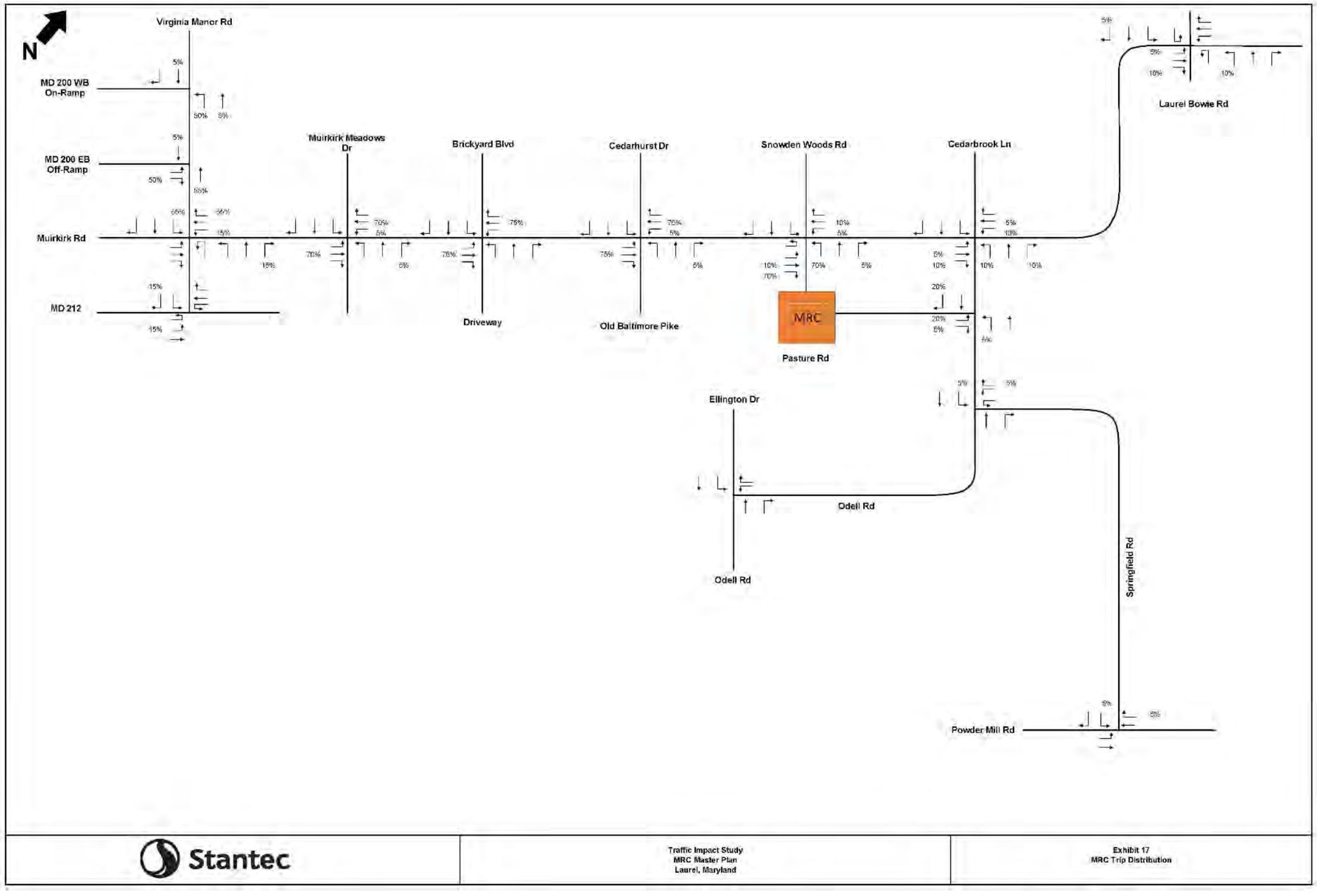

N
Virginia Manor Rd
MD 200 WB On-Ramp
MD 200 EB Off-Ramp
Muirkirk Rd
MD 212
Muirkirk Meadows Dr
Brickyard Blvd
Driveway
Cedarhurst Dr
Old Baltimore Pike
Snowden Woods Rd
MRC
Pasture Rd
Cedarbrook Ln
Odell Rd
Laurel Bowie Rd
Ellington Dr
Odell Rd
Springfield Rd
Powder Mill Rd
LEGEND
XXX Vehicles Per Hour
(XXX) Pedestrians Per Hour
Stantec
Traffic Impact Study
MRC Master Plan
Laurel, Maryland
Exhibit 12
2030 No Action Condition
PM Peak Hour (4:00 PM-5:00 PM)


N
Virginia Manor Rd
MD 200 WB On-Ramp
MD 200 EB Off-Ramp
Muirkirk Rd
MD 212
Muirkirk Meadows Dr
Brickyard Blvd
Cedarhurst Dr
Snowden Woods Rd
Cedarbrook Ln
Laurel Bowie Rd
Driveway
Old Baltimore Pike
MRC
Pasture Rd
Odell Rd
Ellington Dr
Odell Rd
Springfield Rd
Powder Mill Rd
Stantec
Traffic Impact Study
MRC Master Plan
Laurel, Maryland
Exhibit 13
2040 Konterra Town CenterTrip Generation
AM Peak Hour (7:15 AM-8:15 AM)

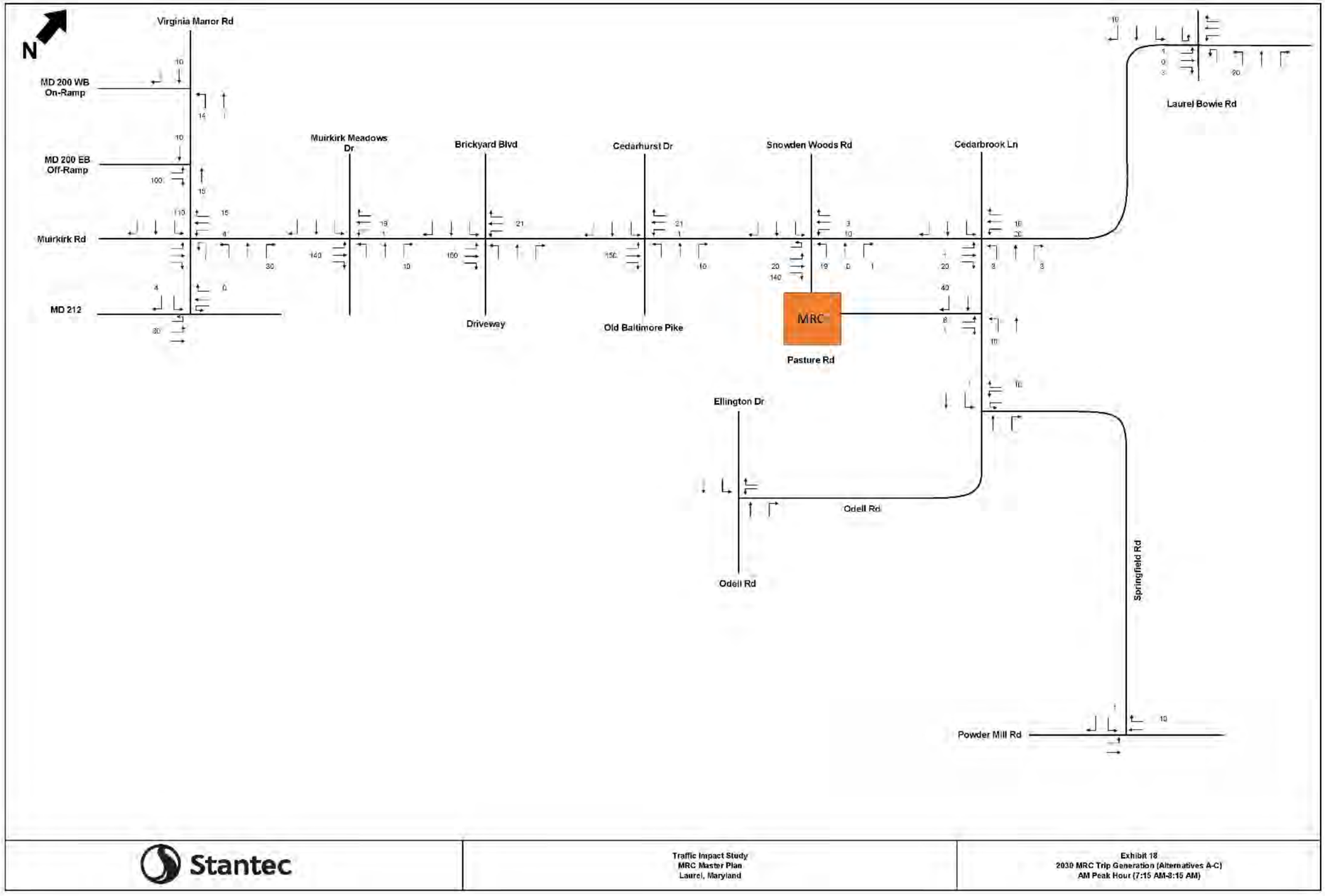

N
Virginia Manor Rd
MD 200 WB On-Ramp
MD 200 EB Off-Ramp
Muirkirk Rd
MD 212
Muirkirk Meadows Dr
Brickyard Blvd
Cedarhurst Dr
Snowden Woods Rd
Cedarbrook Ln
Laurel Bowie Rd
Driveway
Old Baltimore Pike
MRC
Pasture Rd
Odell Rd
Ellington Dr
Odell Rd
Springfield Rd
Powder Mill Rd
Stantec
Traffic Impact Study
MRC Master Plan
Laurel, Maryland
Exhibit 14
2040 Konterra Town Center Trip Generation
PM Peak Hour (4:00 PM-5:00 PM)

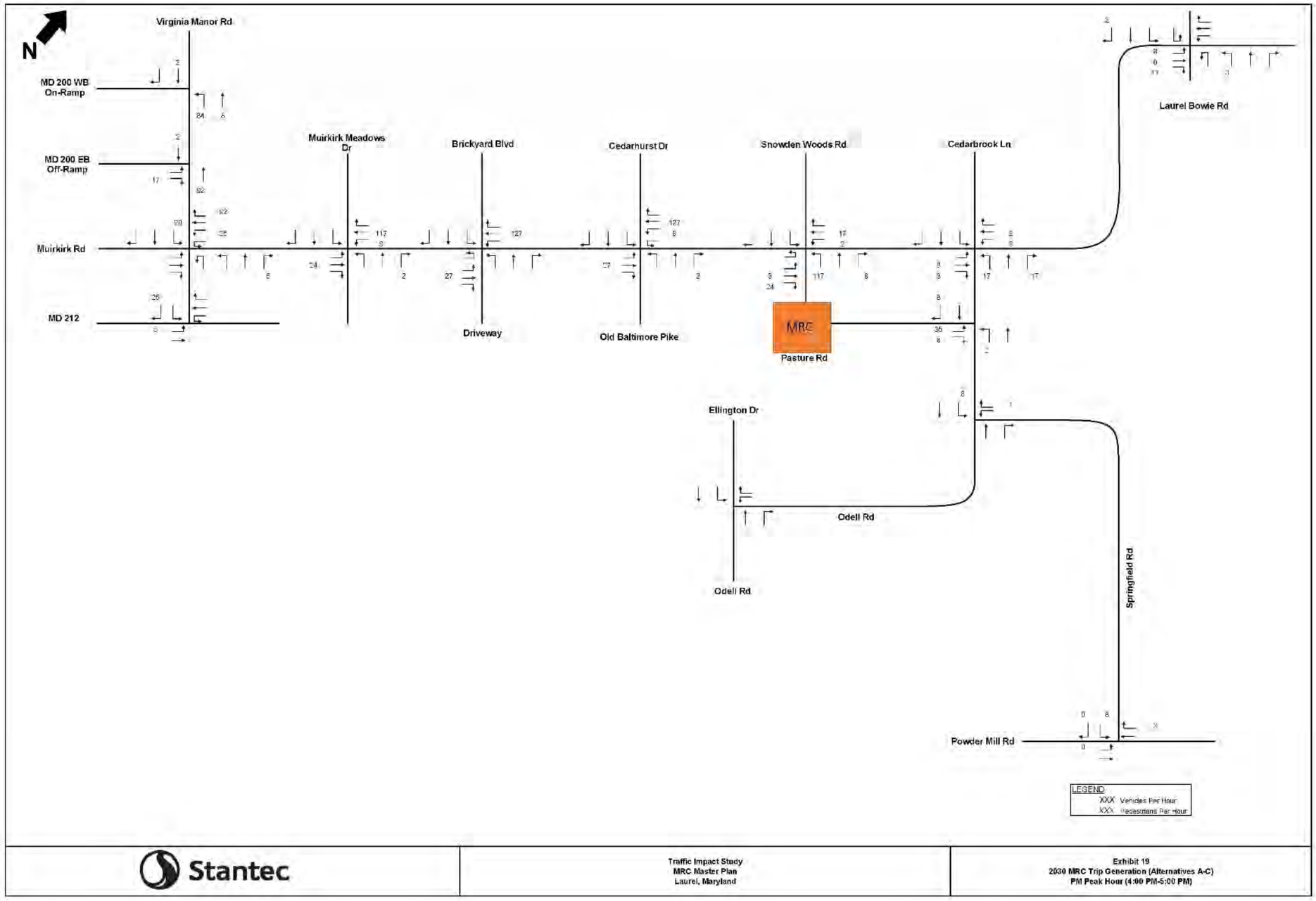

N
Virginia Manor Rd
MD 200 WB On-Ramp
MD 200 EB Off-Ramp
Muirkirk Rd
MD 212
Muirkirk Meadows Dr
Brickyard Blvd
Driveway
Cedarhurst Dr
Old Baltimore Pike
Snowden Woods Rd
MRC
Pasture Rd
Cedarbrook Ln
Laurel Bowie Rd
Odell Rd
Ellington Dr
Odell Rd
Springfield Rd
Powder Mill Rd
LEGEND
XXX Vehicles Per Hour
XXX Pedestrians Per Hour
Stantec
Traffic Impact Study
MRC Master Plan
Laurel, Maryland
Exhibit 15
2040 No Action Condition
AM Peak Hour (7:15 AM-8:15 AM)


N
Virginia Manor Rd
MD 200 WB On-Ramp
MD 200 EB Off-Ramp
Muirkirk Rd
MD 212
Muirkirk Meadows Dr
Brickyard Blvd
Driveway
Cedarhurst Dr
Old Baltimore Pike
Snowden Woods Rd
MRC
Pasture Rd
Cedarbrook Ln
Laurel Bowie Rd
Odell Rd
Ellington Dr
Odell Rd
Springfield Rd
Powder Mill Rd
LEGEND
XXX Vehicles Per Hour
XXX Pedestrians Per Hour
Stantec
Traffic Impact Study
MRC Master Plan
Laurel, Maryland
Exhibit 16
2040 No Action Condition
PM Peak Hour (4:00 PM-5:00 PM)



Stantec	Traffic Impact Study MRC Master Plan Laurel, Maryland	Exhibit 17 MRC Trip Distribution

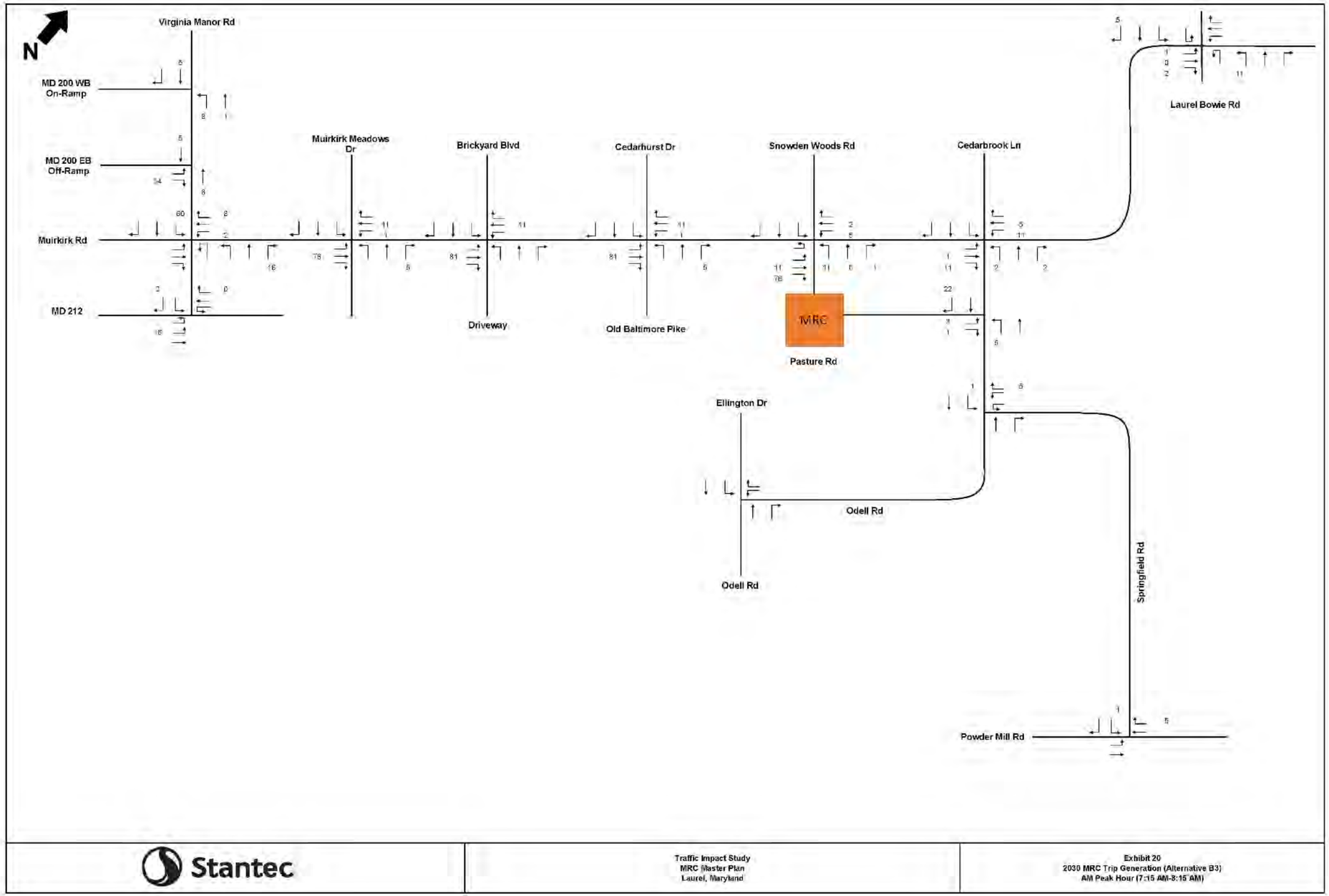

N
Virginia Manor Rd
MD 200 WB On-Ramp
MD 200 EB Off-Ramp
Muirkirk Rd
MD 212
Muirkirk Meadows Dr
Brickyard Blvd
Driveway
Cedarhurst Dr
Old Baltimore Pike
Snowden Woods Rd
MRC
Pasture Rd
Cedarbrook Ln
Laurel Bowie Rd
Ellington Dr
Odell Rd
Odell Rd
Springfield Rd
Powder Mill Rd
Stantec
Traffic Impact Study
MRC Master Plan
Laurel, Maryland
Exhibit 18
2030 MRC Trip Generation (Alternatives A-C)
AM Peak Hour (7:15 AM-8:15 AM)



Stantec

Traffic Impact Study
MRC Master Plan
Laurel, Maryland

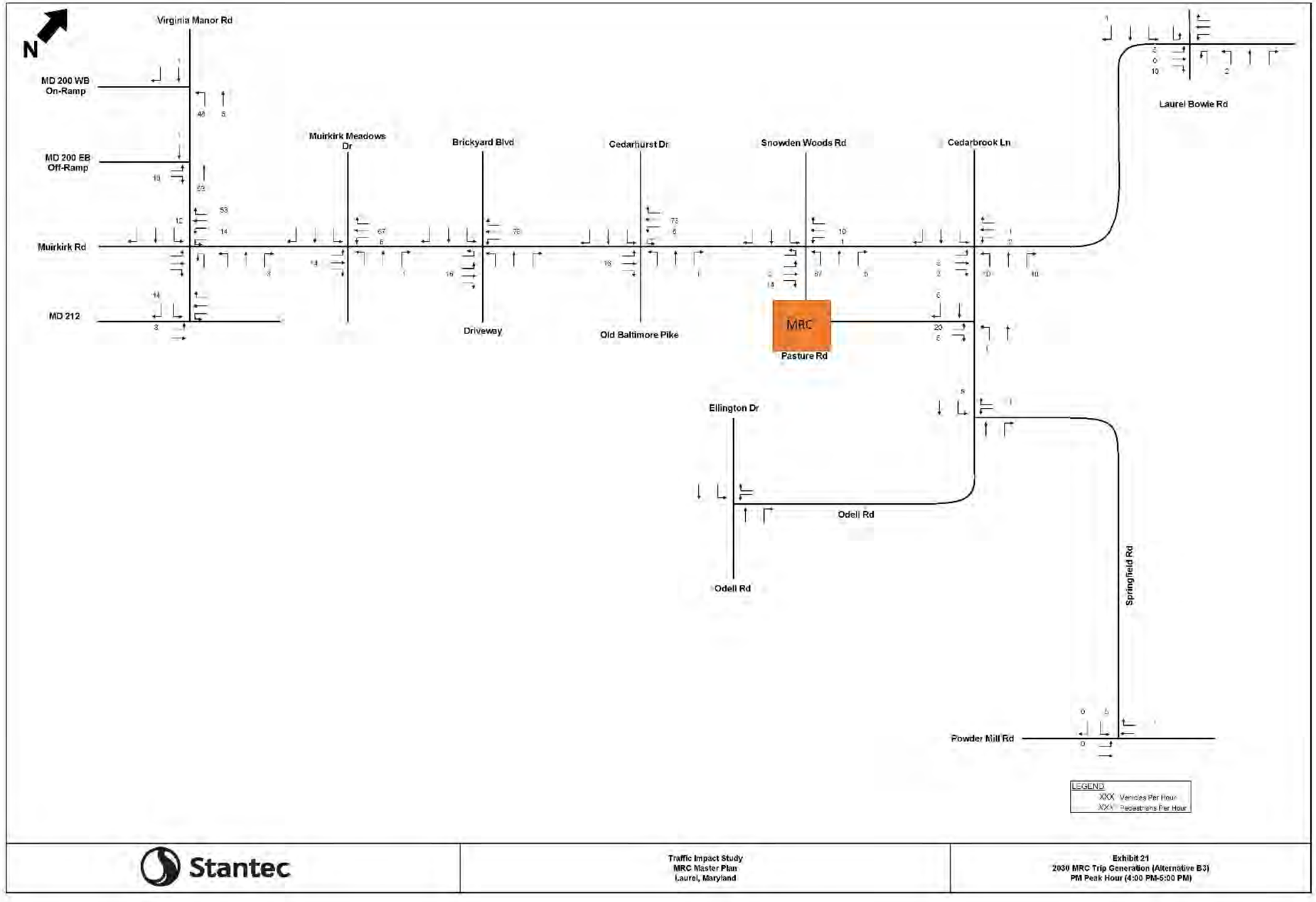
Exhibit 19
2030 MRC Trip Generation (Alternatives A-C)
PM Peak Hour (4:00 PM-5:00 PM)

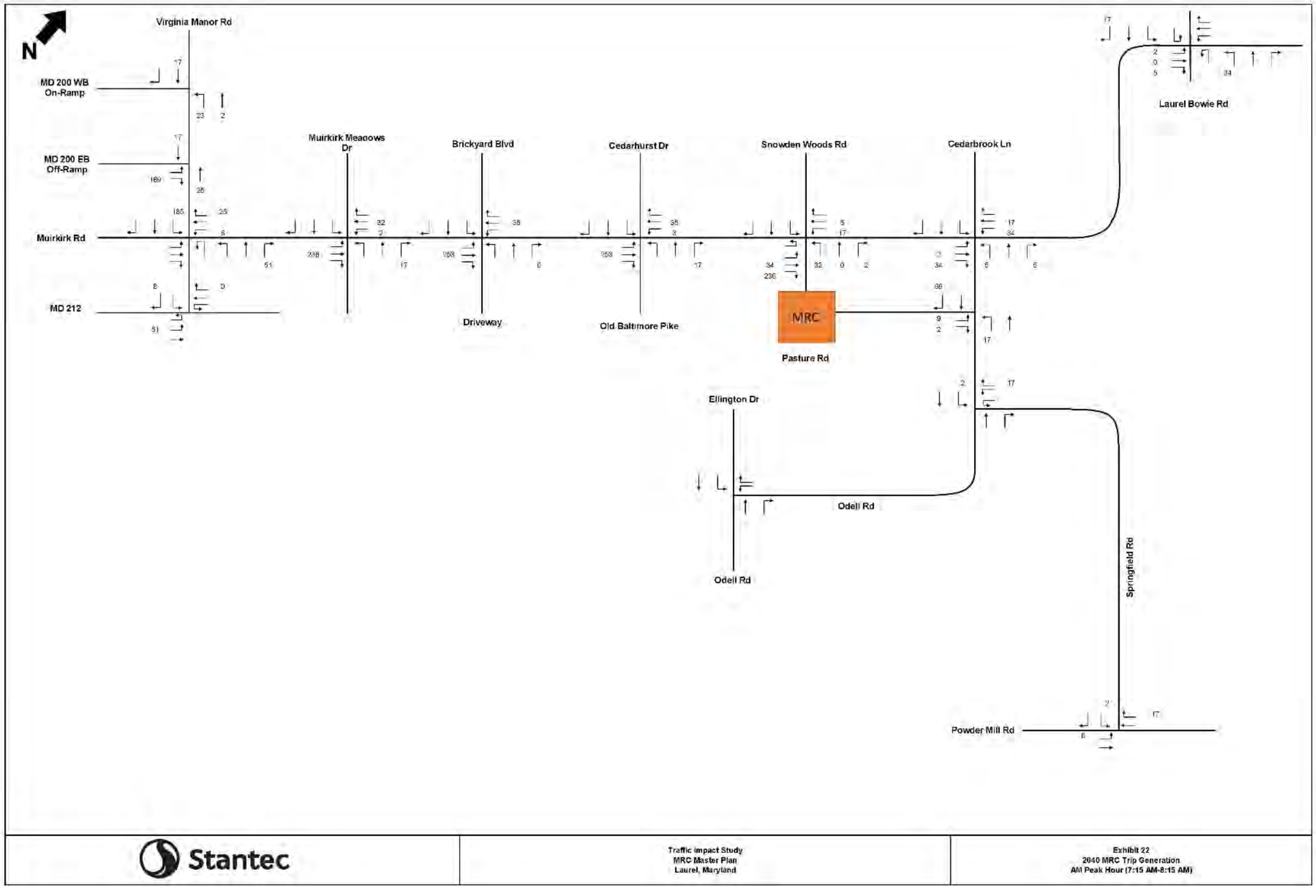


Stantec

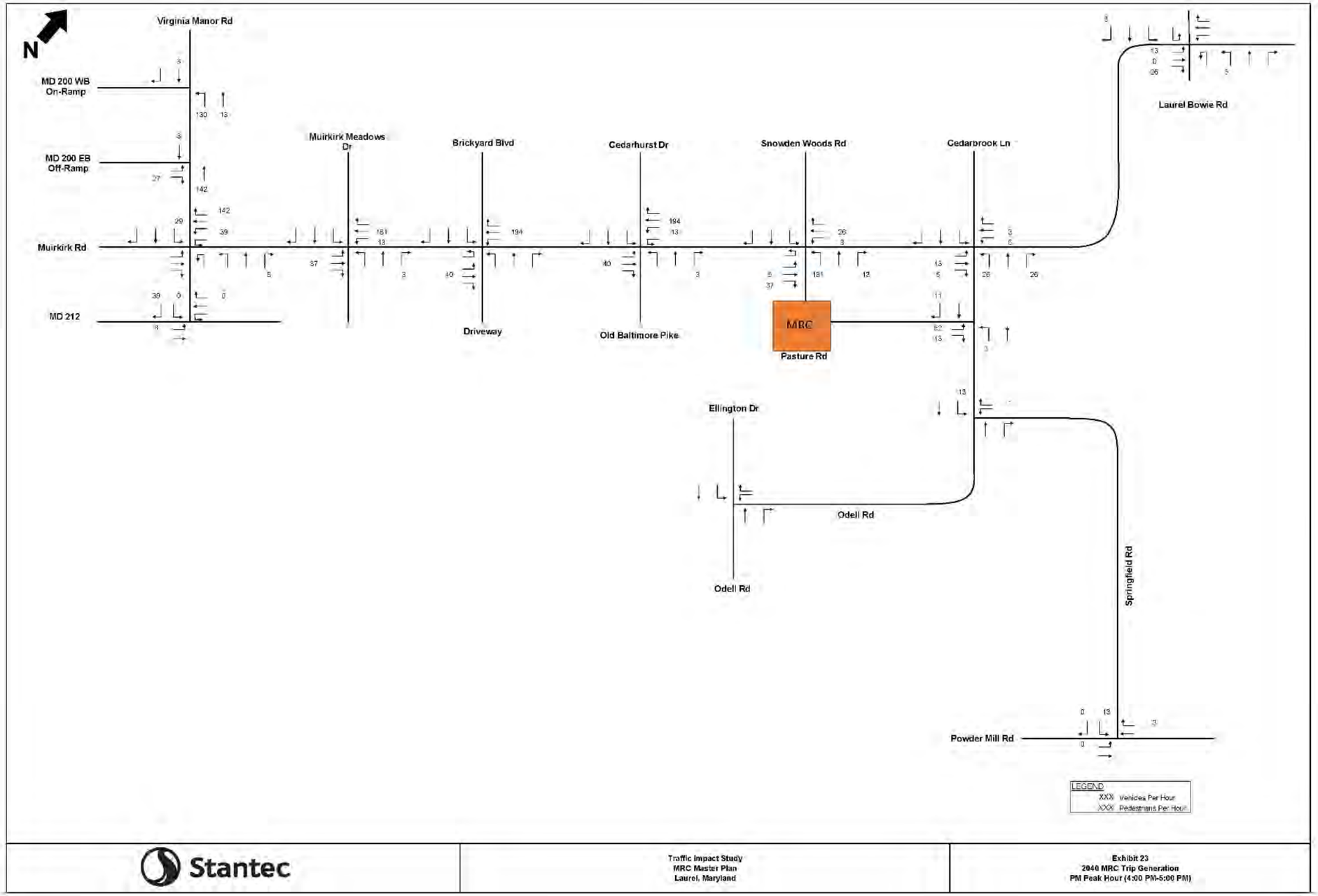
Traffic Impact Study
MRC Master Plan
Laurel, Maryland

