
TRAFFIC IMPACT ANALYSIS

MOUNTAIN ROAD TECHNOLOGY PARK

HANOVER COUNTY, VIRGINIA

NOVEMBER 2025 (VERSION 2)

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Executive Summary

The Traffic Impact Analysis (TIA) documented in this report evaluates the traffic impacts of a data center generally located in the northeast quadrant of the intersection of Mountain Road (US-33) and Hunton Park Boulevard in Hanover County, Virginia.

The project proposes to rezone the 434-acre property to permit a 900-megawatt (MW) data center. Access to the proposed site will be provided via one full-access driveway along US-33 at an existing median break and two (2) emergency/utility access driveways; one (right-in/right-out driveway) along US-33 and one (full-access driveway) along Winns Church Road. The emergency/utility access along US-33 will serve as a temporary driveway during construction operations.

Traffic operations were analyzed at the intersections identified below during the AM and PM peak hours using *Synchro 11TM* software for the Existing 2025, No-Build 2034, and Build 2034 conditions. However, at the request of VDOT staff, traffic operations were also analyzed during the construction AM (6:00 – 7:00 AM) and construction PM (3:00 – 4:00 PM) peak hours and include Existing 2025 (Construction Peak), No-Build 2034 (Construction Peak), and Build 2034 (Construction Peak) conditions. The following intersections were identified as the study area intersections:

1. US-33 (Mountain Road) & Hunton Park Boulevard
2. US-33 (Mountain Road) & Gladfelter Road
3. US-33 (Mountain Road) & Winns Church Road
4. Winns Church Road & Greenwood Road

The results of the operational analyses indicate that under the No-Build conditions (both construction peak and commuter peak hours), all signalized intersections and all unsignalized approaches are projected to operate with an overall delay equivalent to LOS D or better, with the exception of the intersection of US-33 and Winns Church Road, which operates at LOS E during the commuter AM and PM peak hours.

The results of the Build 2034 (Construction Peak) traffic operational analysis indicate that all signalized intersections and all unsignalized approaches are projected to operate with delays equivalent to LOS D or better, with the exception of the westbound approach at the intersection of US-33 and Project Driveway #1 during the PM peak hour, which is projected to operate with delays equivalent to LOS F. Note that these results are typical where a low volume, stop-controlled, road intersects a high-volume, free-flow road. On occasions where vehicles are unable to exit the site, or excessive queues are observed on-site, it is expected that the contractor will deploy flaggers to maintain the safety and operations of the intersection.

The results of the Build 2034 traffic operational analysis indicate that all signalized intersections and all unsignalized approaches are projected to operate with an overall delay equivalent to LOS D or better, with the exception of the westbound approach at the intersection of US-33 and Winns Church Road, which operates at LOS E during the commuter AM and PM peak hour. Note that the approach was projected to operate with delays equivalent to LOS E under No-Build conditions, prior to the completion of the project.

Additionally, Highway Capacity Software (HCS7) was used to evaluate the merge and diverge operations of the US-33 and Interstate 295 (I-295) interchange ramps that are anticipated to be used by the proposed development traffic. The results of the highway capacity analysis indicate that under all analysis scenarios, the I-295 on/off-ramps are projected to operate with densities equivalent to LOS C or better under all analysis conditions.

Turn lane warrant analyses were conducted for the 2034 Build (Construction Peak) and 2034 Build conditions at the proposed Project Driveway #1 and Project Driveway #2 using the turn lane warrant standards outlined in Appendix F of the VDOT Road Design Manual.

A northbound right-turn lane with 200 feet of taper and 200 feet of storage is warranted at Project Driveway #1. Note that the project is committed to providing a dedicated right-turn lane with 200 feet of taper and 100 feet of storage, consistent with the adjacent left and right-turn lanes along Mountain Road. The proposed taper at Project Driveway #1 does not meet turn lane design standards due to the proximity of the Chickahominy River bridge crossing that is located approximately 400 feet south of the existing median break. An Access Management Exception (AME) form will be submitted for the proposed turn lane length at Project Driveway #1. Additionally, A northbound right-turn lane with 200 feet of taper and 200 feet of storage is warranted and proposed at Project Driveway #2.