Exhibit 20
2030 MRC Trip Generation (Alternative B3)
AM Peak Hour (7:15 AM-8:15 AM)


N
Virginia Manor Rd
MD 200 WB On-Ramp
MD 200 EB Off-Ramp
Muirkirk Rd
MD 212
Muirkirk Meadows Dr
Brickyard Blvd
Driveway
Cedarhurst Dr
Old Baltimore Pike
Snowden Woods Rd
MRC
Pasture Rd
Cedarbrook Ln
Laurel Bowie Rd
Ellington Dr
Odell Rd
Odell Rd
Springfield Rd
Powder Mill Rd
LEGEND
XXX Vehicles Per Hour
XXX Pedestrians Per Hour
Stantec
Traffic Impact Study
MRC Master Plan
Laurel, Maryland
Exhibit 21
2030 MRC Trip Generation (Alternative B3)
PM Peak Hour (4:00 PM-5:00 PM)



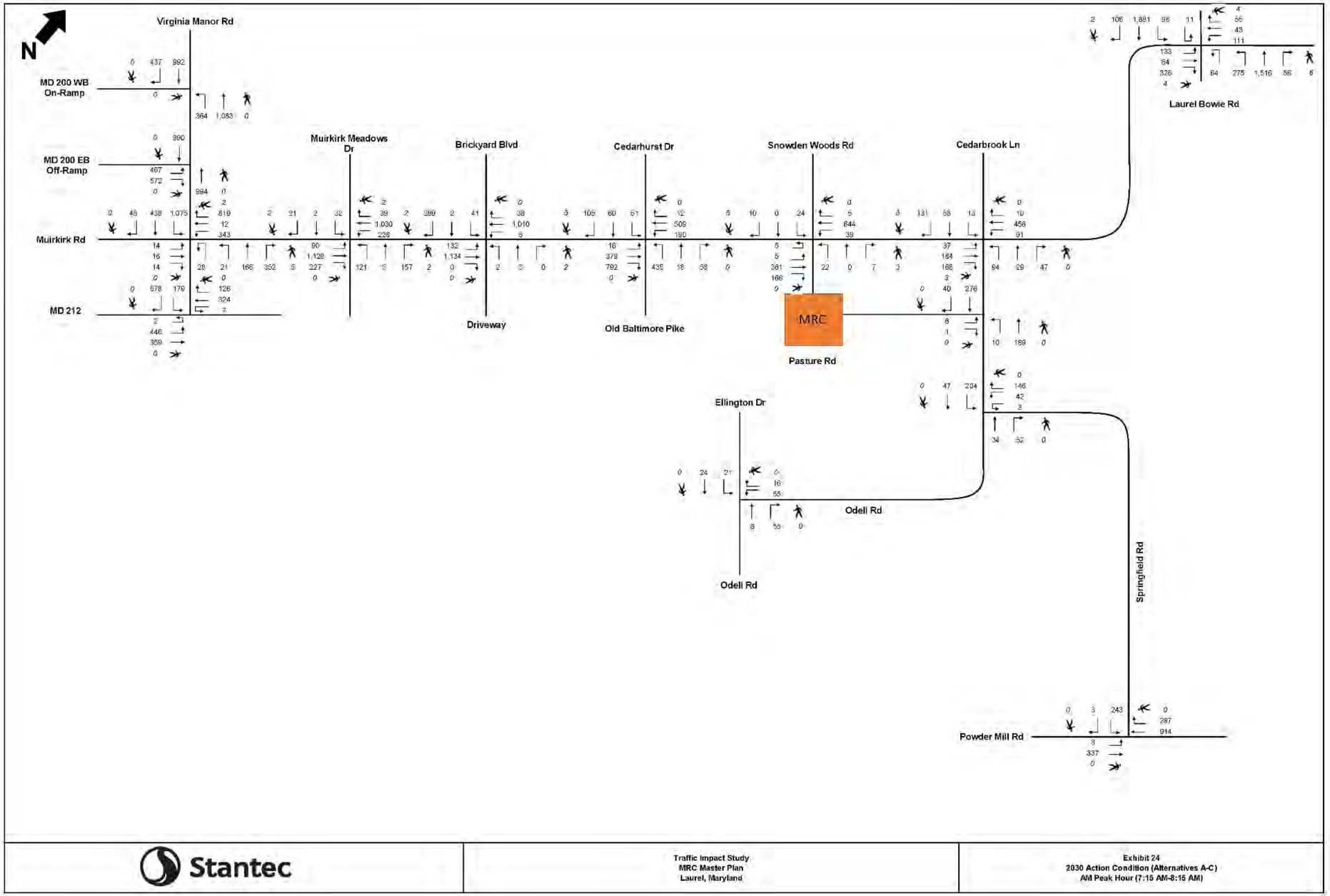
Stantec	Traffic Impact Study MRC Master Plan Laurel, Maryland	Exhibit 22 2040 MRC Trip Generation AM Peak Hour (7:15 AM-8:15 AM)



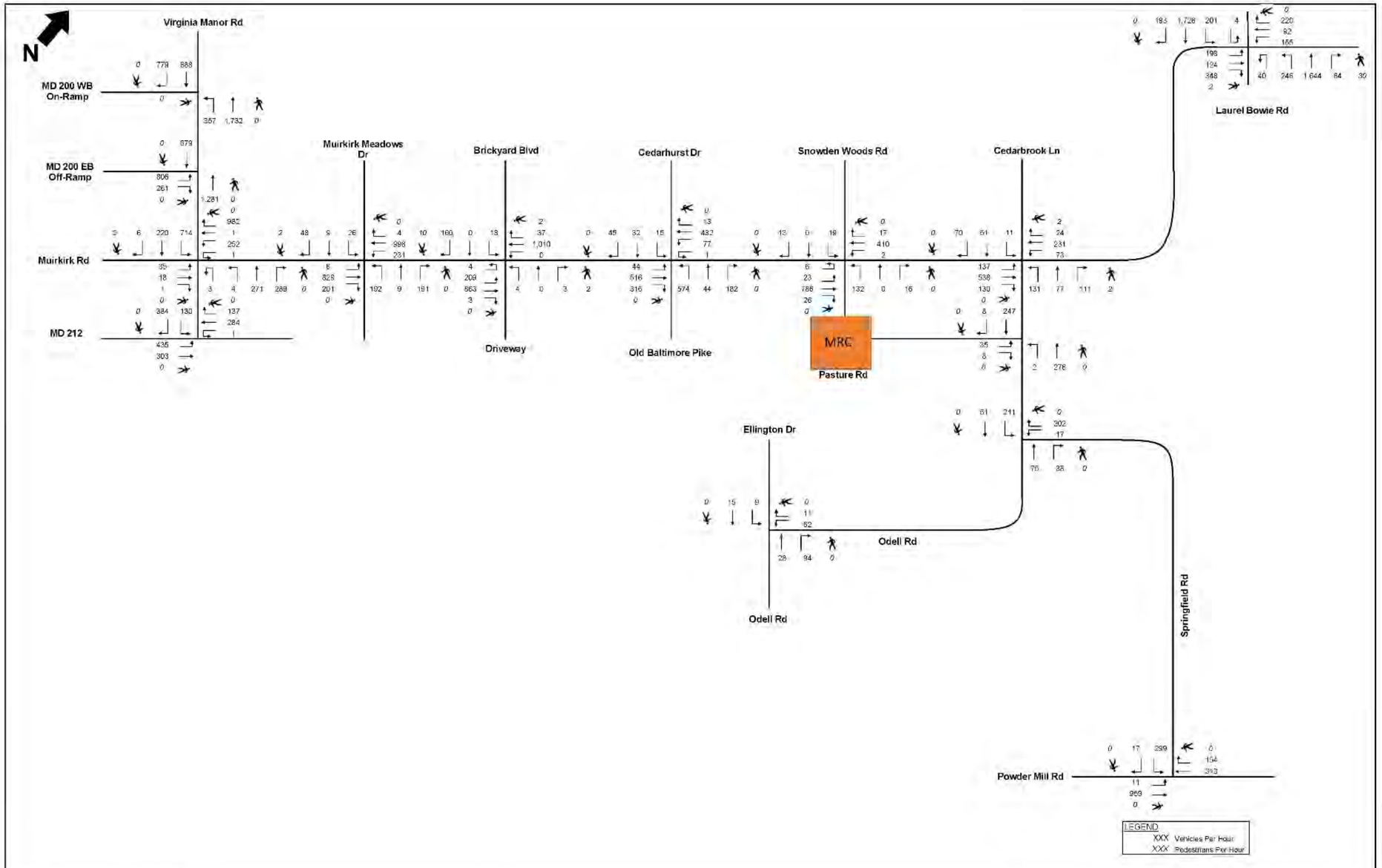
Stantec

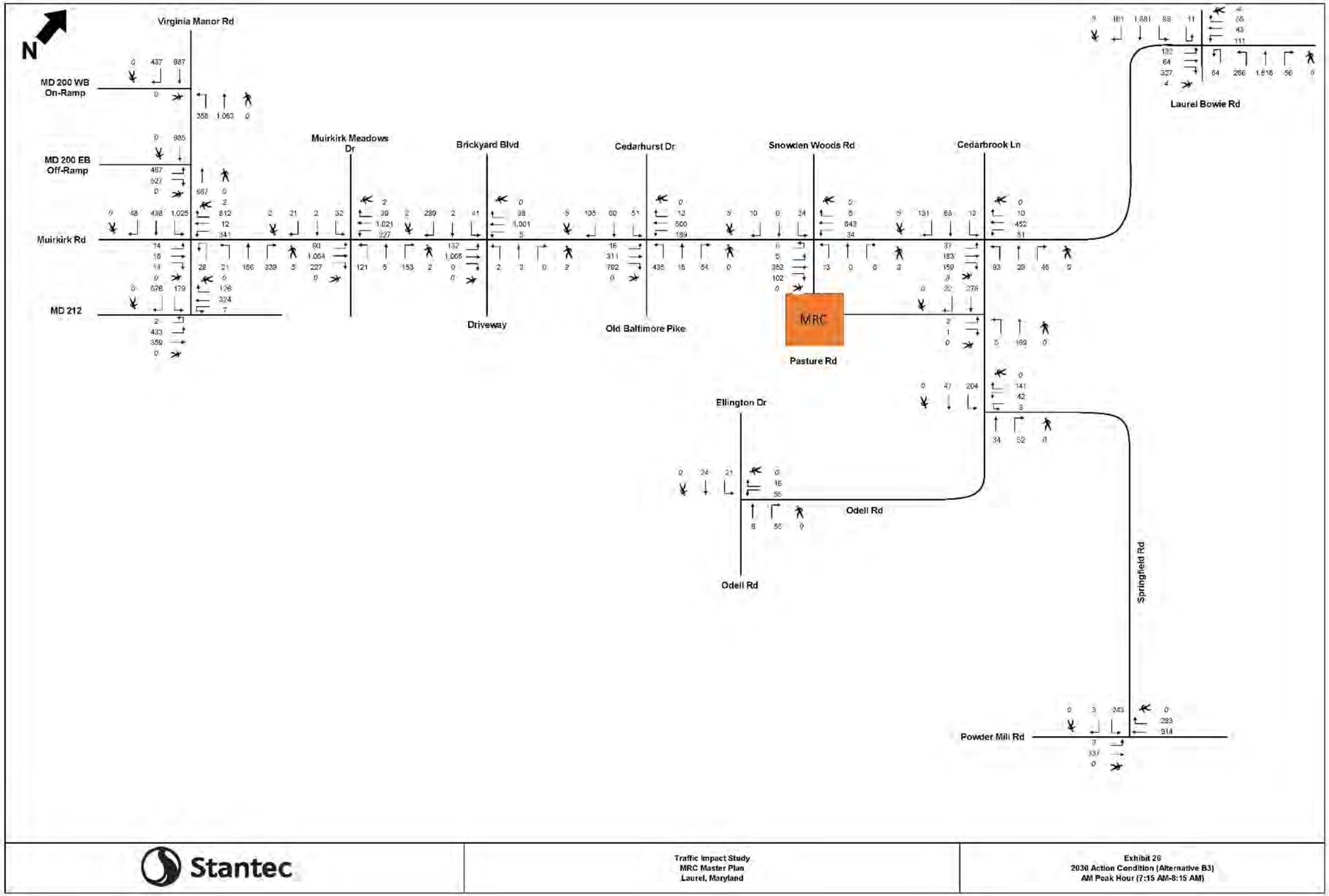
Traffic Impact Study
MRC Master Plan
Laurel, Maryland

Exhibit 23
2040 MRC Trip Generation
PM Peak Hour (4:00 PM-5:00 PM)



Stantec	Traffic Impact Study MRC Master Plan Laurel, Maryland	Exhibit 24 2030 Action Condition (Alternatives A-C) AM Peak Hour (7:15 AM-8:15 AM)

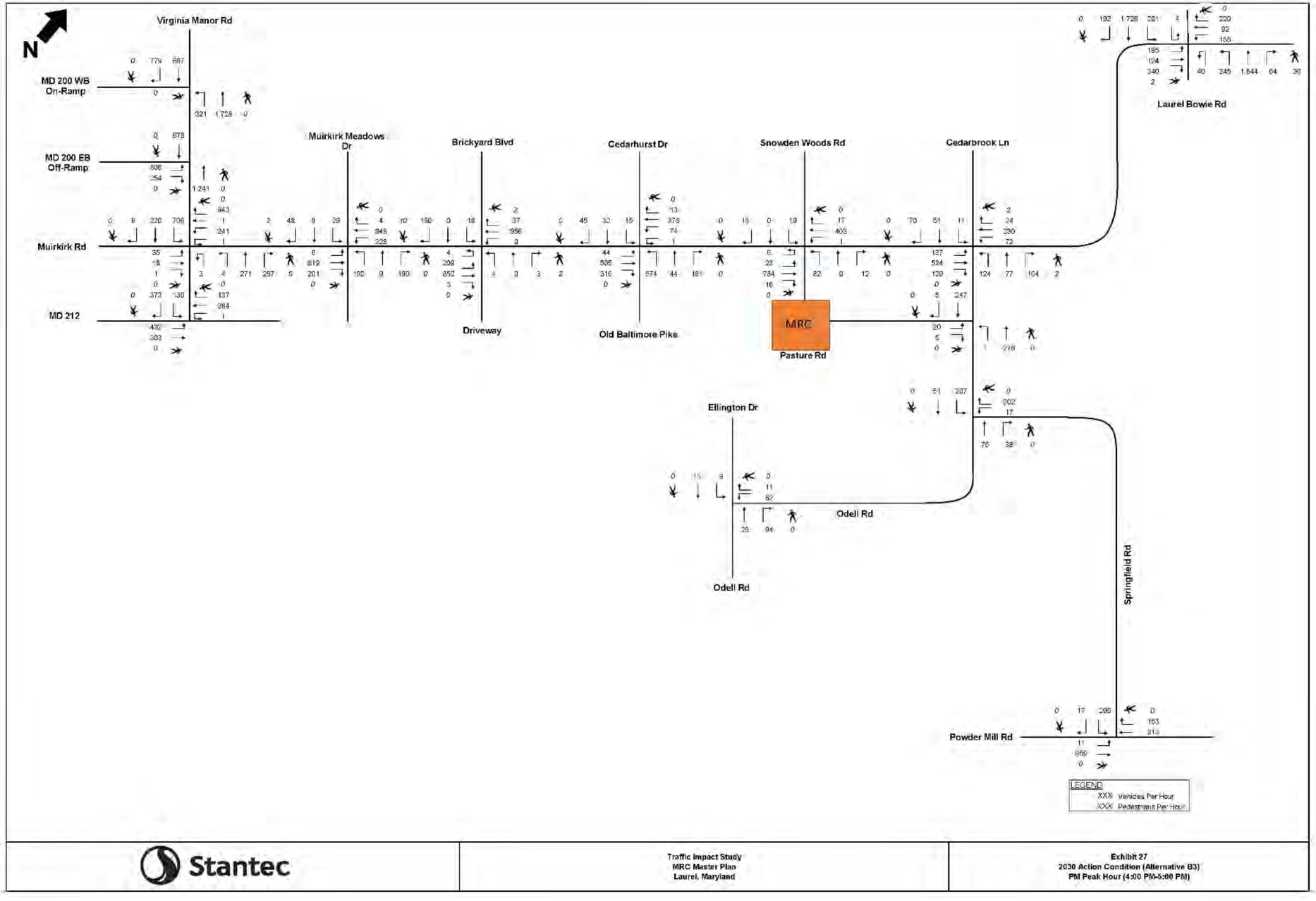

N
Virginia Manor Rd
MD 200 WB On-Ramp
MD 200 EB Off-Ramp
Muirkirk Rd
MD 212
Muirkirk Meadows Dr
Brickyard Blvd
Driveway
Cedarhurst Dr
Old Baltimore Pike
Snowden Woods Rd
MRC
Pasture Rd
Cedarbrook Ln
Laurel Bowie Rd
Ellington Dr
Odell Rd
Odell Rd
Springfield Rd
Powder Mill Rd
LEGEND
XXX Vehicles Per Hour
XXX Pedestrians Per Hour
Stantec
Traffic Impact Study
MRC Master Plan
Laurel, Maryland
Exhibit 25
2030 Action Condition (Alternatives A-C)
PM Peak Hour (4:00 PM-5:00 PM)

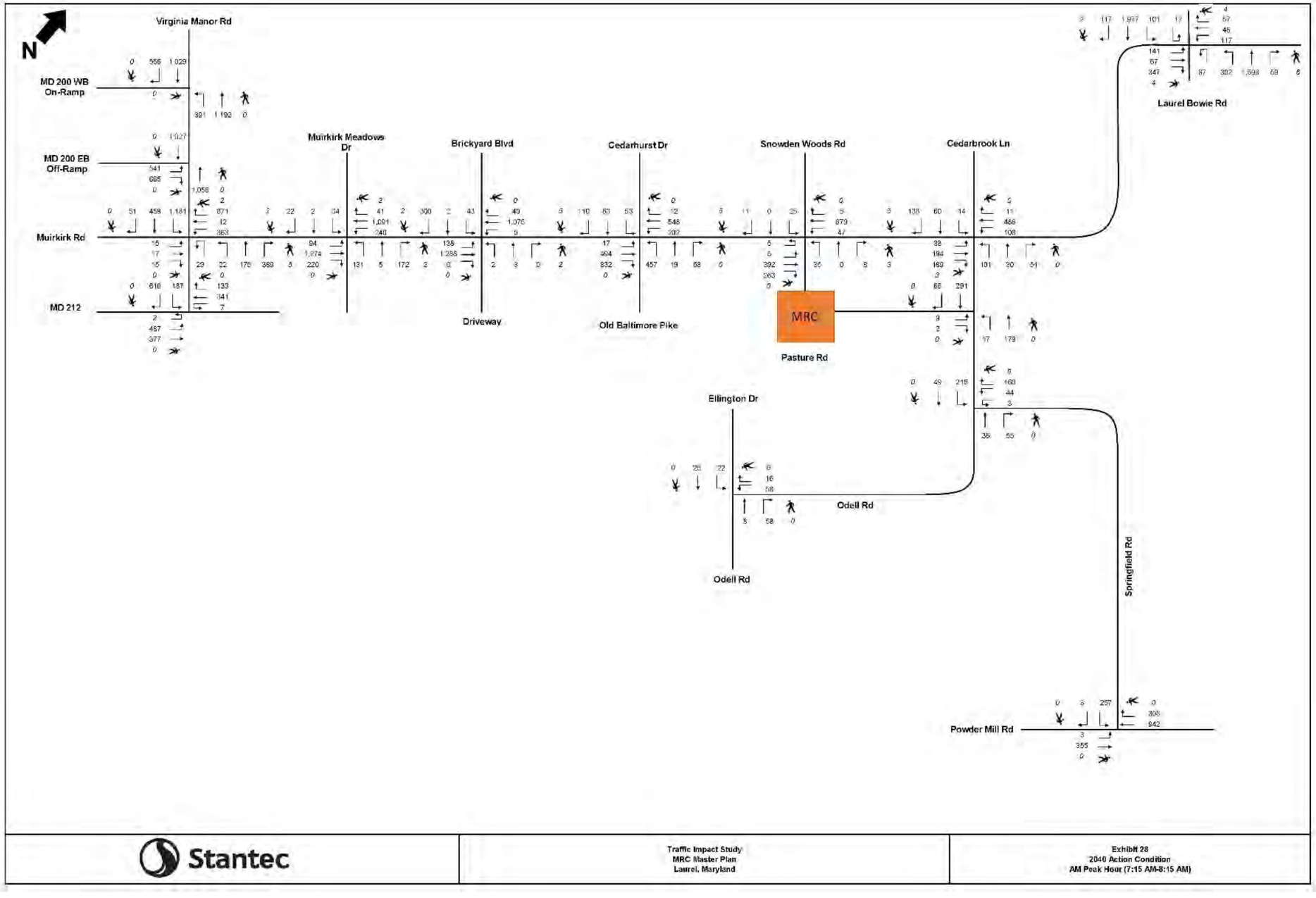


Stantec

Traffic Impact Study
MRC Master Plan
Laurel, Maryland

Exhibit 26
2030 Action Condition (Alternative B3)
AM Peak Hour (7:15 AM-8:15 AM)


N
Virginia Manor Rd
MD 200 WB On-Ramp
MD 200 EB Off-Ramp
Muirkirk Rd
MD 212
Muirkirk Meadows Dr
Brickyard Blvd
Driveway
Cedarhurst Dr
Old Baltimore Pike
Snowden Woods Rd
MRC
Pasture Rd
Cedarbrook Ln
Laurel Bowie Rd
Ellington Dr
Odell Rd
Odell Rd
Springfield Rd
Powder Mill Rd
LEGEND
XXX Vehicles Per Hour
XXX Pedestrians Per Hour
Stantec
Traffic Impact Study
MRC Master Plan
Laurel, Maryland
Exhibit 27
2030 Action Condition (Alternative B3)
PM Peak Hour (4:00 PM-5:00 PM)


N
Virginia Manor Rd
MD 200 WB On-Ramp
MD 200 EB Off-Ramp
Muirkirk Rd
MD 212
Muirkirk Meadows Dr
Brickyard Blvd
Driveway
Cedarhurst Dr
Old Baltimore Pike
Snowden Woods Rd
MRC
Pasture Rd
Cedarbrook Ln
Laurel Bowie Rd
Ellington Dr
Odell Rd
Odell Rd
Springfield Rd
Powder Mill Rd
Stantec
Traffic Impact Study
MRC Master Plan
Laurel, Maryland
Exhibit 28
2040 Action Condition
AM Peak Hour (7:15 AM-8:15 AM)

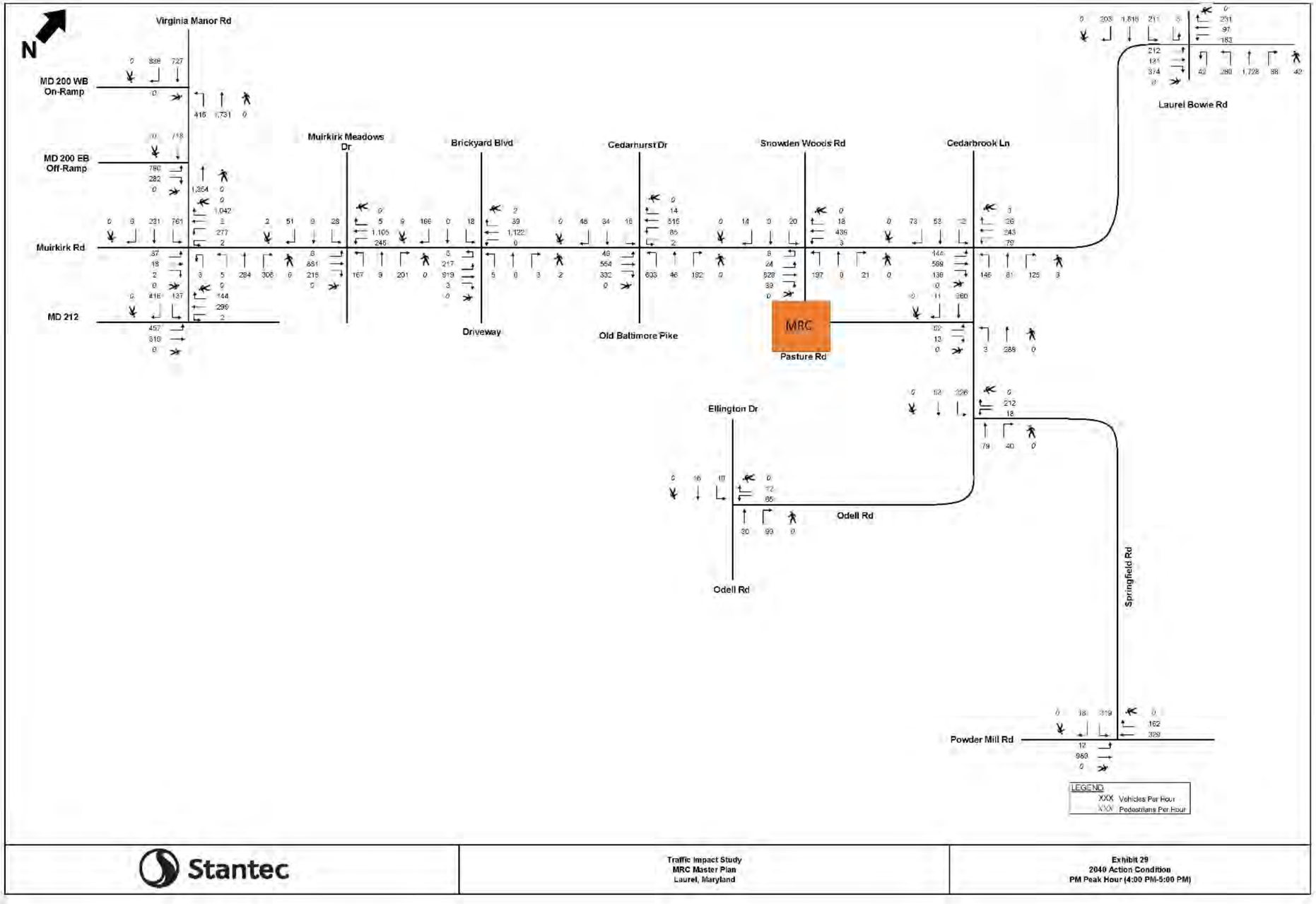

N
Virginia Manor Rd
MD 200 WB On-Ramp
MD 200 EB Off-Ramp
Muirkirk Rd
MD 212
Muirkirk Meadows Dr
Brickyard Blvd
Driveway
Cedarhurst Dr
Old Baltimore Pike
Snowden Woods Rd
MRC
Pasture Rd
Cedarbrook Ln
Laurel Bowie Rd
Ellington Dr
Odell Rd
Odell Rd
Springfield Rd
Powder Mill Rd
LEGEND
XXX Vehicles Per Hour
XXX Pedestrians Per Hour
Stantec
Traffic Impact Study
MRC Master Plan
Laurel, Maryland
Exhibit 29
2040 Action Condition
PM Peak Hour (4:00 PM-5:00 PM)

EXHIBIT 30
INTERSECTION CAPACITY ANALYSIS RESULTS
AM PEAK HOUR

Intersection	LANE GROUP	2021 Existing Condition					2030 No Action Condition					2040 No Action Condition					2030 Action Condition (Alternatives A-C)					2030 Action Condition (Alternative B3)					2040 Action Condition					2030 Action Condition w/ Mitigation (Alternatives A-C)					2030 Action Condition w/ Mitigation (Alternative B3)					2040 Action Condition w/ Mitigation				
		V/C Ratio	Delay	Level of Service	50th Queue (ft)	95th Queue (ft)	V/C Ratio	Delay	Level of Service	50th Queue (ft)	95th Queue (ft)	V/C Ratio	Delay	Level of Service	50th Queue (ft)	95th Queue (ft)	V/C Ratio	Delay	Level of Service	50th Queue (ft)	95th Queue (ft)	V/C Ratio	Delay	Level of Service	50th Queue (ft)	95th Queue (ft)	V/C Ratio	Delay	Level of Service	50th Queue (ft)	95th Queue (ft)	V/C Ratio	Delay	Level of Service	50th Queue (ft)	95th Queue (ft)	V/C Ratio	Delay	Level of Service	50th Queue (ft)	95th Queue (ft)	V/C Ratio	Delay	Level of Service	50th Queue (ft)	95th Queue (ft)
Konterra Drive & MD 200 On-Ramp *Signalized*	NB-L	0.69	36.7	D	97	131	0.61	36.1	D	107	142	0.62	35.9	D	112	147	0.62	35.9	D	111	146	0.61	35.9	D	109	144	0.63	35.5	D	119	153	0.56	20.9	C	71	85	0.55	21.9	C	69	86	0.57	23.1	C	92	104
	NB-T	0.17	0.1	A	0	0	0.37	0.3	A	0	0	0.41	0.4	A	0	0	0.38	0.3	A	0	0	0.38	0.3	A	0	0	0.41	0.4	A	0	0	0.38	0.2	A	0	0	0.38	0.2	A	0	0	0.41	0.3	A	0	0
	SB-T	0.38	5.9	A	92	154	0.46	7.2	A	124	205	0.48	7.7	A	133	220	0.47	7.5	A	129	213	0.47	7.4	A	127	210	0.50	8.4	A	143	240	0.50	7.9	A	112	196	0.49	7.8	A	110	193	0.53	8.8	A	124	222
	SB-R	0.06	1.8	A	0	11	0.35	5.9	A	42	139	0.70	10.9	B	103	300	0.55	6.4	A	47	180	0.55	6.2	A	45	145	0.72	12.4	B	118	337	0.55	5.2	A	23	100	0.55	5.0	A	21	95	0.72	11.4	B	65	343
	Intersection	-	9.9	A	-	-	-	6.0	A	-	-	-	8.8	A	-	-	-	8.2	A	-	-	-	8.1	A	-	-	-	9.4	A	-	-	-	6.2	A	-	-	-	6.2	A	-	-	-	7.5	A	-	-
Konterra Drive & MD 200 Off-Ramp *Signalized*	EB-L	0.05	14.3	B	6	19	0.51	23.0	C	100	184	0.60	25.8	C	127	222	0.51	23.4	C	102	187	0.51	23.2	C	101	186	0.61	26.5	C	133	222	0.45	16.5	B	85	123	0.46	16.9	B	65	123	0.65	24.5	C	119	170
	EB-R	0.79	25.0	C	129	321	0.86	37.2	D	202	480	0.93	47.6	D	236	530	1.05	75.8	F	327	644	0.96	38.1	D	249	569	1.26	155.7	F	480	794	0.97	50.9	D	269	485	0.97	41.1	D	232	428	0.89	32.2	C	175	256
	NB-T	0.60	15.7	B	143	207	0.74	19.0	B	216	276	0.76	19.5	B	235	302	0.74	19.1	B	222	284	0.74	19.1	B	219	281	0.77	19.7	B	244	314	0.85	25.6	C	586	300	0.82	23.7	C	286	295	0.75	13.5	B	193	259
	SB-T	0.69	15.3	B	151	214	0.67	17.2	B	206	262	0.68	17.1	B	216	273	0.68	17.2	B	209	265	0.68	17.2	B	208	264	0.68	17.1	B	222	280	0.78	16.5	B	222	294	0.75	15.5	B	220	293	0.67	8.2	A	196	6
	Intersection	-	17.5	B	-	-	-	22.0	C	-	-	-	24.3	C	-	-	-	29.9	C	-	-	-	25.1	C	-	-	-	47.4	D	-	-	-	26.0	C	-	-	-	23.0	C	-	-	-	17.4	B	-	-
Virginia Manor Road/ Konterra Drive & Muirkirk Road *Signalized*	EB-LT	0.23	45.9	D	19	50	0.26	48.1	D	22	52	0.28	49.9	D	24	56	0.26	48.6	D	22	53	0.26	48.6	D	22	53	0.28	50.1	D	24	56	0.13	58.5	E	13	37	0.13	58.3	E	13	37	0.12	55.1	E	15	39
	EB-R	0.05	0.4	A	0	0	0.06	0.4	A	0	0	0.07	0.5	A	0	0	0.06	0.4	A	0	0	0.06	0.4	A	0	0	0.07	0.5	A	0	0	0.21	38.9	D	16	50	0.20	38.7	D	16	49	0.19	35.6	D	16	50
	WB-L	0.56	40.9	D	109	185	0.49	37.8	D	123	205	0.54	40.7	D	130	218	0.50	38.6	D	125	212	0.50	39.4	D	124	210	0.55	41.9	D	133	226	0.67	51.8	D	180	199	0.66	54.7	D	172	190	0.57	60.7	E	228	264
	WB-TR	0.55	40.5	D	108	184	0.48	37.6	D	122	204	0.53	40.4	D	128	215	0.49	38.3	D	128	210	0.49	38.1	D	122	207	0.54	40.8	D	131	223	0.02	29.8	C	8	14	0.02	28.7	C	7	14	0.02	28.2	C	8	16
	WB-R	0.85	13.2	B	0	71	0.99	33.6	C	107	382	1.05	53.6	F	290	472	1.01	39.0	F	167	414	1.00	36.4	D	130	400	1.08	65.1	F	332	520	0.83	33.5	C	490	549	0.82	30.0	C	226	283	0.90	77.3	E	963	1086
	NB-L	0.16	15.7	B	15	35	0.19	16.7	B	17	37	0.20	17.3	B	18	38	0.19	16.6	B	17	37	0.19	16.6	B	17	37	0.20	17.2	B	18	38	0.30	26.4	C	20	25	0.30	18.4	B	22	34	0.51	56.4	E	52	61
	NB-T	0.28	36.4	D	47	80	0.36	39.0	D	60	92	0.38	40.2	D	64	97	0.35	38.6	D	60	92	0.35	38.7	D	60	92	0.38	40.1	D	64	97	0.48	58.8	E	84	95	0.48	51.7	D	67	108	0.45	48.1	D	91	96
	NB-R	0.58	8.3	A	0	60	0.61	8.7	A	0	61	0.63	8.8	A	0	61	0.63	8.6	A	0	61	0.62	8.6	A	0	60	0.67	8.9	A	0	62	0.70	16.0	B	86	134	0.69	19.2	B	85	159	0.71	16.6	B	108	130
	SB-L	1.26	146.9	F	669	1093	1.60	298.0	F	974	1341	1.71	345.6	F	1090	1418	1.78	376.5	F	1153	1500	1.70	339.8	F	1071	1461	2.02	484.5	F	1332	1742	0.94	43.3	D	690	794	0.90	40.1	D	469	727	0.88	50.8	D	429	469
	SB-T	0.30	18.7	B	103	157	0.35	21.0	C	124	171	0.38	22.5	C	132	181	0.35	20.8	C	124	170	0.35	20.9	C	124	170	0.38	22.4	C	132	181	0.28	19.9	B	153	172	0.28	19.8	B	153	176	0.31	18.5	B	151	180
	SB-R	0.07	0.2	A	0	0	0.08	0.2	A	0	0	0.08	0.2	A	0	0	0.08	0.2	A	0	0	0.08	0.2	A	0	0	0.08	0.2	A	0	0	0.06	1.6	A	0	0	0.06	1.6	A	1	1	0.07	0.6	A	0	1
	Intersection	-	57.9	E	-	-	-	109.4	F	-	-	-	128.3	F	-	-	-	140.9	F	-	-	-	126.0	F	-	-	-	185.4	F	-	-	-	35.7	D	-	-	-	33.9	C	-	-	-	49.5	D	-	-
Virginia Manor Road/ Ritz Way & Virginia Manor Road *Unsignalized (Existing, No Action, Action)* *Signalized (Action w/ Mitigation)*	EB-L	0.65	19.6	C	-	96	0.75	25.3	D	-	132	0.88	41.4	E	-	202	0.80	29.1	D	-	158	0.77	27.2	D	-	146	1.12	105.0	F	-	372	0.81	24.6	C	130	301	0.81	25.0	C	128	291	0.93	41.6	D	168	373
	EB-T	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.17	9.0	A	31	46	0.16	9.5	A	31	47	0.18	9.8	A	34	50
	WB-LTR	-	0.0	A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.59	22.8	C	59	82	0.59	22.6	C	58	82	0.60	22.7	C	63	86
	SB-L	*	*	F	-	394	*	*	F	-	4800	*	*	F	-	552	*	*	F	-	502	*	*	F	-	480	*	*	F	-	-	0.36	24.1	C	100	139	0.39	19.5	B	73	89	0.37	17.6	B	108	159
	SB-R	*	*	F	-	256	*	*	F	-	344	*	*	F	-	416	*	*	F	-	350	*	*	F	-	346	*	*	F	-	434	0.70	17.5	B	221	244	0.69	10.6	B	254	289	0.75	15.3	B	258	288
	Intersection	-	*	F	-	-	-	*	F	-	-	-	*	F	-	-	-	*	F	-	-	-	*	F	-	-	-	*	F	-	-	-	19.5	B	-	-	-	16.5	B	-	-	-	22.2	C	-	-
Muirkirk Meadows Drive & Muirkirk Road *Unsignalized (Existing, No Action, Action)* *Signalized (Action w/ Mitigation)*	EB-L	0.14	11.4	B	-	10	0.17	12.3	B	-	12	0.18	12.6	B	-	14	0.17	12.4	B	-	12	1.19	12.4	F	-	12	0.19	18.1	B	-	14	0.25	4.7	A	21	39	0.24	4.8	A	21	40	0.27	7.0	A	24	38
	EB-TR	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.88	24.2	C	440	562	0.84	20.5	C	325	430	Movement Does Not Exist				
	EB-T	Movement Does Not Exist																																								0.85	48.6	D	724	800
	EB-R																																									0.26	8.6	A	108	121
	WB-L	0.41	15.5	C	-	40	0.51	19.7	C	-	56	0.56	21.9	C	-	66	0.59	24.8	C	-	74	0.55	22.1	C	-	64	0.71	35.3	E	-	106	0.67	24.1	C	110	154	0.67	23.8	C	62	176	0.68	20.3	C	73	185
	WB-TR	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.62	13.3	B	153	302	0.61	13.1	B	172	298	0.66	10.6	B	247	370
	NB-LTR	*	*	F	-	74	*	*	F	-	380	*	*	F	-	414	*	*	F	-	386	*	*	F	-	386	*	*	F	-	410	0.61	18.0	B	30	63	0.61	17.9	B	30	63	0.64	18.0	B	33	67
	SB-LTR	*	*	F	-	118	*	*	F	-	20	*	*	F	-	32	*	*	F	-	32	*	*	F	-	32	*	*	F	-	66	0.17	18.4	B	7	22	0.17	18.4	B	7	22	0.17	18.1	B	6	22
	Intersection	-	*	F	-	-	-	*	F	-	-	-	*	F	-	-	-	*	F	-	-	-	*	F	-	-	-	*	F	-	-	-	19.2	B	-	-	-	17.4	B	-	-	-	29.2	C	-	-
Brickyard Boulevard/ Driveway & Muirkirk Road *Signalized*	EB-L	0.31	5.1	A	9	47	0.39	6.6	A	11	60	0.43	7.3	A	12	63	0.40	6.7	A	11	60	0.40	6.6	A	11	60	0.44	7.6	A	12	63	0.47	5.9	A	4	34	0.40	6.6	A	11	60	0.51	10.5	B	27	62
	EB-TR	0.42	6.2	A	58	283	0.45	7.1	A	67	323	0.47	7.4	A	74	351	0.52	7.9	A	84	402	0.49	7.5	A	76	364	0.59	9.2	A	106	504	0.55	7.7	A	5	375	0.49	7.5	A	76	364	0.63	18.1	B	423	425
	WB-L	0.01	3.5	A	0	2	0.01	4.2	A	0	2	0.01	4.4	A	0	2	0.02	4.0	A	0	2	0.02	4.0	A	0	2	0.02	4.2	A	0	2	0.02	4.0	A	1	1	0.02	4.0	A	0	2	0.02	2.8	A	1	1
	WB-TR	0.53	10.6	B	156	246	0.57	11.9	B	176	252	0.60	12.4	B	190	258	0.58	11.4	B	177	253	0.58	11.4	B	176	252	0.62	12.1	B	191	260	0.61	15.7	B	278	338	0.58	11.4	B	176	252	0.67	12.8	B	202	361
	NB-LTR	0.04	43.5	D	2	13	0.05	43.8	D	3	15	0.05	43.8	D	3	15	0.05	43.8	D	3	15	0.05	43.8	D	3	15	0.05	43.8	D	3	15	0.04	32.5	C	2	12	0.05	43.8	D	3	15	0.04	32.5	C	2	12
	SB-LT	0.21	42.3	D	21	46	0.26	42.1	D	30	58	0.27	42.1	D	31	59	0.26	42.1	D	30	58	0.26	42.1	D	30	58	0.27	42.1	D	31	59	0.22	31.0	C	20	49	0.26	42.1	D	30	58	0.23	30.9	C	21	20
	SB-R	0.66	14.3	B	0	61	0.72	13.9	B	0	69	0.73	13.9	B	0	69	0.72	13.9	B	0	69	0.72	13.9	B	0	69	0.73	13.9	B	0	69	0.76	19.5	B	22	104	0.72	13.9	B	0	69	0.78	21.3	C	27	130
	Intersection	-	9.4	A	-	-	-	10.5	B	-	-	-	10.9	B	-	-	-	10.5	B	-	-	-	10.4	B	-	-	-	11.3	B	-	-	-	12.4	B	-	-	-	10.4	B	-	-	-	16.2	B	-	-
Old Baltimore Pike/ Cedarhurst Drive & Muirkirk Road *Signalized*	EB-L	0.05	11.7	B	6	6	0.05	11.8	B	6	6	0.06	12.0	B	7	7	0.05	13.9	B	6	8	0.05	13.1	B	6	7	0.06	14.5	B	6	8	0.06	19.2	B	0	17	0.05	13.1	B	6	7	0.06	15.9	B	7	15
	EB-TR	0.87	13.0	B	112	329	0.93	15.7	B	142	368	0.98	15.0	B	167	408	1.14	67.5	F	374	465	1.03	30.2	F	233	347	1.33	159.6	F	550	639	Movement Does Not Exist														
	EB-T	Movement Does Not Exist																														0.32	28.2	C	161	191	0.65	32.1	C	201	195	0.38	23.9	C	235	240
	EB-R																															0.83	24.7	C	360	294	0.91	44.0	D	211	750	0.86	30.7	C	305	335
	WB-L	0.75	38.9	D	79	174	0.78	42.1	D	86	191	0.82	46.7	D	93	206	0.79	42.5	D	86	193	0.78	42.1	D	86	191	0.83	47.5	D	96	214	0.61	34.6	C	126	182	0.61	34.5	C	82	131	0.70	39.2	D	126	189
	WB-TR	0.36	21.1	C	110	176	0.38	21.4	C	117	186	0.40	21.7	C	125	196	0.40	21.6	C	128	194	0.39	21.5	C	121	191	0.43	22.1	C	135	211	0.39	30.3	C	214	261	0.39	21.5	C	121	191	0.39	27.6	C	220	276
	NB-L	0.96	57.5	E	232	415	1.01	72.0	F	260	456	1.08	91.1	F	316	502	1.01	72.0	F	260	456	1.01	72.0	F	260	456	1.08	91.1	F	316	502	0.64	33.1	C	195	274	1.01	72.0	F	260	456	0.69	54.7	D	434	500
	NB-TR	0.16	10.8	B	8	39	0.17	10.6	B	8	39	0.18	10.6	B	9	42	0.19	9.8	A	8	42	0.18	10.2	B	8	41	0.22	9.6	A	9	45	0.62	31.1	C	184	263	0.18	10.2	B	8	41	0.17	9.6	A	13	50
	SB-L	0.14	18.6	B	19	40	0.14	18.7	B	10	42	0.15	18.7	B	21	43	0.14	18.7	B	20	42	0.14	18.7	B	20	42	0.15	18.7	B	21	43	0.19	27.2	C	30	56	0.14	18.7	B	20	42	Movement Does Not Exist				
	SB-TR	0.66	36.8	D	63	132	0.69	38.8	D	69	140	0.72	42.1	D	76	165	0.69	38.8	D	69	140	0.69	38.8	D	69	140	0.72	42.1	D	76	165	0.44	41.5	D	113	209	0.69	38.8	D	69	140					
	SB-LTR	Movement Does Not Exist																																								0.57	22.8	C	38	63
	Intersection	-	26.3	C	-	-	-	30.4	C	-	-	-	35.7	D	-	-	-	52.6	D	-	-	-	36.1	D	-	-	-	98.9	F	-	-	-	29.6	C	-	-	-	39.4	D	-	-	-	32.0	C	-	-
Pasture Road/ Snowden Woods Road & Muirkirk Road *Unsignalized (Existing, No Action, Action)* *Signalized (Action w/ Mitigation)*	EB-L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.02	2.6	A	0	4	0.02	2.4	A	0	4	0.02	2.9	A	0	5
	EB-T	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.25	2.6	A	0	74	0.24	2.4	A	0	68	0.27	2.9	A	0	88
	EB-R	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.15	1.0	A	0	14	0.09	1.0	A	0	10	0.24	1.1	A	0	18
	WB-L	0.03	0.1	A	-	2	0.03	0.1	A	-	2	0.03	0.2	A	-	2	0.04	0.7	A	-	2	0.03	0.4	A	-	2	0.05	9.2	A	-	4	0.05	2.4	A	0	11	0.04	2.3	A	0	9	0.06	2.7	A	0	14
	WB-T	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.43	3.7	A	0	165	0.43	3.4	A	0	154	0.46	4.2	A	0	197
	WB-R	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.00	0.0	A	0	0	0.00	0.0	A	0	0	0.00	0.0	A	0	0
	NB-L	0.02	23.9	C	-	2	0.02	25.6	D	-	2	0.02	27.7	D	-	2	0.14	30.5	D	-	10	0.06	28.0	D	-	6	0.26	39.5	E	-	20	0.09	22.6	C	7	23	0.06	22.8	C	4	17	0.16	22.9	C	11	32
	NB-TR	0.01	11.0	B	-	0	0.01	11.2	B	-	0	0.01	11.4	B	-	0	0.01	11.4	B	-	0	0.01	11.9	B	-	0	0.02	11.7	B	-	0	0.01	0.0	A	0	0	0.10	0.0	A	0	0	0.02	0.1	A	0	0
	SB-LTR	0.15	23.0	C	-	10	0.17	24.9	C	-	12	0.19	27.2	D	-	14	0.20	29.7	D	-	14	0.18	27.4	D	-	12	0.26	37.6	E	-	20	0.13	8.1	A	0	18	0.13	8.4	A	0	18	0.13	8.1	A	19	19
	Intersection	-	1.1	A	-	-	-	1.1	A	-	-	-	1.2	A	-	-	-	1.6	A	-	-	-	1.4	A	-	-	-	2.2	A	-	-	-	3.4	A	-	-	-	3.2	A	-	-	-	3.8	A	-	-
Odell Road/ Cedarbrook Lane & Muirkirk Road *Signalized*	EB-L	0.07	4.5	A	5	15	0.07	4.7	A	5	16	0.08	4.9	A	5	17	0.07	4.8	A	5	17	0.07	4.6	A	5	16	0.08	5.1	A	5	18	0.07	4.6	A	5	15	0.07	4.8	A	5	16	0.08	4.7	A	5	16
	EB-TR	0.35	10.2	B	72	153	0.37	10.8	B	80	168	0.39	11.3	B	87	192	0.40	11.3	B	88	186	0.39	11.0	B	84	176	0.46	13.0	B	103	216	0.37	8.8	A	68	138	0.39	11.0	B	84	176	0.40	9.2	A	78	154
	WB-L	0.10	4.5	A	9	25	0.11	4.7	A	10	27	0.12	4.9	A	10	28	0.15	4.8	A	13	33	0.13	4.6	A	11	30	0.18	5.3	A	16	40	0.14	4.9	A	12	29	0.13	4.6	A	11	30	0.16	5.1	A	15	30
	WB-TR	0.43	11.4	B	128	240	0.45	11.9	B	139	260	0.48	12.6	B	151	283	0.46	12.1	B	144	270	0.46	12.1	B	142	265	0.49	12.9	B	62	304	0.43	11.3	B	134	234	0.46	12.1	B	142	265	0.47	11.8	B	14	257
	NB-LT	0.51	38.1	D	58	113	0.52	38.3	D	61	117	0.53	38.5	D	64	121	0.52	39.6	D	62	119	0.52	38.5	D	62	118	0.55	39.8	D	66	128	0.49	32.7	C	53	104	0.52	38.5	D	62	118	0.52	33.5	C	57	111
	NB-R	0.14	2.3	A	0	7	0.14	2.4	A	0	8	0.15	3.0	A	0	11	0.15	3.0	A	0	11	0.15	2.7	A	0	9	0.16	3.5	A	0	13	0.13	0.7	A	0	0	0.15	2.7	A	0	9	0.14	0.7	A	0	0
	SB-LT	0.25	31.2	C	32	70	0.25	31.1	C	34	72	0.26	31.2	C	36	75	0.25	31.3	C	34	73	0.25	31.2	C	34	72	0.26	31.4	C	36	77	0.24	26.7	C	29	64	0.25	31.2	C	34	72	0.25	26.7	C	31	66
	SB-R	0.36	8.4	A	0	45	0.36	8.3	A	0	46	0.37	8.2	A	0	47	0.36	8.3	A	0	46	0.36	8.3	A	0	46	0.37	8.1	A	0	47	0.35	7.6	A	0	42	0.36	8.3	A	0	46	0.36	7.5	A	0	43
	Intersection	-	13.6	B	-	-	-	13.9	B	-	-	-	14.3	B	-	-	-	14.0	B	-	-	-	13.9	B	-	-	-	14.6	B	-	-	-	12.0	B	-	-	-	13.9	B	-	-	-	12.4	B	-	-
Laurel Bowie Road (MD 197) & Muirkirk Road/ Crystal Plaza Driveway *Signalized*	EB-L	0.59	78.1	E	95	160	0.61	79.0	E	102	167	0.63	79.7	E	106	174	0.61	79.1	E	109	170	0.61	79.0	E	102	167	0.63	80.1	F	108	177	0.48	70.4	E	69	103	0.61	79.0	E	102	167	0.50	70.4	E	73	109
	EB-LT	0.57	76.6	E	101	165	0.59	76.9	E	105	172	0.60	77.4	E	110	178	0.59	76.7	E	105	172	0.59	76.9	E	105	172	0.61	77.4	E	111	180	0.41	71.3	E	64	114	0.59	76.9	E	105	172	0.41	71.0	E	67	118
	EB-R	0.68	42.9	D	218	317	0.71	45.5	D	237	342	0.75	48.6	D	259	371	0.72	45.0	D	240	347	0.72	45.7	D	239	345	0.76	49.3	D	264	379	0.85	50.5	E	242	356	0.72	45.7	D	239	345	0.86	58.9	E	250	380
	WB-LT	0.74	84.5	F	149	230	0.76	86.2	F	156	249	0.79	88.3	F	166	271	0.76	86.2	F	156	249	0.76	86.2	F	156	249	0.79	88.5	F	166	271	0.71	79.5	E	156	234	0.76	86.2	F	156	249	0.72	79.3	E	164	244
	WB-R	0.20	1.7	A	0	0	0.22	2.2	A	0	4	0.22	2.8	A	0	6	0.22	2.2	A	0	4	0.22	2.2	A	0	4	0.22	2.8	A	0	6	0.19	1.3	A	0	0	0.22	2.2	A	0	4	0.19	1.3	A	0	0
	NB-L	1.07	128.5	F	340	547	1.12	143.4	F	391	582	1.18	162.4	F	417	622	1.20	166.9	F	426	632	1.16	155.9	F	405	610	1.30	203.6	F	486	701	0.82	79.0	E	179	247	1.16	155.9	F	405	610	0.84	79.9	E	195	272
	NB-TR	0.60	24.8	C	381	495	0.63	26.2	C	415	532	0.67	28.0	C	456	579	0.63	26.3	C	416	532	0.63	26.2	C	415	532	0.67	28.1	C	457	579	0.57	19.7	B	354	441	0.63	26.2	C	415	532	0.61	21.2	C	290	486
	SB-L	0.61	76.8	E	104	166	0.62	76.9	E	108	170	0.63	76.7	E	113	176	0.62	76.9	E	108	170	0.62	76.9	E	108	170	0.63	76.7	E	113	176	0.54	76.8	E	56	91	0.62	76.9	E	108	170	0.56	77.9	E	59	94
	SB-TR	0.84	37.5	D	620	730	0.89	40.7	D	685	801	0.94	45.9	D	755	909	0.90	41.2	D	693	841	0.89	40.9	D	689	810	0.95	47.4	D	769	923	0.81	32.1	C	610	740	0.89	40.9	D	689	810	0.88	36.9	D	694	837
	Intersection	-	43.5	D	-	-	-	46.5	D	-	-	-	51.0	D	-	-	-	48.9	D	-	-	-	47.8	D	-	-	-	55.4	E	-	-	-	37.0	D	-	-	-	47.8	D	-	-	-	39.7	D	-	-
Odell Road & MRC Driveway *Unsignalized*	EB-LR	Intersection Does Not Exist															0.01	11.9	B	-	0	0.01	11.4	B	-	0	0.02	12.4	B	-	2	0.01	11.9	B	-	0	0.01	11.4	B	-	0	0.02	12.4	B	-	2
	NB-LT																0.01	0.0	A	-	0	0.00	7.9	A	-	0	0.02	0.1	A	-	0	0.01	0.0	A	-	0	0.00	7.9	A	-	0	0.02	0.1	A	-	0
	SB-TR																-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Intersection																-	0.3	A	-	-	-	0.2	A	-	-	-	0.5	A	-	-	-	0.3	A	-	-	-	0.2	A	-	-	-	0.5	A	-	-
Odell Road & Springfield Road *Unsignalized*	WB-LTR	0.26	11.5	B	-	22	0.27	11.6	B	-	22	0.30	12.2	B	-	26	0.28	11.7	B	-	24	0.20	11.7	B	-	24	0.31	12.1	B	-	26	0.28	11.7	B	-	24	0.28	11.7	B	-	22	0.31	12.1	B	-	26
	NB-TR	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	SB-LT	0.14	7.6	A	-	10	0.15	7.7	A	-	10	0.15	7.7	A	-	10	0.15	7.7	A	-	10	0.15	7.7	A	-	10	0.16	7.7	A	-	10	0.15	7.7	A	-	10	0.15	7.7	A	-	10	0.16	7.7	A	-	10
	Intersection	-	7.0	A	-	-	-	7.0	A	-	-	-	7.3	A	-	-	-	7.2	A	-	-	-	7.1	A	-	-	-	7.4	A	-	-	-	7.2	A	-	-	-	7.1	A	-	-	-	7.4	A	-	-
Odell Road & Ellington Drive *Unsignalized*	WB-LR	0.09	9.4	A	-	6	0.10	9.5	A	-	6	0.10	9.5	A	-	6	0.10	9.5	A	-	6	0.10	9.5	A	-	6	0.10	9.5	A	-	6	0.10	9.5	A	-	6	0.10	9.5	A	-	6	0.10	9.5	A	-	6
	NB-TR	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	SB-LT	0.02	7.4	A	-	0	0.02	7.4	A	-	2	0.02	7.4	A	-	2	0.02	7.4	A	-	2	0.02	7.4	A	-	2	0.02	7.4	A	-	2	0.02	7.4	A	-	2	0.02	7.4	A	-	2	0.02	7.4	A	-	2
	Intersection	-	4.6	A	-	-	-	4.6	A	-	-	-	4.6	A	-	-	-	4.6	A	-	-	-	4.6	A	-	-	-	4.6	A	-	-	-	4.6	A	-	-	-	4.6	A	-	-	-	4.6	A	-	-