1 Introduction

1.1 Purpose

Kimley-Horn has performed a Traffic Impact Analysis (TIA) to evaluate the traffic impacts of a proposed data center generally located in the northeast quadrant of the intersection of US-33 (Mountain Road) and Hunton Park Boulevard in Hanover County, Virginia. The purpose of this study is to determine and evaluate the potential future impact of the proposed development on the external roadway network. A conceptual site plan is included in **Appendix A**.

1.2 Methodology

In preparation of the TIA, Kimley-Horn coordinated with Hanover County and VDOT staff to receive concurrence on the scope of the study, the limits of the study area, and the proposed methodology. The approved pre-scope of work form is contained in **Appendix B**. As determined through the coordination, the study area intersections included the following:

1. US-33 (Mountain Road) & Hunton Park Boulevard
2. US-33 (Mountain Road) & Gladfelter Road
3. US-33 (Mountain Road) & Winns Church Road
4. Winns Church Road & Greenwood Road

Traffic operations were analyzed at the intersections identified during the AM and PM peak hours using *Synchro 11TM* software for the Existing 2025, No-Build 2034, and Build 2034 conditions. However, at the request of VDOT staff, traffic operations were also analyzed during the construction AM (6:00 – 7:00 AM) and construction PM (3:00 – 4:00 PM) peak hours and include Existing 2025 (Construction Peak), No-Build 2034 (Construction Peak), and Build 2034 (Construction Peak) conditions.

Existing conditions represent the roadway network geometry and traffic volumes at the time of the study. No-Build conditions represent the future roadway network prior to the completion of the proposed development with the addition of background traffic growth. Build conditions represent the future roadway network with the addition of background traffic growth, proposed roadway improvements, and traffic generated by the project (construction or operations).

Highway Capacity Software (HCS7), Freeway Facilities, module was used to evaluate the US-33 and I-295 interchange mainline merge and diverge operations for the on/off ramps identified to be used by the proposed development traffic. The following I-295 on/off ramps were analyzed:

- I-295 eastbound to US-33 northbound
- US-33 southbound to I-295 eastbound
- I-295 westbound to US-33 northbound
- US-33 southbound to I-295 westbound