EXHIBIT 30
INTERSECTION CAPACITY ANALYSIS RESULTS
AM PEAK HOUR

Intersection	LANE GROUP	2021 Existing Condition					2030 No Action Condition					2040 No Action Condition				
		V/C Ratio	Delay	Level of Service	50th Queue (ft)	95th Queue (ft)	V/C Ratio	Delay	Level of Service	50th Queue (ft)	95th Queue (ft)	V/C Ratio	Delay	Level of Service	50th Queue (ft)	95th Queue (ft)
Powder Mill Road & Springfield Road *Unsignalized (Existing, No Action, Action)* *Signalized (Action w/ Mitigation)*	EB-L	0.00	9.5	A	-	0	0.01	11.4	B	-	0	0.01	11.7	B	-	0
	EB-T	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	WB-TR	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	WB-T	Movement Does Not Exist														
	WB-R															
	SB-LR	0.95	87.0	[illegible]	-	176	1.80	453.3	[illegible]	-	392	2.08	567.6	[illegible]	-	442
	Intersection	-	15.1	C	-	-	-	62.6	[illegible]	-	-	-	79.0	[illegible]	-	-

Intersection	LANE GROUP	2030 Action Condition (Alternatives A-C)					2030 Action Condition (Alternative B3)					2040 Action Condition				
		V/C Ratio	Delay	Level of Service	50th Queue (ft)	95th Queue (ft)	V/C Ratio	Delay	Level of Service	50th Queue (ft)	95th Queue (ft)	V/C Ratio	Delay	Level of Service	50th Queue (ft)	95th Queue (ft)
Powder Mill Road & Springfield Road *Unsignalized (Existing, No Action, Action)* *Signalized (Action w/ Mitigation)*	EB-L	0.01	11.5	B	-	0	0.01	11.5	B	-	0	0.01	11.8	B	-	0
	EB-T	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	WB-TR	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	WB-T	Movement Does Not Exist														
	WB-R															
	SB-LR	1.85	462.6	[illegible]	-	386	1.84	456.6	[illegible]	-	384	2.12	565.8	[illegible]	-	452
	Intersection	-	63.7	[illegible]	-	-	-	63.0	[illegible]	-	-	-	81.6	[illegible]	-	-

Intersection	LANE GROUP	2030 Action Condition w/ Mitigation (Alternatives A-C)					2030 Action Condition w/ Mitigation (Alternative B3)					2040 Action Condition w/ Mitigation				
		V/C Ratio	Delay	Level of Service	50th Queue (ft)	95th Queue (ft)	V/C Ratio	Delay	Level of Service	50th Queue (ft)	95th Queue (ft)	V/C Ratio	Delay	Level of Service	50th Queue (ft)	95th Queue (ft)
Powder Mill Road & Springfield Road *Unsignalized (Existing, No Action, Action)* *Signalized (Action w/ Mitigation)*	EB-L	0.02	5.7	A	0	4	0.02	5.7	A	0	4	0.02	6.0	A	0	4
	EB-T	0.30	6.8	A	62	112	0.30	6.8	A	62	112	0.32	7.1	A	66	119
	WB-TR	Movement Does Not Exist														
	WB-T	0.79	16.4	B	277	545	0.79	16.4	B	277	545	0.82	18.1	B	306	630
	WB-R	0.27	2.2	A	9	38	0.26	2.2	A	9	38	0.29	2.4	A	11	42
	SB-LR	0.65	33.5	C	104	176	0.65	30.5	C	104	176	0.67	34.2	C	[illegible]	[illegible]
	Intersection	-	14.6	B	-	-	-	14.7	B	-	-	-	15.7	B	-	-

Source: Synchro 10, HCM 6th Edition
*Delay exceeds calculable values in HCM 6th Edition, resulting in delays and V/C ratios that are not realistic

EXHIBIT 31
INTERSECTION CAPACITY ANALYSIS RESULTS
PM PEAK HOUR

Intersection	LANE GROUP	2021 Existing Condition					2030 No Action Condition					2040 No Action Condition					2030 Action Condition (Alternatives A-C)					2030 Action Condition (Alternative B3)					2040 Action Condition					2030 Action Condition w/ Mitigation (Alternatives A-C)					2030 Action Condition w/ Mitigation (Alternative B3)					2040 Action Condition w/ Mitigation				
		V/C Ratio	Delay	Level of Service	50th Queue (ft)	95th Queue (ft)	V/C Ratio	Delay	Level of Service	50th Queue (ft)	95th Queue (ft)	V/C Ratio	Delay	Level of Service	50th Queue (ft)	95th Queue (ft)	V/C Ratio	Delay	Level of Service	50th Queue (ft)	95th Queue (ft)	V/C Ratio	Delay	Level of Service	50th Queue (ft)	95th Queue (ft)	V/C Ratio	Delay	Level of Service	50th Queue (ft)	95th Queue (ft)	V/C Ratio	Delay	Level of Service	50th Queue (ft)	95th Queue (ft)	V/C Ratio	Delay	Level of Service	50th Queue (ft)	95th Queue (ft)	V/C Ratio	Delay	Level of Service	50th Queue (ft)	95th Queue (ft)
Konterra Drive & MD 200 On-Ramp *Signalized*	NB-L	0.50	37.7	D	79	113	0.51	37.2	D	85	118	0.52	37.0	D	89	123	0.57	36.0	D	111	146	0.55	35.7	D	100	134	0.60	34.9	C	127	163	0.51	21.8	C	74	78	0.49	26.6	C	73	82	0.54	22.8	C	92	105
	NB-T	0.23	0.2	A	0	0	0.57	0.7	A	0	0	0.57	0.7	A	0	0	0.57	0.7	A	0	0	0.57	0.7	A	0	0	0.57	0.7	A	0	0	0.57	0.4	A	0	0	0.57	0.5	A	0	0	0.57	0.4	A	0	0
	SB-T	0.19	3.5	A	31	55	0.31	4.3	A	61	105	0.33	4.6	A	67	115	0.33	5.5	A	72	121	0.32	4.8	A	67	114	0.36	6.6	A	87	144	0.34	5.8	A	62	112	0.34	5.2	A	59	106	0.38	6.3	A	76	133
	SB-R	0.01	1.6	A	0	5	0.66	6.3	A	101	261	0.72	8.1	A	140	351	0.70	9.2	A	163	372	0.68	7.8	A	137	329	0.78	14.1	B	253	575	0.71	8.8	A	108	307	0.70	7.5	A	86	263	0.80	14.2	B	184	551
	Intersection	-	8.1	A	-	-	-	5.6	A	-	-	-	6.2	A	-	-	-	7.0	A	-	-	-	6.4	A	-	-	-	8.7	A	-	-	-	5.5	A	-	-	-	5.3	A	-	-	-	7.5	A	-	-
Konterra Drive & MD 200 Off-Ramp *Signalized*	EB-L	0.09	16.9	B	6	17	0.82	33.6	C	207	371	0.82	33.6	C	206	359	0.85	36.8	D	227	371	0.84	35.3	D	220	371	0.86	38.4	D	243	359	0.74	23.7	C	170	222	0.74	23.7	C	170	222	0.82	30.4	C	181	252
	EB-R	0.02	7.6	A	0	44	0.43	8.6	A	20	90	0.47	11.1	B	32	112	0.47	10.4	B	30	106	0.46	9.7	A	26	100	0.53	14.0	B	57	138	0.47	11.7	B	50	107	0.46	11.3	B	48	103	0.37	19.9	B	59	94
	NB-T	0.47	6.4	A	65	124	0.72	17.3	B	261	333	0.73	17.3	B	270	343	0.76	18.1	B	295	376	0.74	17.7	B	289	357	0.78	18.8	B	326	415	0.86	21.1	C	275	443	0.83	20.7	C	380	452	0.83	14.8	B	232	314
	SB-T	0.22	4.9	A	24	50	0.43	12.5	B	118	158	0.45	12.6	B	127	168	0.42	12.2	B	116	158	0.43	12.3	B	118	156	0.44	12.1	B	128	170	0.48	10.8	B	118	175	0.47	22.7	C	172	250	0.46	5.8	A	113	2
	Intersection	-	6.5	A	-	-	-	19.9	B	-	-	-	20.0	B	-	-	-	21.1	C	-	-	-	20.6	C	-	-	-	21.8	C	-	-	-	18.6	B	-	-	-	21.1	C	-	-	-	17.1	B	-	-
Virginia Manor Road/ Konterra Drive & Muirkirk Road *Signalized*	EB-LT	0.28	34.4	C	23	64	0.28	40.2	D	29	68	0.28	40.5	D	30	71	0.28	40.2	D	29	68	0.28	40.2	D	29	68	0.28	40.5	D	30	71	0.12	41.0	D	26	59	0.11	40.2	D	26	59	0.18	54.5	D	32	71
	EB-R	0.00	0.0	A	0	0	0.00	0.0	A	0	0	0.01	0.0	A	0	0	0.00	0.0	A	0	0	0.00	0.0	A	0	0	0.01	0.0	A	0	0	0.05	38.2	D	13	36	0.05	37.7	D	13	36	0.08	48.7	D	15	43
	WB-L	0.41	30.8	C	48	103	0.32	28.8	C	53	117	0.34	29.4	C	57	125	0.36	29.4	C	61	129	0.34	29.1	C	57	125	0.40	30.5	C	68	144	0.47	65.8	E	139	145	0.39	61.9	E	129	173	0.47	65.7	E	156	198
	WB-TR	0.31	27.7	C	47	98	0.24	26.8	C	52	112	0.26	27.2	C	56	120	0.27	27.1	C	58	123	0.26	27.0	C	56	118	0.30	27.8	C	67	136	0.00	32.0	C	0	1	0.00	21.0	C	1	1	0.00	38.5	D	1	3
	WB-R	0.80	10.5	B	3	112	1.03	50.3	F	289	566	1.05	57.7	F	313	595	1.14	89.7	F	404	699	1.09	71.6	F	354	643	1.22	125.1	F	494	805	0.80	17.3	B	130	695	0.94	50.5	D	788	1061	0.92	50.5	D	713	1277
	NB-L	0.02	13.4	B	2	10	0.02	14.7	B	2	10	0.03	14.8	B	2	10	0.02	14.7	B	2	10	0.02	14.7	B	2	10	0.03	14.8	B	2	10	0.04	15.7	B	4	6	0.02	18.9	B	4	6	0.06	48.9	D	7	11
	NB-T	0.26	26.4	C	44	87	0.40	31.9	C	73	115	0.41	32.1	C	77	121	0.40	31.9	C	73	115	0.40	31.9	C	73	115	0.41	32.1	C	77	121	0.56	50.3	D	130	157	0.24	31.0	C	84	106	0.51	53.4	D	137	182
	NB-R	0.43	6.4	A	0	63	0.49	6.7	A	0	64	0.50	6.7	A	0	65	0.50	6.7	A	0	65	0.49	6.7	A	0	64	0.51	6.7	A	0	66	0.58	15.1	B	58	120	0.37	10.5	B	57	119	0.56	13.0	B	46	114
	SB-L	0.79	27.5	C	161	492	1.47	245.8	F	571	852	1.57	288.9	F	626	919	1.52	264.8	F	596	882	1.50	257.0	F	586	870	1.64	316.2	F	662	960	0.78	52.6	D	378	522	0.84	32.8	C	229	277	0.50	38.1	D	231	279
	SB-T	0.10	14.8	B	20	59	0.18	18.1	B	40	84	0.19	18.2	B	43	88	0.18	18.1	B	40	84	0.18	18.1	B	40	84	0.19	18.2	B	43	88	0.16	27.6	C	75	128	0.16	19.4	B	61	98	0.14	11.2	B	35	54
	SB-R	0.01	0.0	A	0	0	0.01	0.0	A	0	0	0.01	0.0	A	0	0	0.01	0.0	A	0	0	0.01	0.0	A	0	0	0.01	0.0	A	0	0	0.01	0.0	A	0	0	0.00	0.0	A	0	0	0.01	0.0	A	0	0
	Intersection	-	18.3	B	-	-	-	89.9	F	-	-	-	104.5	F	-	-	-	107.7	F	-	-	-	99.6	F	-	-	-	138.4	F	-	-	-	34.9	C	-	-	-	37.9	D	-	-	-	42.0	D	-	-
Virginia Manor Road/ Ritz Way & Virginia Manor Road *Unsignalized (Existing, No Action, Action)* *Signalized (Action w/ Mitigation)*	EB-L	0.58	16.8	C	-	76	0.74	23.7	C	-	130	0.79	28.1	D	-	158	0.75	24.2	C	-	134	0.74	23.9	C	-	132	0.81	29.2	D	-	164	0.75	20.4	C	118	274	0.75	20.0	B	116	269	0.75	14.6	B	87	216
	EB-T	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.13	8.4	A	24	39	0.13	8.4	A	24	39	0.11	4.9	A	18	36
	WB-LTR	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.56	21.1	C	51	71	0.56	21.1	C	51	71	0.29	11.7	B	38	60
	SB-L	*	*	F	-	196	*	*	F	-	344	*	*	F	-	390	*	*	F	-	348	*	*	F	-	344	*	*	F	-	394	0.27	14.5	B	87	118	0.27	9.2	A	35	47	0.48	29.4	C	104	143
	SB-R	*	*	F	-	60	*	*	F	-	98	*	*	F	-	114	*	*	F	-	114	*	*	F	-	108	*	*	F	-	148	0.55	11.6	B	185	224	0.54	5.6	A	65	79	0.70	17.6	B	202	233
	Intersection	-	*	F	-	-	-	*	F	-	-	-	*	F	-	-	-	*	F	-	-	-	*	F	-	-	-	*	F	-	-	-	15.9	B	-	-	-	14.1	B	-	-	-	14.0	B	-	-
Muirkirk Meadows Drive & Muirkirk Road *Unsignalized (Existing, No Action, Action)* *Signalized (Action w/ Mitigation)*	EB-L	0.01	9.6	A	-	0	0.01	38.8	D	-	0	0.01	10.2	B	-	0	0.01	10.5	B	-	0	0.01	10.8	B	-	0	0.01	11.1	B	-	0	0.01	6.8	A	2	4	0.01	4.0	A	1	1	0.01	7.5	A	2	5
	EB-TR	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.63	21.7	C	371	447	0.63	21.4	C	334	565	Movement Does Not Exist				
	EB-T	Movement Does Not Exist																																								0.55	32.4	C	421	510
	EB-R																																									0.24	18.3	B	112	164
	WB-L	0.27	11.0	B	-	22	0.37	13.7	B	-	34	0.40	14.7	B	-	38	0.39	14.2	B	-	36	0.38	14.0	B	-	36	0.44	15.7	C	-	44	0.58	20.1	C	79	144	0.56	12.0	B	29	116	0.52	14.2	B	87	151
	WB-TR	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.46	12.2	B	115	300	0.44	6.3	A	87	234	0.51	16.4	B	221	359
	NB-LTR	*	*	F	-	76	*	*	F	-	542	*	*	F	-	488	*	*	F	-	556	*	*	F	-	552	*	*	F	-	164	0.67	19.4	B	47	85	0.67	19.5	B	47	84	0.66	18.1	B	41	78
	SB-LTR	*	*	F	-	70	*	*	F	-	96	*	*	F	-	110	*	*	F	-	104	*	*	F	-	102	*	*	F	-	122	0.19	13.1	B	7	24	0.19	13.1	B	7	24	0.21	13.5	B	8	25
	Intersection	-	*	F	-	-	-	*	F	-	-	-	*	F	-	-	-	*	F	-	-	-	*	F	-	-	-	*	F	-	-	-	17.5	B	-	-	-	15.4	B	-	-	-	20.9	C	-	-
Brickyard Boulevard/ Driveway & Muirkirk Road *Signalized*	EB-L	0.28	3.6	A	9	46	0.42	5.0	A	14	69	0.46	5.5	A	15	73	0.47	5.8	A	14	69	0.45	5.5	A	14	69	0.53	8.5	A	16	89	0.50	7.6	A	13	80	0.45	5.5	A	14	69	0.56	12.7	B	70	112
	EB-TR	0.30	3.1	A	35	127	0.32	3.3	A	38	142	0.34	3.4	A	42	152	0.33	3.4	A	40	147	0.33	3.3	A	40	145	0.35	3.5	A	44	162	0.35	4.2	A	35	230	0.33	3.3	A	40	145	0.37	8.1	A	356	296
	WB-L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	WB-TR	0.39	10.6	B	152	252	0.43	11.7	B	180	257	0.45	11.7	B	190	261	0.49	10.7	B	187	262	0.46	11.1	B	184	261	0.54	10.4	B	201	270	0.53	10.1	B	198	299	0.46	10.5	B	184	261	0.69	10.1	B	218	227
	NB-LTR	0.03	0.1	A	0	0	0.03	0.1	A	0	0	0.03	0.2	A	0	0	0.03	0.1	A	0	0	0.03	0.1	A	0	0	0.03	0.2	A	0	0	0.02	0.1	A	0	0	0.03	0.1	A	0	0	0.03	0.1	A	0	0
	SB-LT	0.09	41.8	D	8	27	0.12	41.7	D	12	32	0.12	41.6	D	12	32	0.12	41.7	D	12	32	0.12	41.7	D	12	32	0.12	41.6	D	12	32	0.11	31.6	C	8	27	0.12	41.7	D	12	32	0.11	31.6	C	8	27
	SB-R	0.49	14.9	B	0	51	0.57	14.5	B	0	59	0.57	14.4	B	0	59	0.57	14.5	B	0	59	0.57	14.5	B	0	59	0.57	14.4	B	0	59	0.54	12.7	B	0	53	0.57	14.5	B	0	59	0.55	12.7	B	0	54
	Intersection	-	7.4	A	-	-	-	8.2	A	-	-	-	8.3	A	-	-	-	8.0	A	-	-	-	8.1	A	-	-	-	8.2	A	-	-	-	8.0	A	-	-	-	7.8	A	-	-	-	10.2	B	-	-
Old Baltimore Pike/ Cedarhurst Drive & Muirkirk Road *Signalized*	EB-L	0.09	12.4	B	15	17	0.10	12.5	B	16	15	0.11	12.6	B	17	15	0.12	12.0	B	16	15	0.11	12.7	B	16	15	0.14	13.1	B	17	15	0.14	17.7	B	20	45	0.11	12.7	B	16	15	0.17	20.4	C	40	57
	EB-TR	0.64	22.5	C	197	269	0.67	23.7	C	215	334	0.71	25.1	C	235	371	0.70	25.6	C	234	370	0.69	24.8	C	226	356	0.76	27.9	C	263	418	Movement Does Not Exist														
	EB-T	Movement Does Not Exist																														0.44	26.3	C	134	180	0.77	37.1	D	325	560	0.49	47.5	D	294	337
	EB-R																															0.48	9.0	A	36	130	0.47	7.6	A	0	142	0.51	22.4	C	107	107
	WB-L	0.29	17.7	B	24	51	0.31	18.2	B	25	53	0.34	18.9	B	27	55	0.36	19.0	B	29	58	0.34	18.7	B	27	57	0.42	20.5	C	32	63	0.30	29.0	C	47	94	0.34	18.6	B	27	57	0.35	30.4	C	63	103
	WB-TR	0.21	19.3	B	72	108	0.22	19.4	B	76	114	0.25	20.6	C	81	119	0.31	20.5	C	113	160	0.27	20.0	B	97	140	0.39	22.5	C	139	192	0.35	33.8	C	174	348	0.27	20.0	B	97	140	0.42	35.6	D	216	300
	NB-L	0.95	52.1	D	302	447	1.01	65.7	F	330	499	1.07	82.6	F	371	552	1.01	65.7	F	330	499	1.01	65.7	F	330	499	1.07	82.6	F	371	552	0.63	40.2	D	462	597	1.01	65.7	F	330	499	0.90	30.0	D	495	573
	NB-TR	0.37	7.8	A	19	73	0.38	7.6	A	20	75	0.40	7.8	A	21	78	0.39	7.8	A	20	75	0.38	7.6	A	30	75	0.40	7.8	A	21	78	0.30	6.0	A	26	70	0.38	7.8	A	20	75	0.31	5.8	A	27	72
	SB-L	0.06	18.5	B	5	16	0.07	18.5	B	6	17	0.07	18.5	B	6	17	0.07	18.5	B	60	17	0.07	18.5	B	6	17	0.07	18.5	B	6	17	0.11	31.9	C	8	19	0.07	18.5	B	6	17	Movement Does Not Exist				
	SB-TR	0.34	24.0	C	19	62	0.35	24.1	C	20	63	0.37	24.2	C	22	67	0.35	24.1	C	20	63	0.35	24.1	C	20	63	0.37	24.2	C	22	67	0.51	49.2	D	42	101	0.35	24.1	C	20	63					
	SB-LTR	Movement Does Not Exist																																								0.30	18.4	B	13	27
	Intersection	-	28.1	C	-	-	-	32.8	C	-	-	-	37.6	D	-	-	-	32.3	C	-	-	-	32.3	C	-	-	-	37.4	D	-	-	-	27.6	C	-	-	-	32.6	C	-	-	-	33.2	C	-	-
Pasture Road/ Snowden Woods Road & Muirkirk Road *Unsignalized (Existing, No Action, Action)* *Signalized (Action w/ Mitigation)*	EB-L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.06	5.9	A	4	16	0.05	4.6	A	4	13	0.08	6.1	A	5	20
	EB-T	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.74	15.1	B	219	519	0.70	11.9	B	186	394	0.91	28.7	C	302	660
	EB-R	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.03	1.6	A	0	6	0.02	0.7	A	0	2	0.05	3.1	A	0	13
	WB-L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.00	9.9	A	-	0	0.00	9.9	A	-	0	0.00	10.2	B	-	0	0.01	6.0	A	0	3	0.00	4.0	A	0	1	0.01	8.0	A	0	2
	WB-T	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.39	7.3	A	75	156	0.36	5.7	A	63	125	0.40	10.7	B	102	213
	WB-R	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.02	0.9	A	0	3	0.02	0.8	A	0	3	0.02	1.3	A	0	4
	NB-L	0.13	39.0	E	-	0	0.16	44.2	E	-	10	0.19	50.7	F	-	14	1.40	332.3	F	-	226	0.90	135.6	F	-	108	2.52	707.6	F	-	426	0.52	27.7	C	50	93	0.39	26.6	C	31	63	0.64	30.0	C	60	135
	NB-TR	0.02	15.3	C	-	2	0.03	16.0	C	-	2	0.03	16.7	C	-	2	0.06	16.4	C	-	4	0.04	16.2	C	-	2	0.06	17.5	C	-	6	0.05	0.2	A	0	0	0.04	0.2	A	0	0	0.05	0.2	A	0	0
	SB-LTR	0.19	28.8	D	-	14	0.22	32.8	D	-	16	0.26	37.1	E	-	20	0.25	36.5	E	-	18	0.24	34.9	D	-	16	0.31	44.8	E	-	24	0.09	6.2	A	0	15	0.11	6.9	A	0	16	0.08	5.6	A	0	15
	Intersection	-	1.3	A	-	-	-	1.4	A	-	-	-	1.6	A	-	-	-	31.2	D	-	-	-	9.0	A	-	-	-	97.7	F	-	-	-	13.1	B	-	-	-	10.3	B	-	-	-	21.8	C	-	-
Odell Road/ Cedarbrook Lane & Muirkirk Road *Signalized*	EB-L	0.20	6.5	A	24	57	0.22	6.8	A	26	62	0.24	7.2	A	28	67	0.22	7.4	A	28	66	0.22	7.3	A	27	65	0.24	8.2	A	31	74	0.23	5.8	A	22	42	0.22	7.2	A	27	65	0.24	5.9	A	24	44
	EB-TR	0.71	21.6	C	269	571	0.75	23.9	C	300	639	0.80	26.8	C	336	711	0.78	26.2	C	324	687	0.77	25.3	C	313	668	0.84	31.5	C	378	797	0.77	21.3	C	263	484	0.77	25.8	C	313	668	0.82	24.3	C	292	582
	WB-L	0.19	7.1	A	12	33	0.21	7.6	A	13	35	0.24	8.3	A	14	37	0.23	8.4	A	14	39	0.22	8.1	A	13	37	0.29	9.9	A	16	44	0.24	6.5	A	11	25	0.22	8.1	A	13	37	0.29	7.3	A	12	26
	WB-TR	0.30	14.2	B	75	159	0.32	15.0	B	83	174	0.34	15.9	B	91	191	0.33	16.0	B	87	184	0.32	15.5	B	85	180	0.35	17.4	B	90	207	0.32	11.3	B	60	117	0.32	15.5	B	85	180	0.34	11.6	B	73	124
	NB-LT	0.64	41.5	D	101	176	0.65	41.9	D	107	187	0.69	42.3	D	114	197	0.68	42.7	D	119	204	0.67	42.3	D	114	196	0.71	43.6	D	132	224	0.76	45.1	D	99	199	0.67	42.3	D	114	196	0.81	50.5	D	110	225
	NB-R	0.24	7.6	A	0	38	0.25	7.4	A	0	39	0.25	7.2	A	0	40	0.27	6.9	A	0	41	0.26	7.1	A	0	40	0.28	6.4	A	0	43	0.29	6.4	A	0	38	0.26	7.1	A	0	40	0.31	7.1	A	0	42
	SB-LT	0.18	29.2	C	30	65	0.18	29.1	C	31	67	0.19	29.0	C	32	70	0.18	28.6	C	31	67	0.18	28.8	C	31	67	0.18	28.2	C	33	70	0.19	25.5	C	26	58	0.18	28.8	C	31	67	0.20	25.7	C	27	60
	SB-R	0.19	6.0	A	0	26	0.20	6.3	A	0	28	0.20	6.6	A	0	30	0.19	6.0	A	0	27	0.19	6.2	A	0	28	0.19	6.2	A	0	29	0.19	2.4	A	0	10	0.19	6.2	A	0	28	0.19	2.7	A	0	12
	Intersection	-	19.6	B	-	-	-	20.8	C	-	-	-	22.3	C	-	-	-	22.1	C	-	-	-	21.6	C	-	-	-	24.6	C	-	-	-	19.1	B	-	-	-	21.6	C	-	-	-	21.3	C	-	-
Laurel Bowie Road (MD 197) & Murkirk Road/ Crystal Plaza Driveway *Signalized*	EB-L	0.73	82.0	F	153	237	0.75	83.6	F	161	248	0.77	84.4	F	167	260	0.76	83.8	F	163	249	0.76	83.8	F	163	249	0.79	85.9	F	174	282	0.54	67.3	E	98	136	0.76	83.8	F	163	249	0.57	67.5	E	108	146
	EB-LT	0.70	78.4	E	158	243	0.73	79.9	E	167	254	0.75	81.3	F	175	267	0.74	80.7	F	170	258	0.74	80.7	F	170	258	0.77	82.6	F	183	280	0.61	74.5	E	124	189	0.74	80.7	F	170	258	0.62	74.2	E	130	198
	EB-R	0.64	38.7	D	211	311	0.67	41.3	D	230	335	0.70	43.4	D	247	360	0.69	42.4	D	240	348	0.69	42.4	D	240	348	0.75	46.8	D	275	399	0.76	42.8	D	211	311	0.69	42.4	D	240	348	0.91	60.6	E	305	417
	WB-LT	0.92	99.3	F	243	406	0.95	104.5	F	256	432	1.00	116.1	F	272	463	0.95	104.5	F	256	432	0.95	104.5	F	256	432	1.00	116.1	F	272	463	0.81	79.6	E	245	345	0.95	104.5	F	256	432	0.95	104.1	F	270	450
	WB-R	0.52	11.3	B	0	78	0.53	11.2	B	0	81	0.54	11.2	B	0	82	0.53	11.2	B	0	81	0.53	11.2	B	0	81	0.54	11.2	B	0	82	0.51	13.1	B	18	58	0.53	11.2	B	0	81	0.58	19.0	B	38	131
	NB-L	1.01	117.3	F	283	477	1.06	128.5	F	319	512	1.12	144.5	F	349	546	1.07	130.3	F	323	510	1.07	130.3	F	323	510	1.13	140.4	F	360	559	0.71	72.2	E	145	198	1.07	130.3	F	323	510	0.76	76.0	E	156	211
	NB-TR	0.77	37.6	D	531	610	0.81	40.2	D	575	653	0.87	43.4	D	630	705	0.82	40.4	D	577	653	0.82	40.4	D	577	653	0.87	43.9	D	633	705	0.73	33.2	C	513	636	0.82	40.4	D	577	653	0.75	32.2	C	530	642
	SB-L	0.79	82.6	F	194	290	0.81	84.1	F	204	318	0.84	86.6	F	216	343	0.81	84.1	F	204	318	0.81	84.1	F	204	318	0.84	86.6	F	216	343	0.64	74.1	E	105	151	0.81	84.1	F	204	318	0.67	75.2	E	111	158
	SB-TR	0.89	44.8	D	637	726	0.94	49.7	D	693	824	0.99	59.9	E	805	901	0.94	50.0	D	694	824	0.94	50.0	D	694	824	1.00	61.6	E	810	902	0.87	41.6	D	662	861	0.94	50.0	D	694	824	0.89	41.2	D	683	861
	Intersection	-	50.8	D	-	-	-	54.6	D	-	-	-	61.1	E	-	-	-	55.0	D	-	-	-	55.0	D	-	-	-	62.4	E	-	-	-	44.2	D	-	-	-	55.0	D	-	-	-	47.2	D	-	-
Odell Road & MRC Driveway *Unsignalized*	EB-LR	Intersection Does Not Exist															0.09	12.7	B	-	6	0.05	12.3	B	-	4	0.15	13.6	B	-	30	0.09	12.7	B	-	6	0.05	12.3	B	-	4	0.15	13.6	B	-	10
	NB-LT																0.00	7.8	A	-	0	0.00	7.6	A	-	0	0.00	7.9	A	-	0	0.00	7.8	A	-	0	0.00	7.8	A	-	0	0.00	7.9	A	-	0
	SB-TR																-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Intersection																-	1.0	A	-	-	-	0.6	A	-	-	-	1.5	A	-	-	-	1.0	A	-	-	-	0.6	A	-	-	-	1.5	A	-	-
Odell Road & Springfield Road *Unsignalized*	WB-LTR	0.28	10.8	B	-	24	0.30	11.1	B	-	26	0.32	11.4	B	-	28	0.30	11.1	B	-	26	0.30	11.1	B	-	26	0.33	11.5	B	-	28	0.30	11.1	B	-	26	0.30	11.1	B	-	26	0.33	11.5	B	-	28
	NB-TR	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	SB-LT	0.15	7.8	A	-	10	0.16	7.9	A	-	12	0.17	7.9	A	-	12	0.17	7.9	A	-	12	0.16	7.9	A	-	12	0.18	7.9	A	-	12	0.17	7.9	A	-	12	0.16	7.9	A	-	12	0.18	7.9	A	-	12
	Intersection	-	6.7	A	-	-	-	6.9	A	-	-	-	7.0	A	-	-	-	6.9	A	-	-	-	6.9	A	-	-	-	7.1	A	-	-	-	6.9	A	-	-	-	6.9	A	-	-	-	7.1	A	-	-
Odell Road & Ellington Drive *Unsignalized*	WB-LR	0.09	9.4	A	-	6	0.09	9.5	A	-	6	0.10	9.6	A	-	6	0.09	9.5	A	-	6	0.09	9.5	A	-	6	0.10	9.6	A	-	6	0.09	9.5	A	-	6	0.09	9.5	A	-	6	0.10	9.6	A	-	6
	NB-TR	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	SB-LT	0.01	7.5	A	-	0	0.01	7.5	A	-	0	0.01	7.5	A	-	0	0.01	7.5	A	-	0	0.01	7.5	A	-	0	0.01	7.5	A	-	0	0.01	7.5	A	-	0	0.01	7.5	A	-	0	0.01	7.5	A	-	0
	Intersection	-	3.5	A	-	-	-	3.5	A	-	-	-	3.5	A	-	-	-	3.5	A	-	-	-	3.5	A	-	-	-	3.5	A	-	-	-	3.5	A	-	-	-	3.5	A	-	-	-	3.5	A	-	-

EXHIBIT 31
INTERSECTION CAPACITY ANALYSIS RESULTS
PM PEAK HOUR

Intersection	LANE GROUP	2021 Existing Condition					2030 No Action Condition					2040 No Action Condition				
		V/C Ratio	Delay	Level of Service	50th Queue (ft)	95th Queue (ft)	V/C Ratio	Delay	Level of Service	50th Queue (ft)	95th Queue (ft)	V/C Ratio	Delay	Level of Service	50th Queue (ft)	95th Queue (ft)
Powder Mill Road & Springfield Road *Unsignalized (Existing, No Action, Action) Signalized (Action w/ Mitigation)*	EB-L	0.01	8.5	A	-	0	0.01	8.3	A	-	0	0.01	8.4	A	-	0
	EB-T	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	WB-TR	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	WB-T	Movement Does Not Exist														
	WB-R	Movement Does Not Exist														
	SB-LR	1.08	116.6		-	242	2.02	529.6		-	496	2.30	657.5		-	562
	Intersection	-	26.1	D	-	-	-	53.6		-	-	-	117.5		-	-

Intersection	LANE GROUP	2030 Action Condition (Alternatives A-C)					2030 Action Condition (Alternative B3)					2040 Action Condition				
		V/C Ratio	Delay	Level of Service	50th Queue (ft)	95th Queue (ft)	V/C Ratio	Delay	Level of Service	50th Queue (ft)	95th Queue (ft)	V/C Ratio	Delay	Level of Service	50th Queue (ft)	95th Queue (ft)
Powder Mill Road & Springfield Road	EB-L	0.01	8.3	A	-	0	0.01	8.3	A	-	0	0.01	8.4	A		0
	EB-T	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	WB-TR	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	WB-T	Movement Does Not Exist														
	WB-R	Movement Does Not Exist														
	SB-LR	2.08	550.7		-	518	2.06	542.8		-	510	2.40	690.1			594
	Intersection	-	100.8		-	-	-	97.4		-	-	-	128.7		-	-

Intersection	LANE GROUP	2030 Action Condition w/ Mitigation (Alternatives A-C)					2030 Action Condition w/ Mitigation (Alternative B3)					2040 Action Condition w/ Mitigation				
		V/C Ratio	Delay	Level of Service	50th Queue (ft)	95th Queue (ft)	V/C Ratio	Delay	Level of Service	50th Queue (ft)	95th Queue (ft)	V/C Ratio	Delay	Level of Service	50th Queue (ft)	95th Queue (ft)
Powder Mill Road & Springfield Road	EB-L	0.02	5.6	A	2	7	0.02	5.6	A	2	7	0.02	7.5	A	2	9
	EB-T	0.86	21.1	C	339	640	0.86	21.0	C	339	640	0.95	34.7	C	375	733
	WB-TR	Movement Does Not Exist														
	WB-T	0.27	7.0	A	61	100	0.27	7.0	A	61	100	0.31	8.8	A	67	129
	WB-R	0.15	1.4	A	0	19	0.15	1.4	A	0	19	0.16	1.9	A	0	24
	SB-LR	0.76	38.1	D	136	242	0.75	37.0	D	134	231	0.70	30.7	C	132	217
	Intersection	-	19.8	B	-	-	-	15.7	B	-	-	-	25.9	C	-	-

*Source Synchro 10
*Delay exceeds calculable values in HCM 6th Edition, resulting in delays and V/C ratios that are not realistic

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Appendix B: SHA Traffic Data

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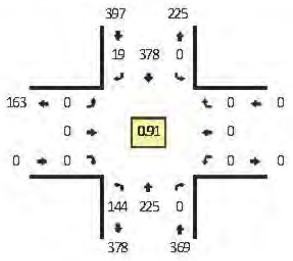
Type of peak hour being reported: Intersection Peak

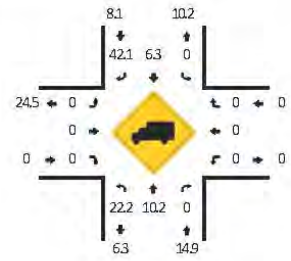
Method for determining peak hour: Total Entering Volume

LOCATION: Konterra Dr -- MD 200 On Ramp
CITY/STATE: Beltsville, MD

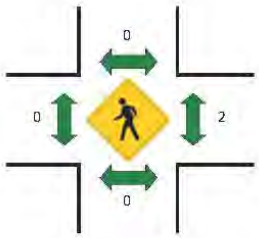
QC JOB #: 15313003
DATE: Tue, Jan 5 2021

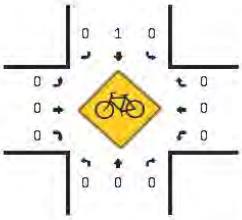
Peak-Hour: 7:15 AM -- 8:15 AM
Peak 15-Min: 7:45 AM -- 8:00 AM

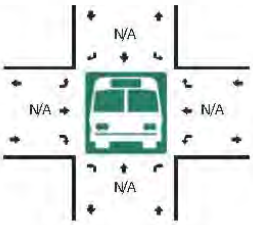


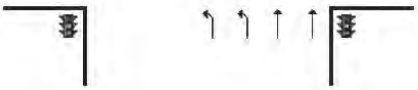


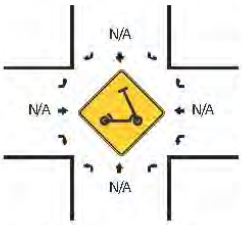
Quality Counts
DATA THAT DRIVES COMMUNITIES











15-Min Count Period Beginning At	Konterra Dr (Northbound)				Konterra Dr (Southbound)				MD 200 On Ramp (Eastbound)				MD 200 On Ramp (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
6:30 AM	31	46	0	0	0	86	2	0	0	0	0	0	0	0	0	0	165	
6:45 AM	34	47	0	0	0	123	3	0	0	0	0	0	0	0	0	0	207	
7:00 AM	32	44	0	1	0	81	3	0	0	0	0	0	0	0	0	0	161	
7:15 AM	33	53	0	0	0	86	9	0	0	0	0	0	0	0	0	0	181	714
7:30 AM	30	54	0	0	0	101	3	0	0	0	0	0	0	0	0	0	188	737
7:45 AM	48	59	0	0	0	100	3	0	0	0	0	0	0	0	0	0	210	740
8:00 AM	33	59	0	0	0	91	4	0	0	0	0	0	0	0	0	0	187	766
8:15 AM	37	72	0	0	0	67	1	0	0	0	0	0	0	0	0	0	177	762
8:30 AM	32	74	0	0	0	71	2	0	0	0	0	0	0	0	0	0	179	753
8:45 AM	38	73	0	0	0	96	2	0	0	0	0	0	0	0	0	0	209	752
9:00 AM	31	58	0	0	0	69	4	0	0	0	0	0	0	0	0	0	162	727
9:15 AM	24	55	0	0	0	65	3	0	0	0	0	0	0	0	0	0	147	697

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	192	236	0	0	0	400	12	0	0	0	0	0	0	0	0	0	840
Heavy Trucks	40	28	0		0	24	0		0	0	0		0	0	0		92
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	4	0		0	0	0		0	0	0		4
Scooters																	

Comments:

Report generated on 1/14/2021 10:31 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

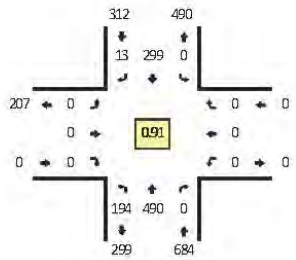
Type of peak hour being reported: Intersection Peak

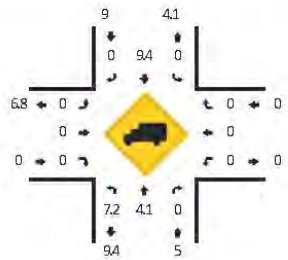
Method for determining peak hour: Total Entering Volume

LOCATION: Konterra Dr -- MD 200 On Ramp
CITY/STATE: Beltsville, MD

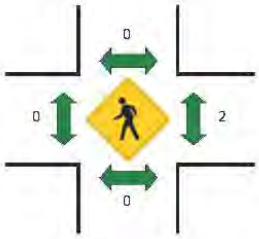
QC JOB #: 15313004
DATE: Tue, Jan 5 2021

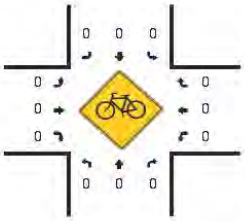
Peak-Hour: 3:45 PM -- 4:45 PM
Peak 15-Min: 4:00 PM -- 4:15 PM

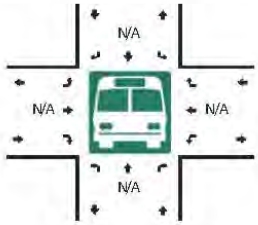


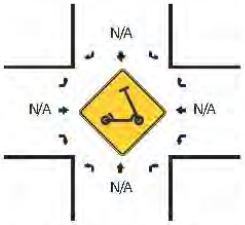


Quality Counts
DATA THAT DRIVES COMMUNITIES









15-Min Count Period Beginning At	Konterra Dr (Northbound)				Konterra Dr (Southbound)				MD 200 On Ramp (Eastbound)				MD 200 On Ramp (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
3:00 PM	36	119	0	0	0	80	16	0	0	0	0	0	0	0	0	0	251	
3:15 PM	45	100	0	0	0	79	4	1	0	0	0	0	0	0	0	0	229	
3:30 PM	30	151	0	0	0	57	0	0	0	0	0	0	0	0	0	0	238	
3:45 PM	48	116	0	0	0	65	4	0	0	0	0	0	0	0	0	0	233	951
4:00 PM	47	143	0	0	0	81	3	0	0	0	0	0	0	0	0	0	274	974
4:15 PM	53	113	0	0	0	72	3	0	0	0	0	0	0	0	0	0	241	986
4:30 PM	46	118	0	0	0	81	3	0	0	0	0	0	0	0	0	0	248	996
4:45 PM	36	123	0	0	0	61	2	0	0	0	0	0	0	0	0	0	222	985
5:00 PM	38	126	0	0	0	73	4	0	0	0	0	0	0	0	0	0	241	952
5:15 PM	46	101	0	0	0	82	0	0	0	0	0	0	0	0	0	0	229	940
5:30 PM	43	140	0	0	0	77	5	0	0	0	0	0	0	0	0	0	265	957
5:45 PM	42	96	0	0	0	54	4	0	0	0	0	0	0	0	0	0	196	931
6:00 PM	30	89	0	0	0	44	2	0	0	0	0	0	0	0	0	0	165	855
6:15 PM	27	67	0	0	0	43	2	0	0	0	0	0	0	0	0	0	139	765
6:30 PM	16	64	0	0	0	52	1	0	0	0	0	0	0	0	0	0	133	633
6:45 PM	20	53	0	0	0	33	2	0	0	0	0	0	0	0	0	0	108	545

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	188	572	0	0	0	324	12	0	0	0	0	0	0	0	0	0	1096
Heavy Trucks	4	20	0		0	40	0		0	0	0		0	0	0		64
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

Report generated on 1/14/2021 10:31 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

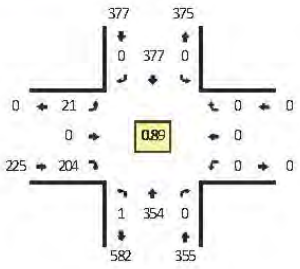
Type of peak hour being reported: Intersection Peak

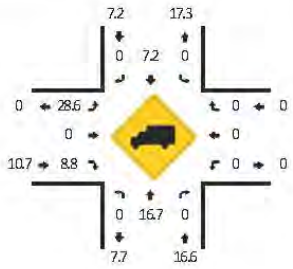
Method for determining peak hour: Total Entering Volume

LOCATION: Konterra Dr -- MD 200 Off Ramp
CITY/STATE: Beltsville, MD

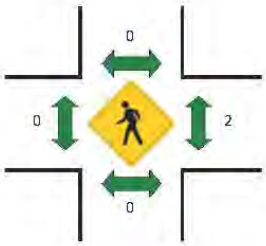
QC JOB #: 15313001
DATE: Tue, Jan 5 2021

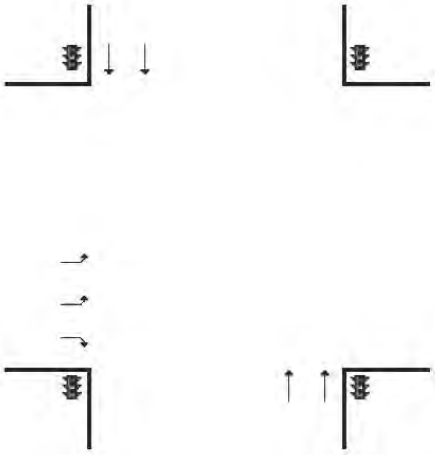
Peak-Hour: 7:15 AM -- 8:15 AM
Peak 15-Min: 7:45 AM -- 8:00 AM

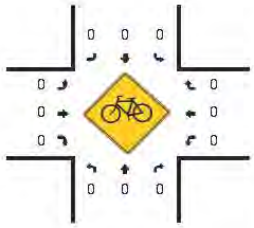


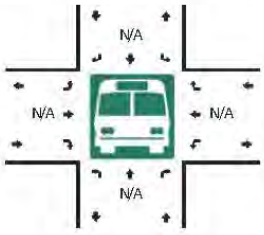


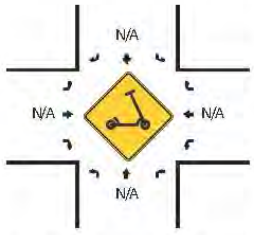
Quality Counts
DATA THAT DRIVES COMMUNITIES











15-Min Count Period Beginning At	Konterra Dr (Northbound)				Konterra Dr (Southbound)				MD 200 Off Ramp (Eastbound)				MD 200 Off Ramp (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
6:30 AM	0	71	0	0	0	85	0	0	4	0	44	0	0	0	0	0	204	
6:45 AM	0	82	0	0	0	124	0	0	0	0	58	0	0	0	0	0	264	
7:00 AM	0	71	0	0	0	82	0	0	3	0	57	0	0	0	0	0	213	
7:15 AM	0	84	0	0	0	85	0	0	2	0	49	0	0	0	0	0	220	901
7:30 AM	0	75	0	0	0	100	0	0	8	0	47	0	0	0	0	0	230	927
7:45 AM	0	105	0	1	0	101	0	0	4	0	59	0	0	0	0	0	270	933
8:00 AM	0	90	0	0	0	91	0	0	7	0	49	0	0	0	0	0	237	957
8:15 AM	0	103	0	0	0	69	0	0	3	0	35	0	0	0	0	0	210	947
8:30 AM	0	98	0	0	0	69	0	0	9	0	48	0	0	0	0	0	224	941
8:45 AM	0	107	0	0	0	101	0	0	5	0	45	0	0	0	0	0	258	929
9:00 AM	0	84	0	0	0	67	0	0	3	0	52	0	0	0	0	0	206	898
9:15 AM	0	78	0	0	0	64	0	0	3	0	30	0	0	0	0	0	175	863

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	420	0	4	0	404	0	0	16	0	236	0	0	0	0	0	1080
Heavy Trucks	0	64	0		0	28	0		8	0	16		0	0	0		116
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

Report generated on 1/14/2021 10:31 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

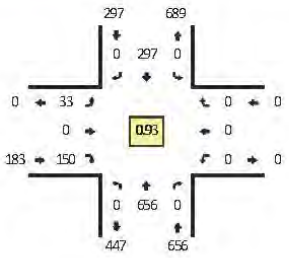
Type of peak hour being reported: Intersection Peak

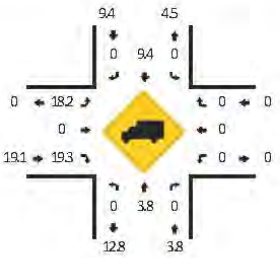
Method for determining peak hour: Total Entering Volume

LOCATION: Konterra Dr -- MD 200 Off Ramp
CITY/STATE: Beltsville, MD

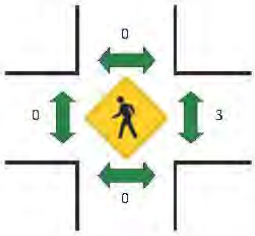
QC JOB #: 15313002
DATE: Tue, Jan 5 2021

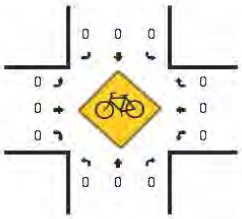
Peak-Hour: 3:45 PM -- 4:45 PM
Peak 15-Min: 4:00 PM -- 4:15 PM

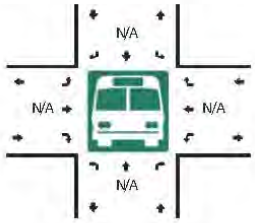


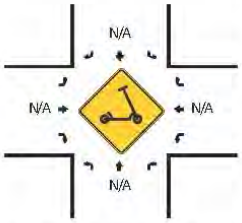


Quality Counts
DATA THAT DRIVES COMMUNITIES









15-Min Count Period Beginning At	Konterra Dr (Northbound)				Konterra Dr (Southbound)				MD 200 Off Ramp (Eastbound)				MD 200 Off Ramp (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
3:00 PM	0	153	0	1	0	77	0	0	3	0	43	0	0	0	0	0	277	
3:15 PM	0	135	0	0	0	78	0	0	8	0	30	0	0	0	0	0	251	
3:30 PM	0	168	0	0	0	58	0	0	10	0	43	0	0	0	0	0	279	
3:45 PM	0	162	0	0	0	69	0	0	6	0	37	0	0	0	0	0	274	1081
4:00 PM	0	181	0	0	0	76	0	0	12	0	35	0	0	0	0	0	304	1108
4:15 PM	0	158	0	0	0	71	0	0	6	0	32	0	0	0	0	0	267	1124
4:30 PM	0	155	0	0	0	81	0	0	9	0	46	0	0	0	0	0	291	1136
4:45 PM	0	149	0	0	0	61	0	0	7	0	41	0	0	0	0	0	258	1120
5:00 PM	0	157	0	0	0	73	0	0	4	0	27	0	0	0	0	0	261	1077
5:15 PM	0	141	0	0	0	89	0	0	4	0	45	0	0	0	0	0	279	1089
5:30 PM	0	173	0	0	0	72	0	0	10	0	25	0	0	0	0	0	280	1078
5:45 PM	0	128	0	0	0	53	0	0	7	0	39	0	0	0	0	0	227	1047
6:00 PM	0	116	0	0	0	45	0	0	3	0	30	0	0	0	0	0	194	980
6:15 PM	0	91	0	0	0	40	0	0	5	0	29	0	0	0	0	0	165	866
6:30 PM	0	75	0	0	0	52	0	0	8	0	20	0	0	0	0	0	155	741
6:45 PM	0	70	0	0	0	31	0	0	5	0	8	0	0	0	0	0	114	628

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	724	0	0	0	304	0	0	48	0	140	0	0	0	0	0	1216
Heavy Trucks	0	20	0		0	40	0		0	0	12		0	0	0		72
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

Report generated on 1/14/2021 10:31 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

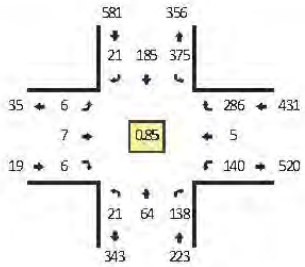
Type of peak hour being reported: Intersection Peak

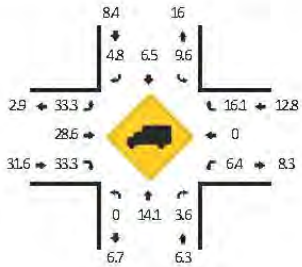
Method for determining peak hour: Total Entering Volume

LOCATION: Konterra Dr/Virginia Manor Rd -- Muirkirk Rd
CITY/STATE: Beltsville, MD

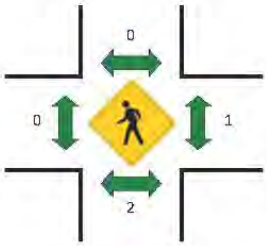
QC JOB #: 15313005
DATE: Tue, Jan 5 2021

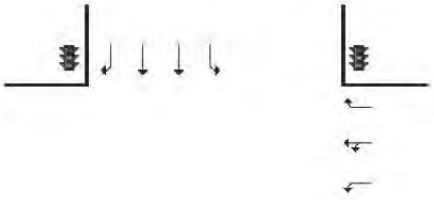
Peak-Hour: 7:15 AM -- 8:15 AM
Peak 15-Min: 7:45 AM -- 8:00 AM

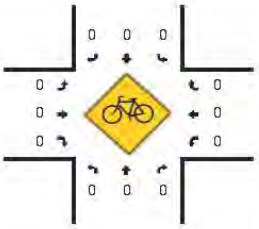


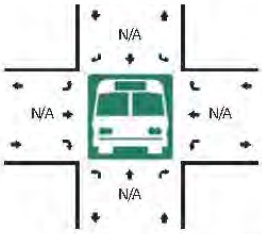


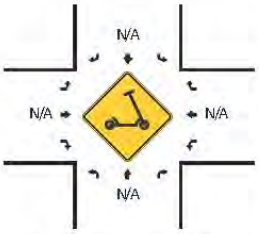
Quality Counts
DATA THAT DRIVES COMMUNITIES











15-Min Count Period Beginning At	Konterra Dr/Virginia Manor Rd (Northbound)				Konterra Dr/Virginia Manor Rd (Southbound)				Muirkirk Rd (Eastbound)				Muirkirk Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
6:30 AM	1	16	27	1	94	32	8	0	0	0	0	0	30	2	56	0	267	
6:45 AM	3	17	37	3	120	54	1	0	1	1	2	0	31	3	60	0	333	
7:00 AM	0	12	30	0	85	43	7	0	2	1	1	0	30	5	63	1	280	
7:15 AM	2	17	26	4	89	49	4	0	1	1	0	0	28	2	66	0	289	1169
7:30 AM	3	12	38	2	90	45	4	0	4	3	3	0	45	0	64	0	313	1215
7:45 AM	4	21	47	4	106	54	8	0	1	2	0	0	36	1	87	0	371	1253
8:00 AM	0	14	27	2	90	37	5	0	0	1	3	0	31	2	69	0	281	1254
8:15 AM	1	17	37	1	60	48	3	0	1	1	0	0	35	0	82	1	287	1252
8:30 AM	2	19	26	4	74	37	2	0	0	1	0	0	39	1	84	0	289	1228
8:45 AM	0	16	31	1	86	55	3	0	4	1	0	0	26	2	88	0	313	1170
9:00 AM	3	22	35	0	70	45	2	0	0	0	0	0	28	1	57	1	264	1153
9:15 AM	4	17	30	5	59	38	1	0	0	1	0	0	18	2	64	0	239	1105

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	16	84	188	16	424	216	32	0	4	8	0	0	144	4	348	0	1484
Heavy Trucks	0	16	8		40	16	0		0	4	0		0	0	56		140
Buses																	
Pedestrians		4				0				0				4			8
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

Report generated on 1/14/2021 10:31 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

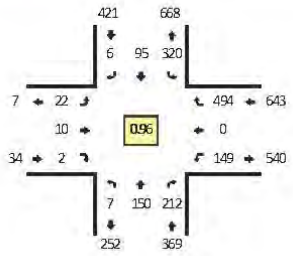
Type of peak hour being reported: Intersection Peak

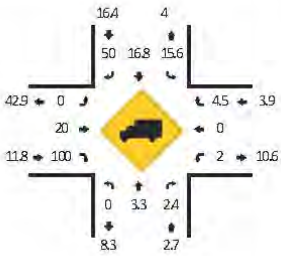
Method for determining peak hour: Total Entering Volume

LOCATION: Konterra Dr/Virginia Manor Rd -- Muirkirk Rd
CITY/STATE: Beltsville, MD

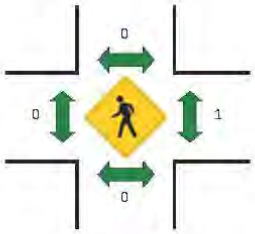
QC JOB #: 15313006
DATE: Tue, Jan 5 2021

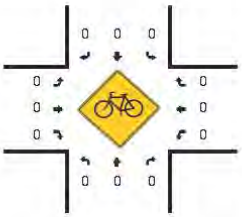
Peak-Hour: 3:30 PM -- 4:30 PM
Peak 15-Min: 4:00 PM -- 4:15 PM

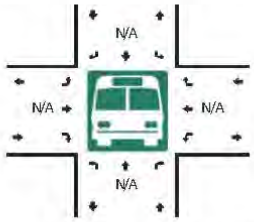


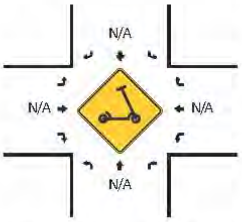


Quality Counts
DATA THAT DRIVES COMMUNITIES









15-Min Count Period Beginning At	Konterra Dr/Virginia Manor Rd (Northbound)				Konterra Dr/Virginia Manor Rd (Southbound)				Muirkirk Rd (Eastbound)				Muirkirk Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
3:00 PM	1	37	38	0	87	27	0	0	4	1	1	0	47	1	118	0	362	
3:15 PM	4	36	39	2	77	24	1	2	1	2	1	0	36	2	91	1	319	
3:30 PM	0	39	59	1	79	23	2	1	4	3	2	0	29	0	129	0	371	
3:45 PM	0	40	52	3	80	21	0	1	6	1	0	0	38	0	119	0	361	1413
4:00 PM	1	45	48	1	84	28	2	0	3	2	0	0	34	0	136	0	384	1435
4:15 PM	0	26	53	1	75	23	2	0	9	4	0	0	48	0	110	0	351	1467
4:30 PM	1	42	46	0	93	31	0	0	6	2	1	0	31	1	109	0	363	1459
4:45 PM	1	29	37	0	80	24	0	0	6	4	0	0	36	0	127	1	345	1443
5:00 PM	1	49	47	0	78	18	0	0	8	6	2	0	35	1	99	0	344	1403
5:15 PM	0	37	59	0	105	27	0	0	6	3	0	0	42	1	105	1	386	1438
5:30 PM	0	48	46	0	64	23	4	1	7	3	0	0	32	2	112	1	343	1418
5:45 PM	1	32	51	0	67	25	1	0	8	1	0	0	22	0	88	1	297	1370
6:00 PM	2	21	32	0	57	17	2	0	8	2	0	0	34	2	86	0	263	1289
6:15 PM	0	26	40	0	53	23	2	0	5	0	0	0	29	1	57	0	236	1139
6:30 PM	1	12	38	0	51	14	0	0	2	2	0	0	27	0	58	0	205	1001
6:45 PM	1	11	28	0	26	11	0	1	4	0	2	0	14	0	60	0	158	862

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	4	180	192	4	336	112	8	0	12	8	0	0	136	0	544	0	1536
Heavy Trucks	0	0	8		48	12	8		0	0	0		4	0	12		92
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

Report generated on 1/14/2021 10:31 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

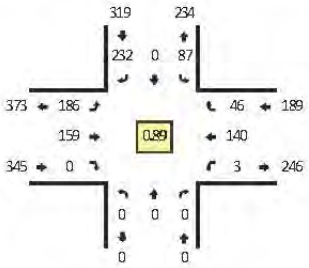
Type of peak hour being reported: Intersection Peak

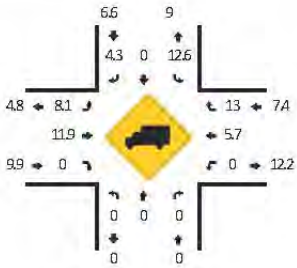
Method for determining peak hour: Total Entering Volume

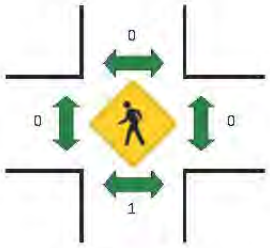
LOCATION: Virginia Manor Rd/MD 206 -- MD 212
CITY/STATE: Beltsville, MD

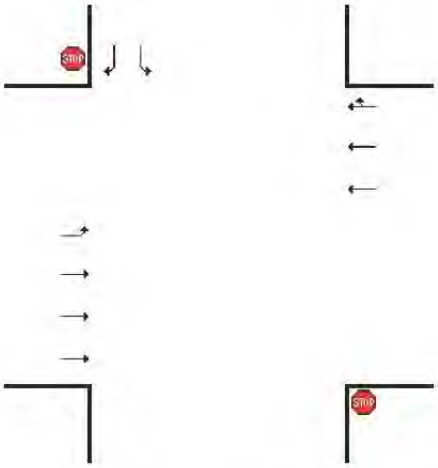
QC JOB #: 15313007
DATE: Tue, Jan 5 2021

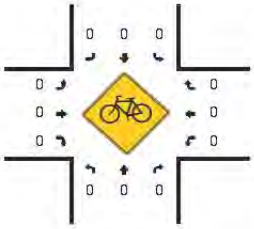
Peak-Hour: 7:30 AM -- 8:30 AM
Peak 15-Min: 7:45 AM -- 8:00 AM

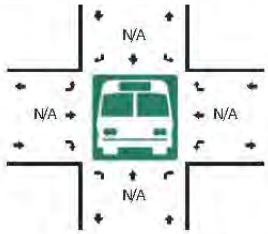


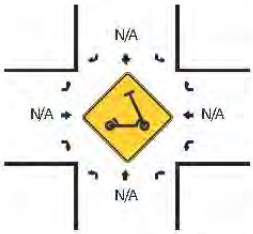












15-Min Count Period Beginning At	Virginia Manor Rd/MD 206 (Northbound)				Virginia Manor Rd/MD 206 (Southbound)				MD 212 (Eastbound)				MD 212 (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
6:30 AM	0	0	0	0	18	0	38	0	39	29	0	1	0	32	8	0	165	
6:45 AM	0	0	0	0	20	0	66	1	47	25	0	0	0	30	11	0	200	
7:00 AM	0	0	0	0	15	0	53	0	36	27	0	0	0	34	6	0	171	
7:15 AM	0	0	0	0	10	0	62	0	35	29	0	0	0	28	15	0	179	715
7:30 AM	0	0	0	0	20	0	70	1	49	39	0	1	0	38	6	2	226	776
7:45 AM	0	0	0	0	20	0	57	0	57	44	0	0	0	42	20	0	240	816
8:00 AM	0	0	0	0	23	0	53	2	32	44	0	0	0	33	11	1	199	844
8:15 AM	0	0	0	0	21	0	52	0	47	32	0	0	0	27	9	0	188	853
8:30 AM	0	0	0	0	21	0	45	0	43	41	0	1	0	31	9	0	191	818
8:45 AM	0	0	0	0	27	0	48	1	39	44	0	1	0	36	9	0	205	783
9:00 AM	0	0	0	0	20	0	46	1	48	39	0	0	0	29	11	0	194	778
9:15 AM	0	0	0	0	18	0	37	0	44	37	0	0	0	21	11	0	168	758

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	0	0	0	80	0	228	0	228	176	0	0	0	168	80	0	960
Heavy Trucks	0	0	0		8	0	4		8	12	0		0	12	12		56
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

Report generated on 1/14/2021 10:31 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

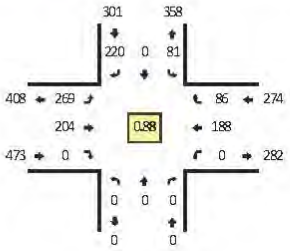
Type of peak hour being reported: Intersection Peak

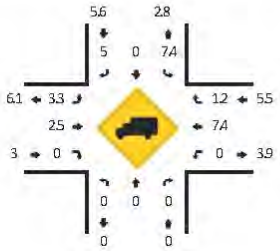
Method for determining peak hour: Total Entering Volume

LOCATION: Virginia Manor Rd/MD 206 -- MD 212
CITY/STATE: Beltsville, MD

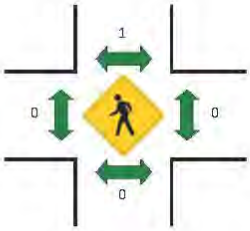
QC JOB #: 15313008
DATE: Tue, Jan 5 2021

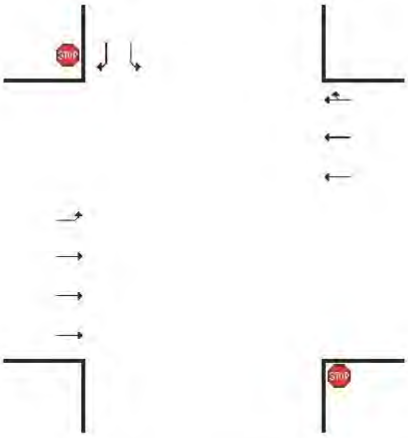
Peak-Hour: 3:45 PM -- 4:45 PM
Peak 15-Min: 4:15 PM -- 4:30 PM

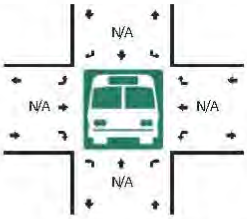


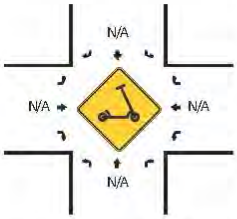


Quality Counts
DATA THAT DRIVES COMMUNITIES









15-Min Count Period Beginning At	Virginia Manor Rd/MD 206 (Northbound)				Virginia Manor Rd/MD 206 (Southbound)				MD 212 (Eastbound)				MD 212 (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
3:00 PM	0	0	0	0	17	0	60	0	52	52	0	0	0	46	22	0	249	
3:15 PM	0	0	0	0	18	0	47	0	61	37	0	0	0	47	20	3	233	
3:30 PM	0	0	0	0	15	0	42	1	80	51	0	0	0	30	18	1	238	
3:45 PM	0	0	0	0	19	0	46	1	70	38	0	0	0	34	20	0	228	948
4:00 PM	0	0	0	0	17	0	50	0	74	48	0	0	0	46	23	0	258	957
4:15 PM	0	0	0	0	21	0	73	1	66	61	0	0	0	56	21	0	299	1023
4:30 PM	0	0	0	0	21	0	51	1	59	57	0	0	0	52	22	0	263	1048
4:45 PM	0	0	0	0	17	0	34	1	54	41	0	0	0	40	15	1	203	1023
5:00 PM	0	0	0	0	17	0	56	0	65	45	0	0	0	46	32	0	261	1026
5:15 PM	0	0	0	0	22	0	50	2	72	54	0	0	0	56	24	1	281	1008
5:30 PM	0	0	0	0	14	0	46	0	66	44	0	0	0	57	31	1	259	1004
5:45 PM	0	0	0	0	11	0	39	0	68	42	0	0	0	37	13	1	211	1012
6:00 PM	0	0	0	0	15	0	45	0	41	37	0	0	0	34	12	0	184	935
6:15 PM	0	0	0	0	15	0	37	3	49	33	0	0	0	38	14	1	190	844
6:30 PM	0	0	0	0	13	0	36	0	37	36	0	0	0	34	14	1	171	756
6:45 PM	0	0	0	0	10	0	20	0	34	26	0	0	0	31	7	0	128	673

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	0	0	0	84	0	292	4	264	244	0	0	0	224	84	0	1196
Heavy Trucks	0	0	0		8	0	12		12	12	0		0	12	4		60
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

Report generated on 1/14/2021 10:31 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

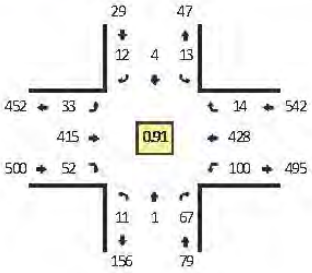
Type of peak hour being reported: Intersection Peak

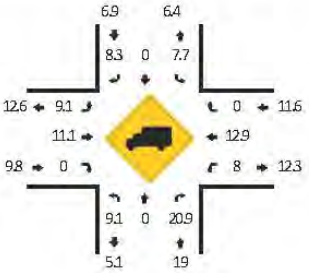
Method for determining peak hour: Total Entering Volume

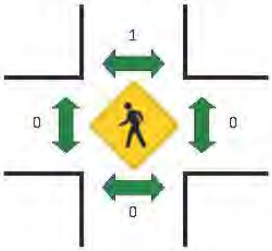
LOCATION: Muirkirk Meadows Dr -- Muirkirk Rd
CITY/STATE: Beltsville, MD

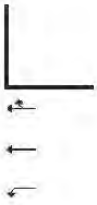
QC JOB #: 15313009
DATE: Tue, Jan 5 2021

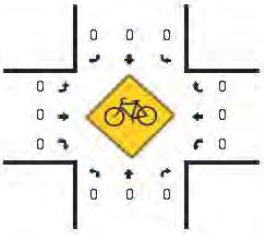
Peak-Hour: 7:30 AM -- 8:30 AM
Peak 15-Min: 7:45 AM -- 8:00 AM

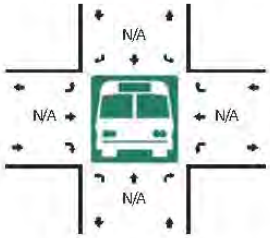


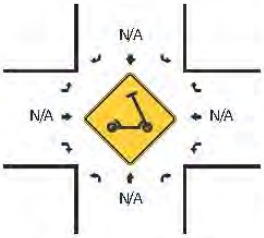












15-Min Count Period Beginning At	Muirkirk Meadows Dr (Northbound)				Muirkirk Meadows Dr (Southbound)				Muirkirk Rd (Eastbound)				Muirkirk Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
6:30 AM	0	2	4	0	0	0	0	0	6	109	13	0	15	85	3	0	237	
6:45 AM	2	2	16	0	1	0	4	0	8	126	28	0	21	90	0	0	298	
7:00 AM	2	0	8	0	2	0	2	0	7	99	9	0	7	87	0	0	223	
7:15 AM	0	1	14	0	3	0	1	0	13	86	18	0	26	99	3	0	264	1022
7:30 AM	1	1	16	0	4	0	3	0	6	112	16	0	21	105	3	0	288	1073
7:45 AM	2	0	10	0	3	1	3	0	13	119	10	0	28	118	9	0	316	1091
8:00 AM	5	0	24	0	4	0	2	0	7	105	15	0	21	92	1	0	276	1144
8:15 AM	3	0	17	0	2	3	4	0	6	79	11	1	30	113	1	0	270	1150
8:30 AM	6	1	17	0	2	0	6	0	1	91	11	2	27	104	2	0	270	1132
8:45 AM	3	2	16	0	3	1	6	0	7	100	6	0	25	112	2	0	283	1099
9:00 AM	3	1	19	0	2	0	4	0	5	90	12	0	32	81	1	0	250	1073
9:15 AM	6	0	28	0	0	0	2	0	2	89	2	0	18	78	2	0	227	1030

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	8	0	40	0	12	4	12	0	52	476	40	0	112	472	36	0	1264
Heavy Trucks	4	0	16		4	0	0		0	52	0		16	60	0		152
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

Report generated on 1/14/2021 10:31 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

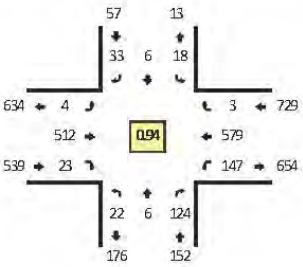
Type of peak hour being reported: Intersection Peak

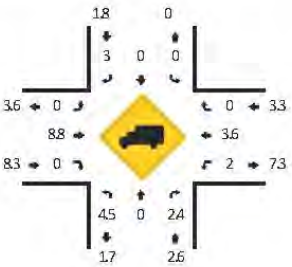
Method for determining peak hour: Total Entering Volume

LOCATION: Muirkirk Meadows Dr -- Muirkirk Rd
CITY/STATE: Beltsville, MD

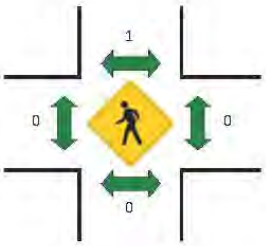
QC JOB #: 15313010
DATE: Tue, Jan 5 2021

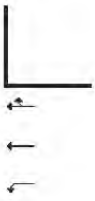
Peak-Hour: 4:00 PM -- 5:00 PM
Peak 15-Min: 4:00 PM -- 4:15 PM

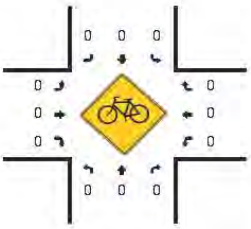


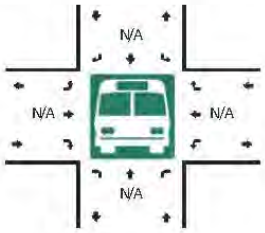


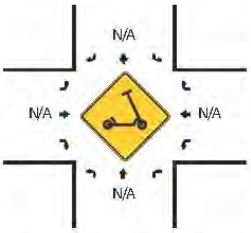
Quality Counts
DATA THAT DRIVES COMMUNITIES











15-Min Count Period Beginning At	Muirkirk Meadows Dr (Northbound)				Muirkirk Meadows Dr (Southbound)				Muirkirk Rd (Eastbound)				Muirkirk Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
3:00 PM	14	1	39	0	4	1	5	0	2	116	10	0	32	149	1	0	374	
3:15 PM	5	2	36	0	7	0	6	0	4	101	11	0	35	119	0	0	326	
3:30 PM	5	2	28	0	3	1	5	0	4	122	10	0	43	148	1	0	372	
3:45 PM	10	1	24	0	7	1	6	0	3	118	9	0	29	136	4	0	348	1420
4:00 PM	12	1	33	0	4	1	12	0	1	132	5	0	40	152	0	0	393	1439
4:15 PM	5	2	26	0	4	1	7	0	0	122	4	0	42	147	2	0	362	1475
4:30 PM	4	3	26	0	6	2	9	0	2	130	7	0	32	129	0	0	350	1453
4:45 PM	1	0	39	0	4	2	5	0	1	128	7	0	33	151	1	0	372	1477
5:00 PM	13	0	35	0	4	0	4	0	0	124	2	0	37	121	1	0	341	1425
5:15 PM	8	0	34	0	5	0	5	0	4	150	11	0	29	132	1	0	379	1442
5:30 PM	4	0	33	0	6	1	6	0	0	112	4	0	32	138	0	0	336	1428
5:45 PM	3	0	38	0	5	2	3	0	0	115	3	0	34	109	0	0	312	1368
6:00 PM	7	0	36	0	5	0	5	0	0	91	4	0	33	106	1	2	290	1317
6:15 PM	1	0	42	0	4	0	0	0	0	92	1	0	26	89	1	0	256	1194
6:30 PM	3	1	24	0	6	1	2	0	0	88	1	0	26	83	1	0	236	1094
6:45 PM	3	0	32	0	4	0	2	0	0	60	3	0	26	62	0	0	192	974

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	48	4	132	0	16	4	48	0	4	528	20	0	160	608	0	0	1572
Heavy Trucks	0	0	0		0	0	4		0	44	0		4	12	0		64
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

Report generated on 1/14/2021 10:31 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

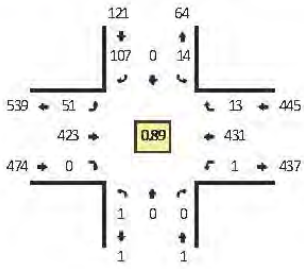
Type of peak hour being reported: Intersection Peak

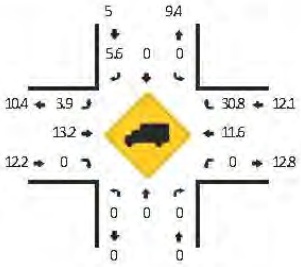
Method for determining peak hour: Total Entering Volume

LOCATION: Brickyard Blvd -- Muirkirk Rd
CITY/STATE: Beltsville, MD

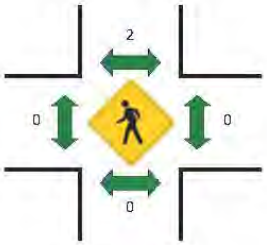
QC JOB #: 15313011
DATE: Tue, Jan 5 2021

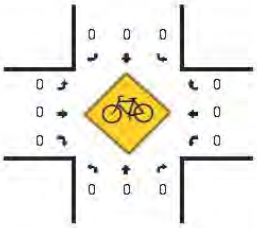
Peak-Hour: 7:30 AM -- 8:30 AM
Peak 15-Min: 7:45 AM -- 8:00 AM

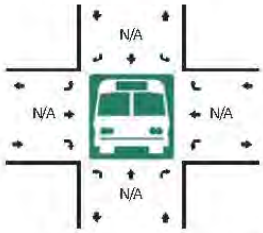


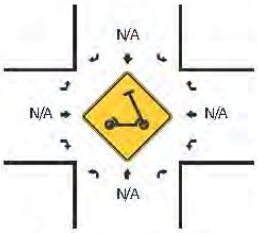


Quality Counts
DATA THAT DRIVES COMMUNITIES









15-Min Count Period Beginning At	Brickyard Blvd (Northbound)				Brickyard Blvd (Southbound)				Muirkirk Rd (Eastbound)				Muirkirk Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
6:30 AM	0	0	0	0	1	0	12	0	5	104	0	0	0	86	2	0	210	
6:45 AM	0	0	0	0	0	0	10	0	13	124	1	0	0	96	1	0	245	
7:00 AM	0	0	0	0	1	0	15	0	11	93	0	0	0	83	0	0	203	
7:15 AM	0	1	0	0	3	1	17	0	15	86	0	0	1	105	4	0	233	891
7:30 AM	0	0	0	0	1	0	26	0	10	117	0	0	0	108	3	0	265	946
7:45 AM	1	0	0	0	3	0	25	0	11	119	0	0	1	130	4	0	294	995
8:00 AM	0	0	0	0	6	0	29	0	14	106	0	0	0	87	3	0	245	1037
8:15 AM	0	0	0	0	4	0	27	0	16	81	0	0	0	106	3	0	237	1041
8:30 AM	0	0	1	0	2	0	22	0	15	87	0	0	2	111	6	1	247	1023
8:45 AM	0	0	0	0	3	0	27	0	20	97	0	1	1	101	1	0	251	980
9:00 AM	0	0	1	0	8	0	15	0	15	90	0	0	0	87	6	0	222	957
9:15 AM	1	0	0	0	4	0	12	0	16	96	0	0	0	83	6	0	218	938

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	4	0	0	0	12	0	100	0	44	476	0	0	4	520	16	0	1176
Heavy Trucks	0	0	0		0	0	4		4	56	0		0	48	4		116
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

Report generated on 1/14/2021 10:31 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

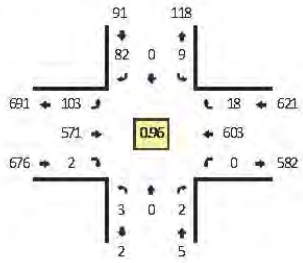
Type of peak hour being reported: Intersection Peak

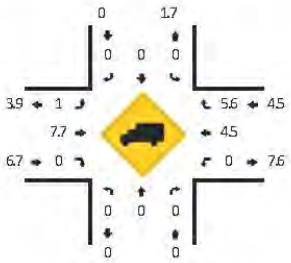
Method for determining peak hour: Total Entering Volume

LOCATION: Brickyard Blvd -- Muirkirk Rd
CITY/STATE: Beltsville, MD

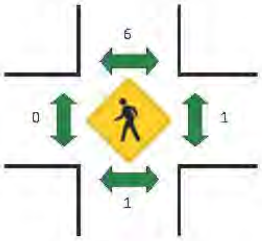
QC JOB #: 15313012
DATE: Tue, Jan 5 2021

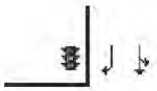
Peak-Hour: 4:00 PM -- 5:00 PM
Peak 15-Min: 4:00 PM -- 4:15 PM

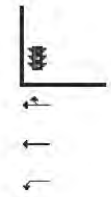


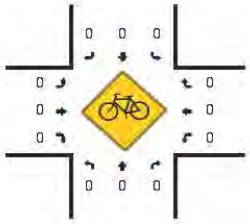


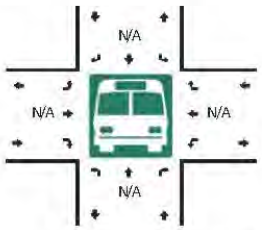
Quality Counts
DATA THAT DRIVES COMMUNITIES

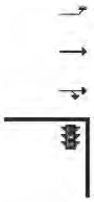


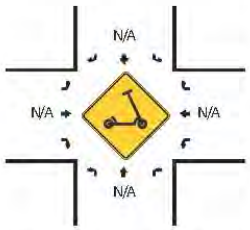












15-Min Count Period Beginning At	Brickyard Blvd (Northbound)				Brickyard Blvd (Southbound)				Muirkirk Rd (Eastbound)				Muirkirk Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
3:00 PM	0	0	2	0	0	0	19	1	27	131	0	0	0	146	2	0	328	
3:15 PM	1	0	1	0	3	0	15	0	24	117	0	0	0	137	3	0	301	
3:30 PM	0	0	7	0	6	0	21	0	22	150	0	0	0	147	0	0	353	
3:45 PM	2	0	0	0	2	0	20	0	28	116	0	0	0	138	3	0	309	1291
4:00 PM	0	0	1	0	4	0	18	0	25	147	0	1	0	160	7	0	363	1326
4:15 PM	1	0	0	0	1	0	21	0	20	146	0	0	0	149	7	0	345	1370
4:30 PM	2	0	0	0	4	0	15	0	22	138	0	0	0	143	1	0	325	1342
4:45 PM	0	0	1	0	0	0	28	0	33	140	2	2	0	151	3	0	360	1393
5:00 PM	0	0	1	0	7	0	20	0	29	138	0	0	0	121	5	0	321	1351
5:15 PM	1	0	1	0	1	0	22	0	36	158	0	0	0	131	6	0	356	1362
5:30 PM	0	0	0	0	7	0	20	0	41	122	0	0	0	128	4	0	322	1359
5:45 PM	0	0	0	0	3	0	26	0	38	117	0	0	0	107	10	0	301	1300
6:00 PM	0	0	0	0	3	0	29	1	32	109	0	0	0	123	5	0	302	1281
6:15 PM	1	0	1	0	1	0	25	0	29	108	0	0	0	81	7	0	253	1178
6:30 PM	0	0	0	0	2	0	15	0	31	93	0	0	0	92	11	0	244	1100
6:45 PM	1	0	1	0	3	0	23	0	29	73	0	0	0	64	7	0	201	1000

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	0	4	0	16	0	72	0	100	588	0	4	0	640	28	0	1452
Heavy Trucks	0	0	0		0	0	0		0	36	0		0	28	0		64
Buses																	
Pedestrians		4				8				0				4			16
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

Report generated on 1/14/2021 10:31 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

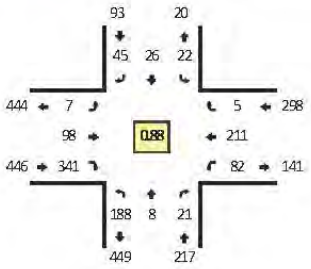
Type of peak hour being reported: Intersection Peak

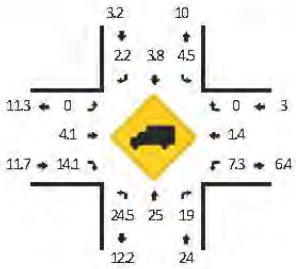
Method for determining peak hour: Total Entering Volume

LOCATION: Old Baltimore Pike/Cedarhurst Dr -- Muirkirk Rd
CITY/STATE: Beltsville, MD

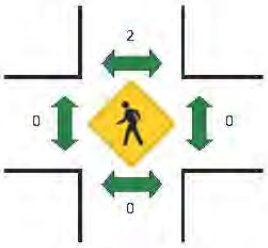
QC JOB #: 15313013
DATE: Tue, Jan 5 2021

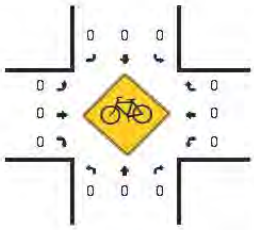
Peak-Hour: 7:15 AM -- 8:15 AM
Peak 15-Min: 7:45 AM -- 8:00 AM

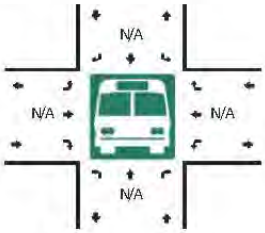


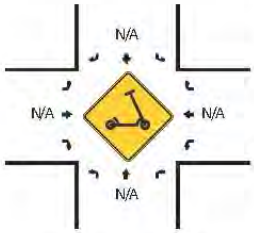


Quality Counts
DATA THAT DRIVES COMMUNITIES









15-Min Count Period Beginning At	Old Baltimore Pike/Cedarhurst Dr (Northbound)				Old Baltimore Pike/Cedarhurst Dr (Southbound)				Muirkirk Rd (Eastbound)				Muirkirk Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
6:30 AM	53	0	5	0	5	7	5	0	0	20	74	0	20	31	1	0	221	
6:45 AM	48	1	4	0	2	3	6	0	3	29	93	0	34	49	0	0	272	
7:00 AM	41	1	10	0	2	3	4	0	2	22	80	0	31	36	1	0	233	
7:15 AM	46	1	5	0	8	8	13	0	2	18	69	0	20	49	0	0	239	965
7:30 AM	43	4	6	0	4	9	12	0	1	27	86	0	20	56	2	0	270	1014
7:45 AM	63	3	5	0	4	6	13	0	1	32	91	0	24	58	0	0	300	1042
8:00 AM	36	0	5	0	6	3	7	0	3	21	95	0	18	48	3	0	245	1054
8:15 AM	54	1	7	0	2	6	15	0	3	33	41	0	17	46	3	0	228	1043
8:30 AM	53	3	7	0	4	3	6	0	6	35	58	0	18	63	0	0	256	1029
8:45 AM	56	1	7	0	1	5	7	0	5	33	62	0	18	45	4	0	244	973
9:00 AM	38	0	6	0	3	6	7	0	3	35	58	0	13	40	0	0	209	937
9:15 AM	41	2	8	0	4	7	7	0	2	28	77	0	10	38	3	0	227	936

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	252	12	20	0	16	24	52	0	4	128	364	0	96	232	0	0	1200
Heavy Trucks	52	8	8		0	4	4		0	0	60		8	4	0		148
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

Report generated on 1/14/2021 10:31 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

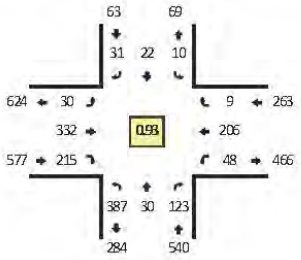
Type of peak hour being reported: Intersection Peak

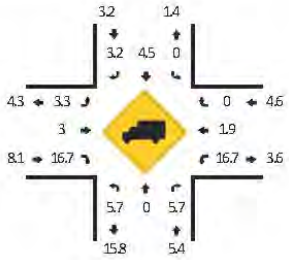
Method for determining peak hour: Total Entering Volume

LOCATION: Old Baltimore Pike/Cedarhurst Dr -- Muirkirk Rd
CITY/STATE: Beltsville, MD

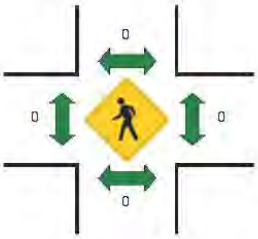
QC JOB #: 15313014
DATE: Tue, Jan 5 2021

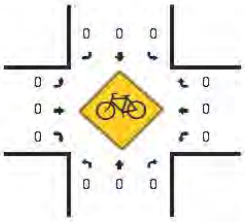
Peak-Hour: 4:00 PM -- 5:00 PM
Peak 15-Min: 4:00 PM -- 4:15 PM

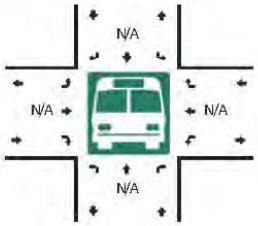


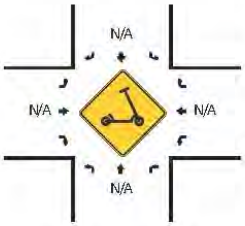


Quality Counts
DATA THAT DRIVES COMMUNITIES









15-Min Count Period Beginning At	Old Baltimore Pike/Cedarhurst Dr (Northbound)				Old Baltimore Pike/Cedarhurst Dr (Southbound)				Muirkirk Rd (Eastbound)				Muirkirk Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
3:00 PM	97	2	23	0	0	6	9	0	6	57	68	0	10	46	1	0	325	
3:15 PM	78	2	28	0	5	2	11	0	5	50	62	0	10	48	2	0	303	
3:30 PM	93	4	15	0	2	4	4	0	6	79	72	0	16	51	2	0	348	
3:45 PM	78	7	29	0	3	6	5	0	9	60	57	0	13	61	0	0	328	1304
4:00 PM	93	7	37	0	1	7	10	0	8	90	58	0	12	60	3	1	387	1366
4:15 PM	91	8	27	0	3	5	11	0	9	80	52	0	17	60	1	0	364	1427
4:30 PM	97	3	29	0	2	2	3	0	5	85	54	0	10	43	2	0	335	1414
4:45 PM	106	12	30	0	4	8	7	0	8	77	51	0	8	43	3	0	357	1443
5:00 PM	80	6	34	0	2	5	4	0	13	74	56	0	13	46	3	0	336	1392
5:15 PM	83	4	29	0	2	3	8	0	6	80	64	0	11	44	5	0	339	1367
5:30 PM	74	7	29	0	1	2	11	0	12	71	61	0	8	50	5	0	331	1363
5:45 PM	75	7	27	0	1	3	3	0	11	65	44	0	10	44	6	0	296	1302
6:00 PM	65	6	18	0	1	7	7	0	11	66	39	0	10	54	3	0	287	1253
6:15 PM	41	5	15	0	4	8	12	0	12	61	26	0	5	32	0	0	221	1135
6:30 PM	54	8	14	0	4	3	8	0	9	69	36	0	13	40	3	0	261	1065
6:45 PM	28	3	10	0	0	1	7	0	7	46	20	0	9	34	2	0	167	936

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	372	28	148	0	4	28	40	0	32	360	232	0	48	240	12	4	1548
Heavy Trucks	20	0	4		0	4	0		4	16	20		16	8	0		92
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

Report generated on 1/14/2021 10:31 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

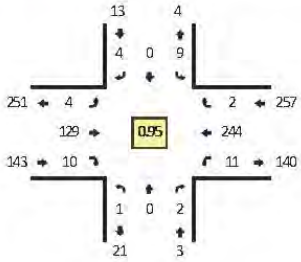
Type of peak hour being reported: Intersection Peak

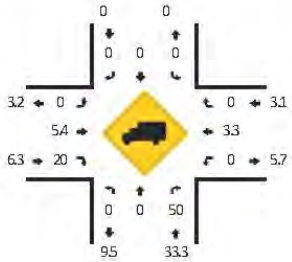
Method for determining peak hour: Total Entering Volume

LOCATION: Snowden Woods Rd/Pasture Rd -- Muirkirk Rd
CITY/STATE: Beltsville, MD

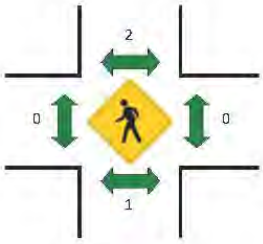
QC JOB #: 15313015
DATE: Tue, Jan 5 2021

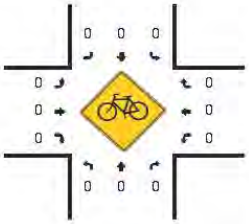
Peak-Hour: 7:15 AM -- 8:15 AM
Peak 15-Min: 7:45 AM -- 8:00 AM

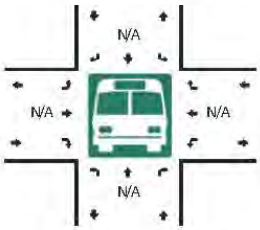


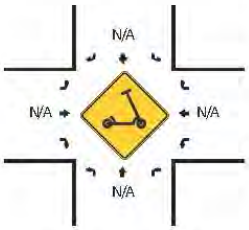


Quality Counts
DATA THAT DRIVES COMMUNITIES









15-Min Count Period Beginning At	Snowden Woods Rd/Pasture Rd (Northbound)				Snowden Woods Rd/Pasture Rd (Southbound)				Muirkirk Rd (Eastbound)				Muirkirk Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
6:30 AM	0	0	1	0	2	0	0	0	1	31	0	0	2	48	0	0	85	
6:45 AM	0	0	1	0	1	0	2	0	0	28	3	0	4	72	1	0	112	
7:00 AM	0	0	1	0	1	0	0	0	0	22	2	0	4	49	0	0	79	
7:15 AM	0	0	0	0	3	0	2	0	1	26	4	1	3	61	1	0	102	378
7:30 AM	0	0	1	0	2	0	0	0	0	33	3	0	3	65	1	0	108	401
7:45 AM	1	0	0	0	2	0	2	0	1	38	2	1	2	60	0	0	109	398
8:00 AM	0	0	1	0	2	0	0	0	0	32	1	0	3	58	0	0	97	416
8:15 AM	0	0	0	0	2	0	3	0	1	43	0	1	1	51	0	0	102	416
8:30 AM	1	0	1	0	2	0	3	0	0	39	2	0	2	56	2	0	108	416
8:45 AM	0	0	1	0	1	0	2	0	0	35	1	1	0	52	0	0	93	400
9:00 AM	1	0	0	0	0	0	6	0	3	33	0	1	2	48	1	0	95	398
9:15 AM	0	0	1	0	1	0	2	0	0	25	4	0	0	35	1	0	69	365

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	4	0	0	0	8	0	8	0	4	152	8	4	8	240	0	0	436
Heavy Trucks	0	0	0		0	0	0		0	4	0		0	12	0		16
Buses																	
Pedestrians		4				4				0				0			8
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

Report generated on 1/14/2021 10:31 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

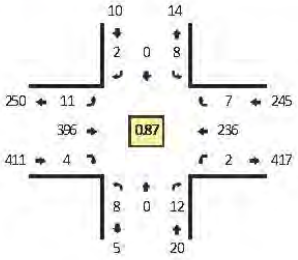
Type of peak hour being reported: Intersection Peak

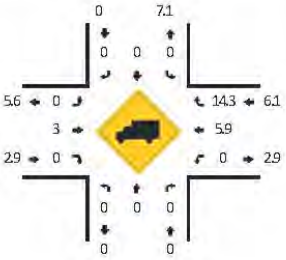
Method for determining peak hour: Total Entering Volume

LOCATION: Snowden Woods Rd/Pasture Rd -- Muirkirk Rd
CITY/STATE: Beltsville, MD

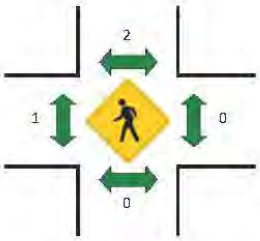
QC JOB #: 15313016
DATE: Tue, Jan 5 2021

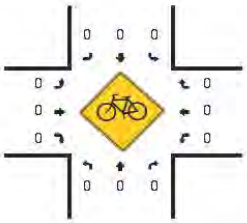
Peak-Hour: 3:30 PM -- 4:30 PM
Peak 15-Min: 4:00 PM -- 4:15 PM

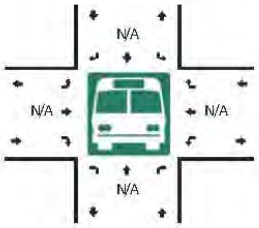


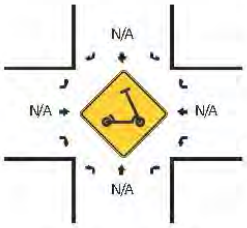


Quality Counts
DATA THAT DRIVES COMMUNITIES









15-Min Count Period Beginning At	Snowden Woods Rd/Pasture Rd (Northbound)				Snowden Woods Rd/Pasture Rd (Southbound)				Muirkirk Rd (Eastbound)				Muirkirk Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
3:00 PM	1	0	2	0	2	0	1	0	4	68	1	0	1	45	3	0	128	
3:15 PM	2	0	1	0	1	0	3	0	1	66	1	1	1	40	1	0	118	
3:30 PM	1	0	5	0	3	0	1	0	1	91	1	0	0	61	3	1	168	
3:45 PM	2	0	3	0	1	0	0	0	1	87	2	1	1	53	2	0	153	567
4:00 PM	3	0	4	0	1	0	0	0	3	118	1	1	0	65	1	0	197	636
4:15 PM	2	0	0	0	3	0	1	0	2	100	0	2	0	57	1	0	168	686
4:30 PM	1	0	0	0	2	0	2	0	2	103	0	0	0	38	2	0	150	668
4:45 PM	2	0	0	0	4	0	4	0	5	93	0	0	0	47	5	0	160	675
5:00 PM	1	0	0	0	3	0	1	0	1	100	0	1	0	51	4	0	162	640
5:15 PM	1	0	1	0	1	0	1	0	1	92	0	1	0	46	2	0	146	618
5:30 PM	0	0	1	0	0	0	2	0	2	79	0	0	0	46	3	0	133	601
5:45 PM	2	0	2	0	1	0	0	0	2	83	0	1	0	56	3	0	150	591
6:00 PM	1	0	1	0	0	0	0	0	1	75	0	1	0	45	2	1	127	556
6:15 PM	0	0	0	0	1	0	1	0	4	52	0	1	0	36	0	0	95	505
6:30 PM	0	0	1	0	0	0	3	0	0	69	0	0	0	43	3	0	119	491
6:45 PM	0	0	0	0	0	0	0	0	2	39	0	0	0	25	0	0	66	407

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	12	0	16	0	4	0	0	0	12	472	4	4	0	260	4	0	788
Heavy Trucks	0	0	0		0	0	0		0	20	0		0	28	0		48
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

Report generated on 1/14/2021 10:31 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

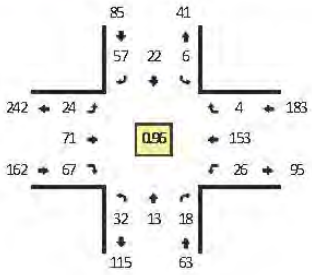
Type of peak hour being reported: Intersection Peak

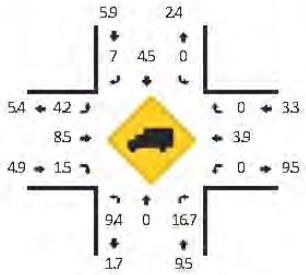
Method for determining peak hour: Total Entering Volume

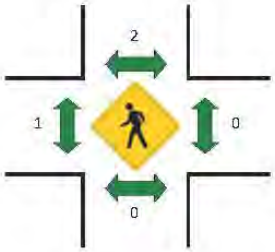
LOCATION: Odell Rd/Cedarbrook Ln -- Muirkirk Rd
CITY/STATE: Beltsville, MD

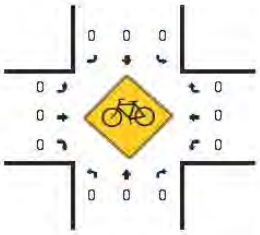
QC JOB #: 15313017
DATE: Tue, Jan 5 2021

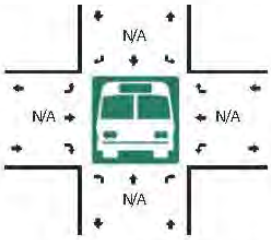
Peak-Hour: 7:45 AM -- 8:45 AM
Peak 15-Min: 7:45 AM -- 8:00 AM

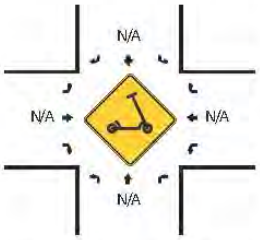












15-Min Count Period Beginning At	Odell Rd/Cedarbrook Ln (Northbound)				Odell Rd/Cedarbrook Ln (Southbound)				Muirkirk Rd (Eastbound)				Muirkirk Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
6:30 AM	3	2	7	0	1	4	10	0	3	12	13	0	9	37	0	0	101	
6:45 AM	7	2	4	0	0	4	18	0	2	17	12	0	3	54	0	0	123	
7:00 AM	7	3	2	0	0	2	10	0	1	18	9	0	6	36	0	0	94	
7:15 AM	11	3	5	0	0	1	8	0	4	14	12	0	7	44	1	0	110	428
7:30 AM	10	1	3	0	0	8	15	0	4	21	11	0	8	40	1	0	122	449
7:45 AM	7	2	4	0	3	8	16	0	5	20	17	0	6	40	1	0	129	455
8:00 AM	7	5	5	0	2	5	11	0	1	14	16	0	6	46	1	0	119	480
8:15 AM	9	5	4	0	1	4	13	0	6	20	17	0	8	30	1	0	118	488
8:30 AM	9	1	5	0	0	5	17	0	12	17	17	0	6	37	1	0	127	493
8:45 AM	7	0	5	0	0	10	12	0	9	15	13	0	7	36	1	0	115	479
9:00 AM	13	3	2	0	1	4	11	0	3	18	14	0	3	27	1	0	100	460
9:15 AM	6	5	4	0	0	5	5	0	6	15	4	0	7	24	3	0	84	426

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	28	8	16	0	12	32	64	0	20	80	68	0	24	160	4	0	516
Heavy Trucks	0	0	4		0	4	4		0	4	0		0	8	0		24
Buses																	
Pedestrians		0				4				4				0			8
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

Report generated on 1/14/2021 10:31 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

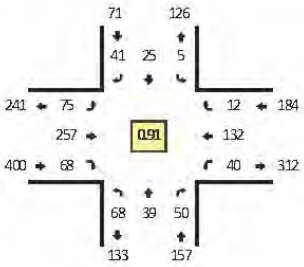
Type of peak hour being reported: Intersection Peak

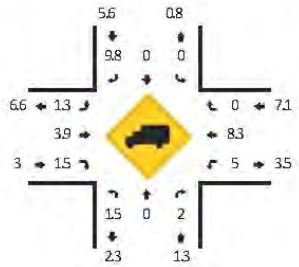
Method for determining peak hour: Total Entering Volume

LOCATION: Odell Rd/Cedarbrook Ln -- Muirkirk Rd
CITY/STATE: Beltsville, MD

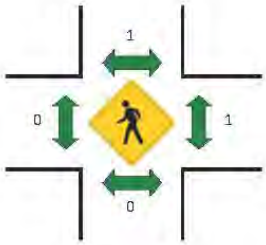
QC JOB #: 15313018
DATE: Tue, Jan 5 2021

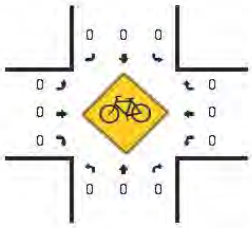
Peak-Hour: 3:30 PM -- 4:30 PM
Peak 15-Min: 4:15 PM -- 4:30 PM

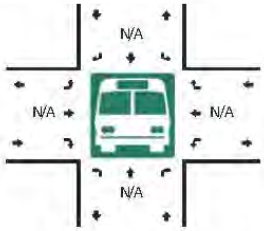


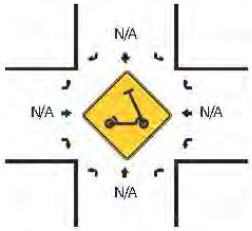


Quality Counts
DATA THAT DRIVES COMMUNITIES









15-Min Count Period Beginning At	Odell Rd/Cedarbrook Ln (Northbound)				Odell Rd/Cedarbrook Ln (Southbound)				Muirkirk Rd (Eastbound)				Muirkirk Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
3:00 PM	7	9	13	0	0	7	10	0	11	49	11	0	5	36	0	0	158	
3:15 PM	16	12	10	0	3	7	11	0	12	39	11	0	8	18	3	0	150	
3:30 PM	15	11	11	0	1	7	11	0	22	62	18	0	10	37	0	0	205	
3:45 PM	17	7	14	0	1	5	10	0	16	53	14	0	8	31	2	0	178	691
4:00 PM	18	7	13	0	2	3	11	0	16	70	17	0	8	36	5	0	206	739
4:15 PM	18	14	12	0	1	10	9	0	21	72	19	0	14	28	5	0	223	812
4:30 PM	6	8	10	0	1	10	8	0	19	69	14	0	6	29	2	0	182	789
4:45 PM	18	12	15	0	2	4	9	0	17	69	17	0	9	27	1	0	200	811
5:00 PM	10	8	8	0	6	6	12	0	19	65	11	1	8	34	4	0	192	797
5:15 PM	14	10	14	0	1	9	9	0	19	62	19	0	9	26	3	0	195	769
5:30 PM	13	12	9	0	4	9	14	0	20	54	13	0	12	21	1	0	182	769
5:45 PM	7	12	11	0	0	7	12	0	16	61	9	0	6	37	6	0	184	753
6:00 PM	10	10	10	0	2	8	11	0	16	50	13	0	6	33	4	0	173	734
6:15 PM	10	8	10	0	0	4	5	0	13	32	7	0	3	18	0	0	110	649
6:30 PM	18	11	7	0	0	8	5	0	13	39	12	0	3	24	3	0	143	610
6:45 PM	6	8	4	0	4	8	5	0	7	25	8	0	5	17	5	0	102	528

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	72	56	48	0	4	40	36	0	84	288	76	0	56	112	20	0	892
Heavy Trucks	0	0	0		0	0	4		0	20	4		4	0	0		32
Buses																	
Pedestrians		0				4				0				4			8
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

Report generated on 1/14/2021 10:31 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

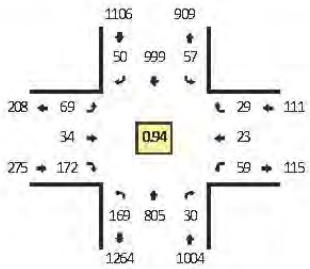
Type of peak hour being reported: Intersection Peak

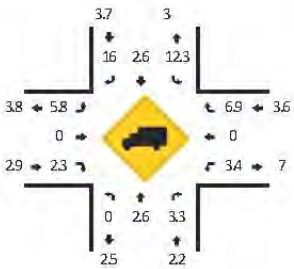
Method for determining peak hour: Total Entering Volume

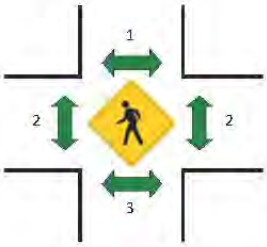
LOCATION: MD 197 -- Muirkirk Rd
CITY/STATE: Beltsville, MD

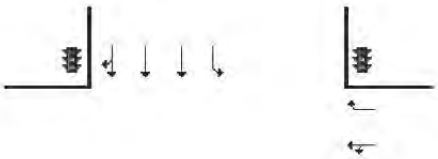
QC JOB #: 15313019
DATE: Tue, Jan 5 2021

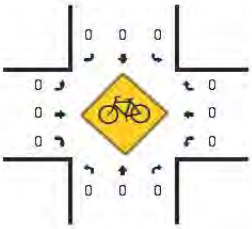
Peak-Hour: 7:15 AM -- 8:15 AM
Peak 15-Min: 7:45 AM -- 8:00 AM

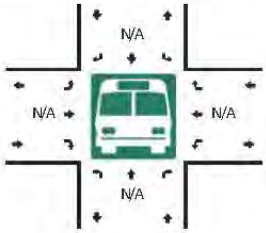


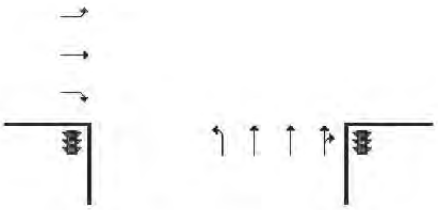


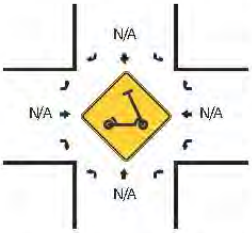












15-Min Count Period Beginning At	MD 197 (Northbound)				MD 197 (Southbound)				Muirkirk Rd (Eastbound)				Muirkirk Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
6:30 AM	33	145	5	3	7	179	7	1	11	3	38	0	4	4	4	0	444	
6:45 AM	39	173	4	12	11	187	15	0	10	6	36	0	5	3	4	0	505	
7:00 AM	27	141	3	7	8	182	11	1	9	4	35	0	9	2	0	0	439	
7:15 AM	39	196	3	6	10	252	9	1	17	12	41	0	13	5	6	0	610	1998
7:30 AM	23	168	9	6	16	267	16	3	17	6	55	0	18	4	8	0	616	2170
7:45 AM	43	255	8	13	13	237	10	0	19	9	36	0	10	6	7	0	666	2331
8:00 AM	30	186	10	9	12	243	15	2	16	7	40	0	18	8	8	0	604	2496
8:15 AM	32	205	8	11	14	226	18	1	20	5	22	0	18	1	14	0	595	2481
8:30 AM	21	220	9	6	15	228	12	0	24	9	37	0	13	8	9	0	611	2476
8:45 AM	31	212	5	8	17	180	15	1	22	7	29	0	22	10	6	0	565	2375
9:00 AM	20	185	4	7	21	231	14	1	17	8	26	0	14	10	17	0	575	2346
9:15 AM	23	186	11	10	23	172	13	1	14	9	31	0	18	2	12	0	525	2276

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	172	1020	32	52	52	948	40	0	76	36	144	0	40	24	28	0	2664
Heavy Trucks	0	32	0		4	28	8		4	0	0		8	0	4		88
Buses																	
Pedestrians		4				0				0				0			4
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

Report generated on 1/14/2021 10:31 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

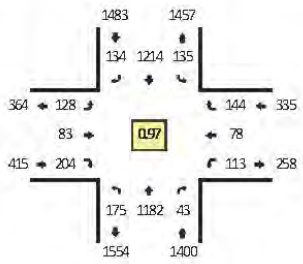
Type of peak hour being reported: Intersection Peak

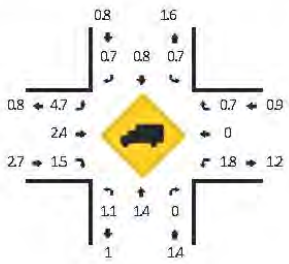
Method for determining peak hour: Total Entering Volume

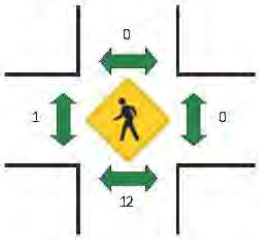
LOCATION: MD 197 -- Muirkirk Rd
CITY/STATE: Beltsville, MD

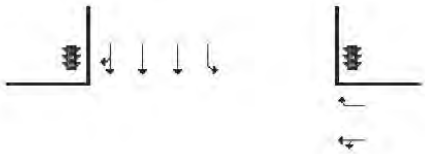
QC JOB #: 15313020
DATE: Tue, Jan 5 2021

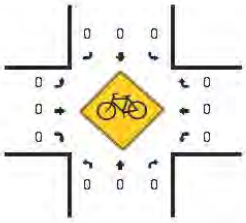
Peak-Hour: 4:15 PM -- 5:15 PM
Peak 15-Min: 4:15 PM -- 4:30 PM

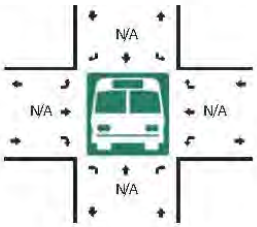


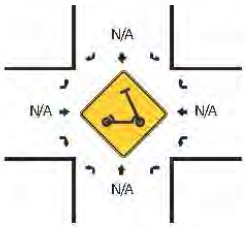












15-Min Count Period Beginning At	MD 197 (Northbound)				MD 197 (Southbound)				Muirkirk Rd (Eastbound)				Muirkirk Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
3:00 PM	38	240	18	5	28	242	21	2	27	8	54	0	25	10	40	0	758	
3:15 PM	24	254	8	8	38	272	38	1	26	19	29	0	36	16	43	0	812	
3:30 PM	35	299	12	4	44	255	41	4	39	10	53	0	16	15	43	0	870	
3:45 PM	32	289	11	9	34	230	31	3	38	19	60	0	27	14	40	0	837	3277
4:00 PM	51	237	9	7	34	280	31	0	34	22	66	0	21	15	41	0	848	3367
4:15 PM	42	295	13	4	42	310	31	2	40	19	62	0	28	13	39	0	940	3495
4:30 PM	26	300	9	7	35	271	36	0	26	16	46	0	33	20	36	0	861	3486
4:45 PM	45	291	13	9	26	318	32	1	29	28	51	0	24	15	34	0	916	3565
5:00 PM	39	296	8	3	29	315	35	0	33	20	45	0	28	30	35	0	916	3633
5:15 PM	38	259	15	12	39	310	35	2	37	21	50	0	30	20	31	0	899	3592
5:30 PM	40	270	7	15	38	294	48	2	32	22	43	0	32	20	34	0	897	3628
5:45 PM	54	231	13	5	25	239	40	1	29	11	41	0	40	22	22	0	773	3485
6:00 PM	35	284	9	6	21	227	36	0	23	13	35	0	31	17	33	0	770	3339
6:15 PM	47	244	9	11	24	237	41	0	26	8	35	0	32	15	22	0	751	3191
6:30 PM	34	243	9	13	21	203	37	1	17	5	33	0	24	17	29	0	686	2980
6:45 PM	44	206	11	5	29	189	27	2	23	14	33	0	25	14	19	0	641	2848

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	168	1180	52	16	168	1240	124	8	160	76	248	0	112	52	156	0	3760
Heavy Trucks	4	20	0		4	8	0		8	8	4		4	0	0		60
Buses																	
Pedestrians		4				0				0				0			4
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

Report generated on 1/14/2021 10:31 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

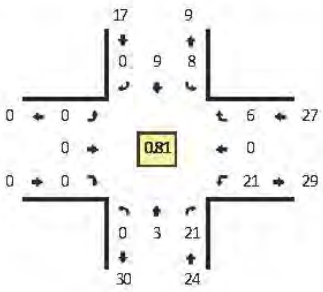
Type of peak hour being reported: Intersection Peak

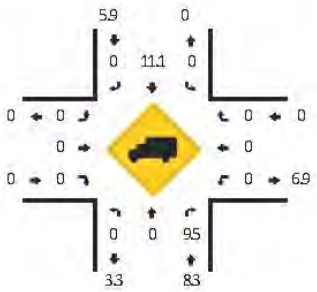
Method for determining peak hour: Total Entering Volume

LOCATION: Ellington Dr -- Odell Rd
CITY/STATE: Beltsville, MD

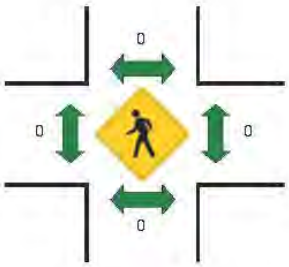
QC JOB #: 15313021
DATE: Tue, Jan 5 2021

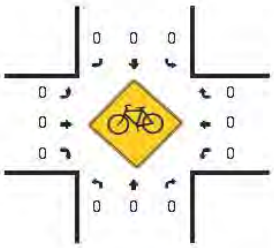
Peak-Hour: 7:15 AM -- 8:15 AM
Peak 15-Min: 7:45 AM -- 8:00 AM

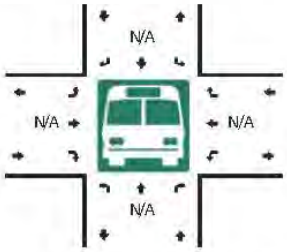


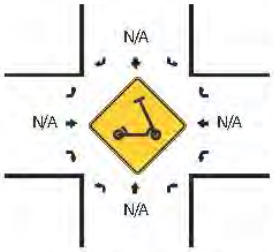


Quality Counts
DATA THAT DRIVES COMMUNITIES









15-Min Count Period Beginning At	Ellington Dr (Northbound)				Ellington Dr (Southbound)				Odell Rd (Eastbound)				Odell Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
6:30 AM	0	0	3	0	3	0	0	0	0	0	0	0	2	0	1	0	9	
6:45 AM	0	0	3	0	5	4	0	0	0	0	0	0	3	0	0	0	15	
7:00 AM	0	1	5	0	2	0	0	0	0	0	0	0	4	0	1	0	13	
7:15 AM	0	2	6	0	3	1	0	0	0	0	0	0	3	0	3	0	18	55
7:30 AM	0	0	2	0	1	3	0	0	0	0	0	0	8	0	1	0	15	61
7:45 AM	0	1	9	0	2	2	0	0	0	0	0	0	6	0	1	0	21	67
8:00 AM	0	0	4	0	2	3	0	0	0	0	0	0	4	0	1	0	14	68
8:15 AM	0	2	5	0	1	0	0	0	0	0	0	0	4	0	1	0	13	63
8:30 AM	0	1	6	0	2	0	0	0	0	0	0	0	7	0	2	0	18	66
8:45 AM	0	0	6	0	2	0	0	0	0	0	0	0	10	0	0	0	18	63
9:00 AM	0	1	7	0	0	3	0	0	0	0	0	0	5	0	0	0	16	65
9:15 AM	0	0	0	0	3	1	0	0	0	0	0	0	9	0	1	0	14	66

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	4	36	0	8	8	0	0	0	0	0	0	24	0	4	0	84
Heavy Trucks	0	0	4		0	0	0		0	0	0		0	0	0		4
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

Report generated on 1/14/2021 10:31 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

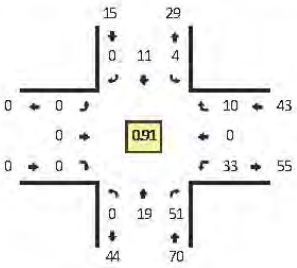
Type of peak hour being reported: Intersection Peak

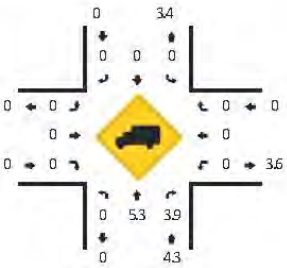
Method for determining peak hour: Total Entering Volume

LOCATION: Ellington Dr -- Odell Rd
CITY/STATE: Beltsville, MD

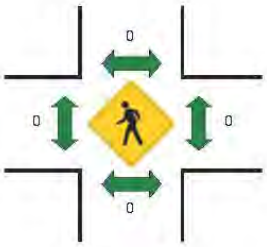
QC JOB #: 15313022
DATE: Tue, Jan 5 2021

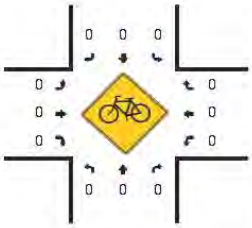
Peak-Hour: 5:15 PM -- 6:15 PM
Peak 15-Min: 5:30 PM -- 5:45 PM

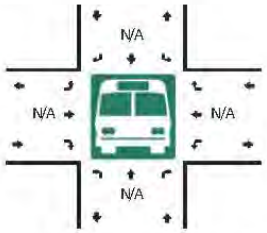


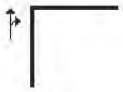


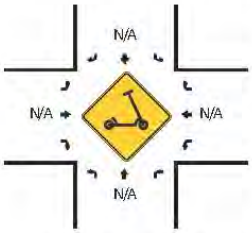
Quality Counts
DATA THAT DRIVES COMMUNITIES











15-Min Count Period Beginning At	Ellington Dr (Northbound)				Ellington Dr (Southbound)				Odell Rd (Eastbound)				Odell Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
3:00 PM	0	3	15	0	1	4	0	0	0	0	0	0	0	0	6	0	29	
3:15 PM	0	6	10	0	1	2	0	0	0	0	0	0	10	0	2	0	31	
3:30 PM	0	2	14	0	2	2	0	0	0	0	0	0	7	0	2	0	29	
3:45 PM	0	3	7	0	1	1	0	0	0	0	0	0	5	0	4	0	21	110
4:00 PM	0	5	13	0	1	2	0	0	0	0	0	0	8	0	3	0	32	113
4:15 PM	0	2	15	0	1	1	0	0	0	0	0	0	10	0	1	0	30	112
4:30 PM	0	5	9	0	1	2	0	0	0	0	0	0	8	0	2	0	27	110
4:45 PM	0	3	13	0	2	3	0	0	0	0	0	0	7	0	0	0	28	117
5:00 PM	0	5	11	0	1	4	0	0	0	0	0	0	5	0	1	0	27	112
5:15 PM	0	4	12	0	0	4	0	0	0	0	0	0	9	0	3	0	32	114
5:30 PM	0	5	12	0	3	2	0	0	0	0	0	0	11	0	2	0	35	122
5:45 PM	0	5	14	0	0	2	0	0	0	0	0	0	6	0	4	0	31	125
6:00 PM	0	5	13	0	1	3	0	0	0	0	0	0	7	0	1	0	30	128
6:15 PM	0	7	14	0	2	2	0	0	0	0	0	0	4	0	0	0	29	125
6:30 PM	0	4	7	0	2	3	0	0	0	0	0	0	7	0	0	0	23	113
6:45 PM	0	3	2	0	1	1	0	0	0	0	0	0	6	0	1	0	14	96

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	20	48	0	12	8	0	0	0	0	0	0	44	0	8	0	140
Heavy Trucks	0	0	4		0	0	0		0	0	0		0	0	0		4
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

Report generated on 1/14/2021 10:31 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

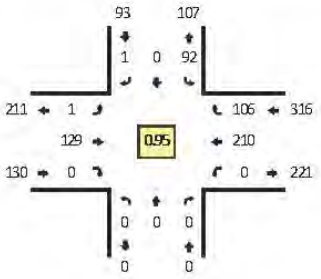
Type of peak hour being reported: Intersection Peak

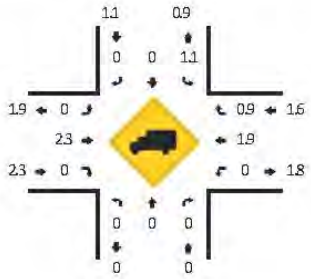
Method for determining peak hour: Total Entering Volume

LOCATION: Springfield Rd -- Powder Mill Rd
CITY/STATE: Beltsville , MD

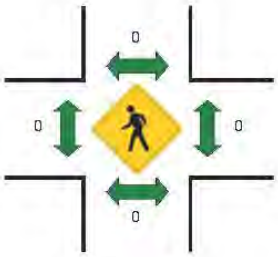
QC JOB #: 15313023
DATE: Tue, Jan 5 2021

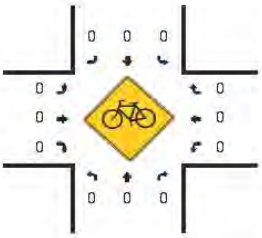
Peak-Hour: 7:15 AM -- 8:15 AM
Peak 15-Min: 7:15 AM -- 7:30 AM

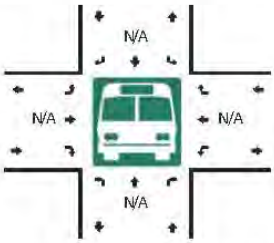


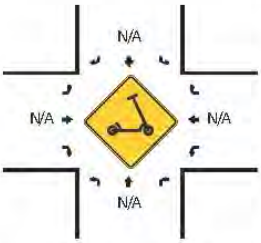


Quality Counts
DATA THAT DRIVES COMMUNITIES









15-Min Count Period Beginning At	Springfield Rd (Northbound)				Springfield Rd (Southbound)				Powder Mill Rd (Eastbound)				Powder Mill Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
6:30 AM	0	0	0	0	18	0	0	0	0	16	0	0	0	36	22	0	92	
6:45 AM	0	0	0	0	16	0	3	0	0	16	0	0	0	50	35	0	120	
7:00 AM	0	0	0	0	23	0	0	0	0	20	0	0	0	42	25	0	110	
7:15 AM	0	0	0	0	19	0	0	0	0	31	0	0	0	63	29	0	142	464
7:30 AM	0	0	0	0	30	0	1	0	1	39	0	0	0	26	19	0	116	488
7:45 AM	0	0	0	0	23	0	0	0	0	27	0	0	0	63	27	0	140	508
8:00 AM	0	0	0	0	20	0	0	0	0	32	0	0	0	58	31	0	141	539
8:15 AM	0	0	0	0	30	0	0	0	1	32	0	0	0	43	28	0	134	531
8:30 AM	0	0	0	0	19	0	0	0	1	26	0	0	0	47	23	0	116	531
8:45 AM	0	0	0	0	18	0	1	0	0	27	0	0	0	40	31	1	118	509
9:00 AM	0	0	0	0	19	0	1	0	0	19	0	0	0	45	15	0	99	467
9:15 AM	0	0	0	0	9	0	0	0	0	21	0	0	0	30	14	0	74	407

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	0	0	0	76	0	0	0	0	124	0	0	0	252	116	0	568
Heavy Trucks	0	0	0		0	0	0		0	8	0		0	0	0		8
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

Report generated on 1/14/2021 10:31 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

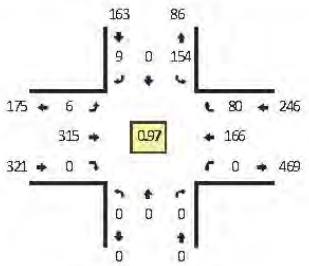
Type of peak hour being reported: Intersection Peak

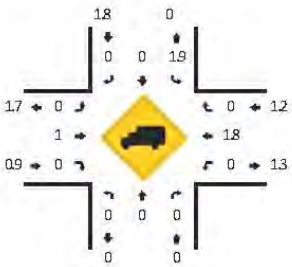
Method for determining peak hour: Total Entering Volume

LOCATION: Springfield Rd -- Powder Mill Rd
CITY/STATE: Beltsville , MD

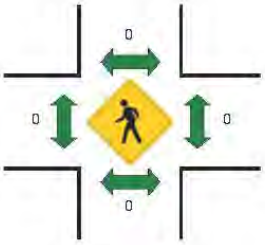
QC JOB #: 15313024
DATE: Tue, Jan 5 2021

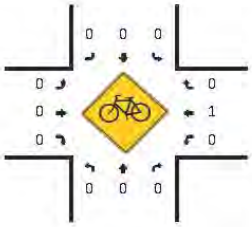
Peak-Hour: 4:00 PM -- 5:00 PM
Peak 15-Min: 4:00 PM -- 4:15 PM

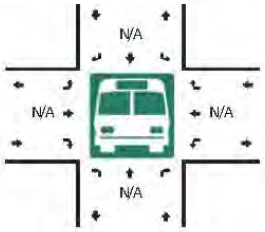


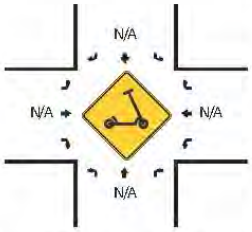


Quality Counts
DATA THAT DRIVES COMMUNITIES









15-Min Count Period Beginning At	Springfield Rd (Northbound)				Springfield Rd (Southbound)				Powder Mill Rd (Eastbound)				Powder Mill Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
3:00 PM	0	0	0	0	34	0	0	0	1	68	0	0	0	37	11	0	151	
3:15 PM	0	0	0	0	32	0	1	0	3	63	0	0	0	41	20	0	160	
3:30 PM	0	0	0	0	48	0	1	0	3	62	0	0	0	36	27	0	177	
3:45 PM	0	0	0	0	34	0	0	0	2	75	0	0	0	37	16	0	164	652
4:00 PM	0	0	0	0	42	0	1	0	2	87	0	0	0	35	22	0	189	690
4:15 PM	0	0	0	0	40	0	1	0	1	64	0	0	0	53	26	0	185	715
4:30 PM	0	0	0	0	45	0	4	0	2	84	0	0	0	34	17	0	186	724
4:45 PM	0	0	0	0	27	0	3	0	1	80	0	0	0	44	15	0	170	730
5:00 PM	0	0	0	0	32	0	0	0	0	77	0	0	0	25	18	0	152	693
5:15 PM	0	0	0	0	35	0	0	0	5	87	0	0	0	23	18	0	168	676
5:30 PM	0	0	0	0	35	0	1	0	2	60	0	0	0	33	16	0	147	637
5:45 PM	0	0	0	0	25	0	0	0	2	66	0	0	0	31	14	0	138	605
6:00 PM	0	0	0	0	25	0	0	0	2	70	0	0	0	23	13	0	133	586
6:15 PM	0	0	0	0	18	0	0	0	2	37	0	0	0	17	13	0	87	505
6:30 PM	0	0	0	0	40	0	0	0	4	37	0	0	0	31	14	0	126	484
6:45 PM	0	0	0	0	24	0	0	0	1	35	0	0	0	24	18	0	102	448

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	0	0	0	168	0	4	0	8	348	0	0	0	140	88	0	756
Heavy Trucks	0	0	0		0	0	0		0	8	0		0	4	0		12
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

Report generated on 1/14/2021 10:31 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

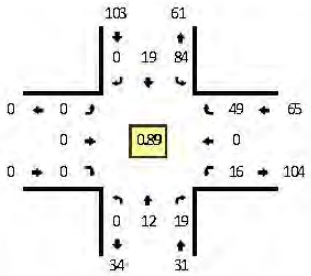
Type of peak hour being reported: Intersection Peak

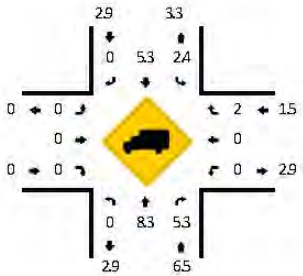
Method for determining peak hour: Total Entering Volume

LOCATION: Odell Rd -- Springfield Rd
CITY/STATE: Beltsville , MD

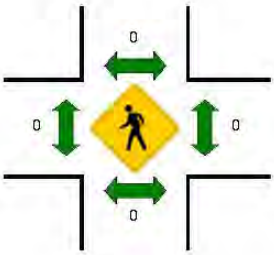
QC JOB #: 15313025
DATE: Tue, Jan 5 2021

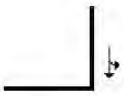
Peak-Hour: 7:30 AM -- 8:30 AM
Peak 15-Min: 7:30 AM -- 7:45 AM

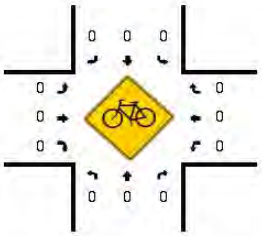


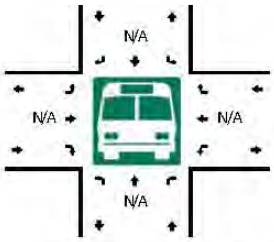


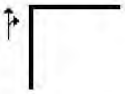
Quality Counts
DATA THAT DRIVES COMMUNITIES

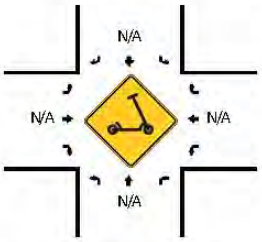












15-Min Count Period Beginning At	Odell Rd (Northbound)				Odell Rd (Southbound)				Springfield Rd (Eastbound)				Springfield Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
6:30 AM	0	1	3	0	20	2	0	0	0	0	0	0	3	0	11	1	41	
6:45 AM	0	1	4	0	15	2	0	0	0	0	0	0	6	0	9	0	37	
7:00 AM	0	2	8	0	11	3	0	0	0	0	0	0	6	0	10	0	40	
7:15 AM	0	4	4	0	15	4	0	0	0	0	0	0	3	0	14	0	44	162
7:30 AM	0	3	9	0	18	6	0	0	0	0	0	0	6	0	14	0	56	177
7:45 AM	0	5	4	0	20	6	0	0	0	0	0	0	5	0	10	1	51	191
8:00 AM	0	1	3	0	24	2	0	0	0	0	0	0	2	0	14	0	46	197
8:15 AM	0	3	3	0	22	5	0	0	0	0	0	0	2	0	11	0	46	199
8:30 AM	0	3	5	0	25	1	0	0	0	0	0	0	7	0	11	0	52	195
8:45 AM	0	3	2	0	21	6	0	0	0	0	0	0	6	0	12	0	50	194
9:00 AM	0	4	3	0	17	5	0	0	0	0	0	0	3	0	13	0	45	193
9:15 AM	0	1	3	0	9	7	0	0	0	0	0	0	3	0	11	1	35	182

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	12	36	0	72	24	0	0	0	0	0	0	24	0	56	0	224
Heavy Trucks	0	0	4		0	4	0		0	0	0		0	0	0		8
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

Report generated on 1/14/2021 10:31 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

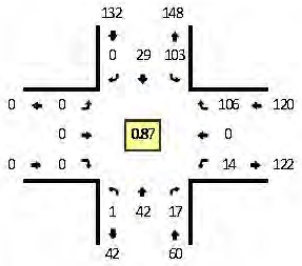
Type of peak hour being reported: Intersection Peak

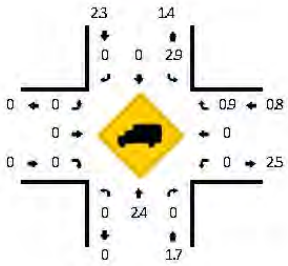
Method for determining peak hour: Total Entering Volume

LOCATION: Odell Rd -- Springfield Rd
CITY/STATE: Beltsville , MD

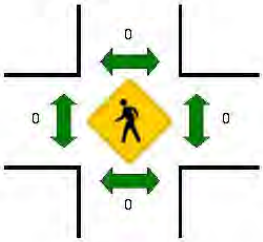
QC JOB #: 15313026
DATE: Tue, Jan 5 2021

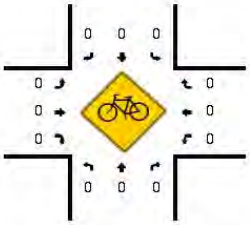
Peak-Hour: 3:30 PM -- 4:30 PM
Peak 15-Min: 4:15 PM -- 4:30 PM

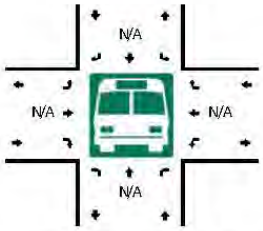


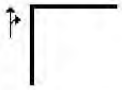


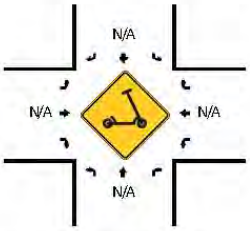
Quality Counts
DATA THAT DRIVES COMMUNITIES











15-Min Count Period Beginning At	Odell Rd (Northbound)				Odell Rd (Southbound)				Springfield Rd (Eastbound)				Springfield Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
3:00 PM	0	11	8	0	20	1	0	0	0	0	0	0	2	0	18	0	60	
3:15 PM	0	8	10	0	21	5	0	0	0	0	0	0	3	0	26	0	73	
3:30 PM	0	10	9	0	28	8	0	0	0	0	0	0	4	0	25	0	84	
3:45 PM	0	9	0	1	20	4	0	0	0	0	0	0	5	0	21	2	62	279
4:00 PM	0	9	7	0	21	8	0	0	0	0	0	0	0	0	31	0	76	295
4:15 PM	0	14	1	0	34	9	0	0	0	0	0	0	3	0	29	0	90	312
4:30 PM	0	6	6	0	24	7	0	0	0	0	0	0	3	0	19	0	65	293
4:45 PM	0	11	6	0	28	3	0	0	0	0	0	0	3	0	27	0	78	309
5:00 PM	0	4	10	0	20	5	0	0	0	0	0	0	1	0	21	0	61	294
5:15 PM	0	10	6	0	30	7	0	0	0	0	0	0	3	0	27	0	83	287
5:30 PM	0	11	6	0	24	10	0	0	0	0	0	0	4	0	19	0	74	296
5:45 PM	0	10	2	0	19	3	0	0	0	0	0	0	5	0	20	0	59	277
6:00 PM	0	9	7	0	19	8	0	0	0	0	0	0	0	0	18	0	61	277
6:15 PM	0	13	4	0	9	4	0	0	0	0	0	0	1	0	18	0	49	243
6:30 PM	0	6	1	0	18	3	0	0	0	0	0	0	3	0	26	0	57	226
6:45 PM	0	4	2	0	13	8	0	0	0	0	0	0	1	0	14	0	42	209

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	56	4	0	136	36	0	0	0	0	0	0	12	0	116	0	360
Heavy Trucks	0	0	0		8	0	0		0	0	0		0	0	0		8
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

Report generated on 1/14/2021 10:31 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Appendix C: Synchro Output
(Available upon request.)

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Appendix D: Transportation Management Plan

(Please see the Final Environmental Impact Statement Appendix F)

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