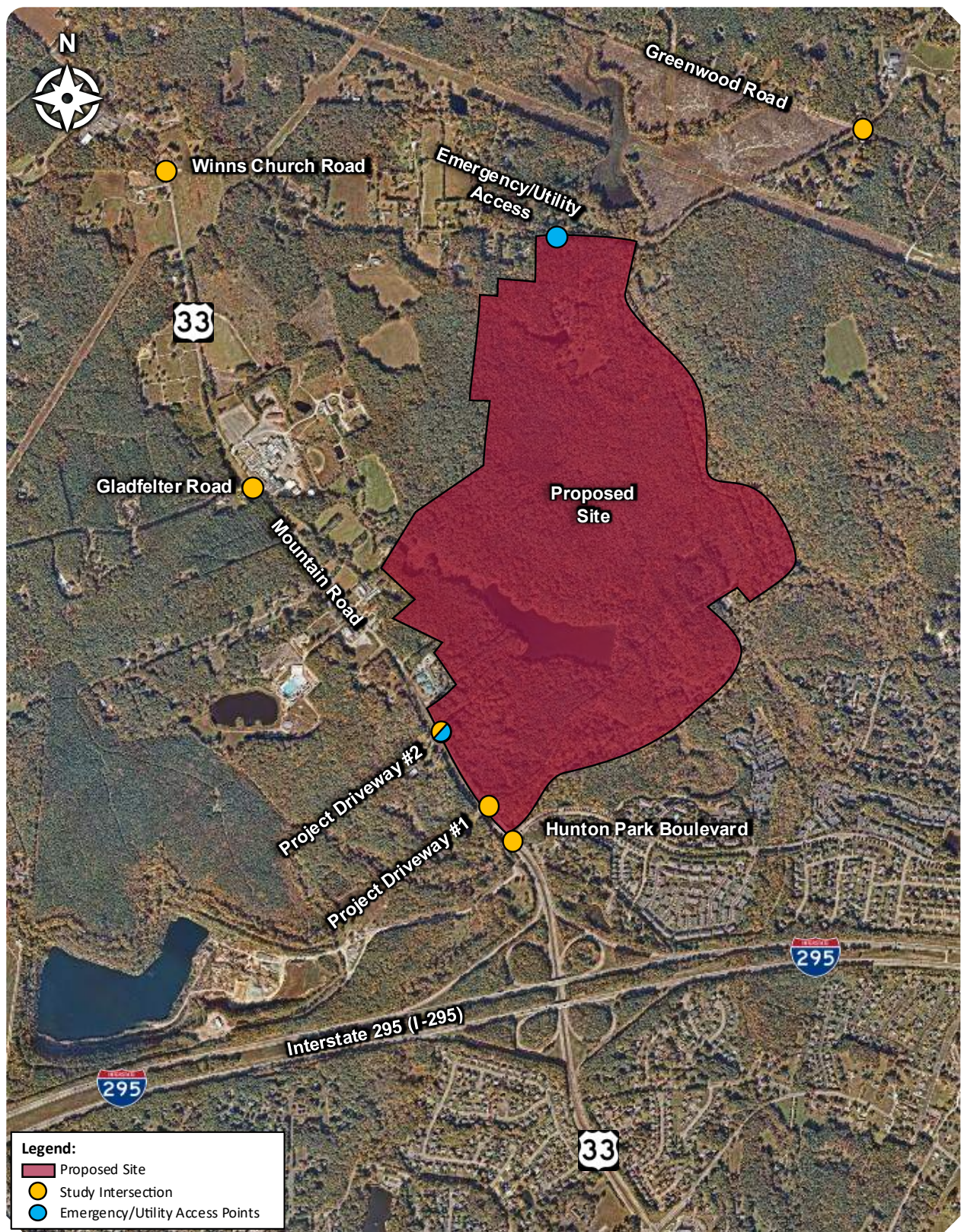
1.3 Project Area

The project area is generally located in the northeast quadrant of the intersection US-33 (Mountain Road) and Hunton Park Boulevard in Hanover County, Virginia. The project area for the proposed development is shown in **Figure 1**.

1.4 Development Information

The site proposed for development is currently vacant. The proposed development consists of data center buildings and support structures, with access to be provided via one full-access driveway along US-33 at an existing median break and two (2) emergency/utility access driveways; one (right-in/right-out driveway) along US-33 and one (full-access driveway) along Winns Church Road. The emergency/utility access along US-33 will serve as a temporary driveway during construction operations.

FIGURE 1: STUDY AREA



2 Traffic Operational Analysis

2.1 Methodology

The traffic operational analysis performed for this study using *Synchro 11TM* was conducted in accordance with VDOT's Traffic Operations Safety Analysis Manual (TOSAM), version 2.0 for deterministic intersection capacity analyses. Existing signal timings were provided by VDOT and were input into *Synchro 11TM*. The interchange on/off-ramp operational analysis performed for this study using Highway Capacity Software (HCS7), Freeway Facilities, module was in accordance with VDOT's TOSAM for deterministic basic freeway, merging and diverging, and weaving segment analyses.

The evaluation of traffic operations within the study area was comprised of an intersection capacity level of service (LOS) analysis during the AM and PM peak hours, a 95th percentile queueing analysis to evaluate the adequacy of existing turn lanes and the potential need for turn lane improvements, and an analysis of the US-33 and I-295 interchange mainline merge and diverge operations to evaluate the density of the interchange ramps.

Capacity analyses were conducted using methodologies contained in the Highway Capacity Manual (HCM) reported from *Synchro 11TM*. Queue analyses were conducted using the 95th percentile queues from *Synchro 11TM*. Interchange merge, diverge, and weaving operational analysis was conducted using methodologies contained in the Highway Capacity Manual (HCM) reported from HCS7.

As part of the traffic operational analysis, the projected No-Build conditions served as the baseline for evaluating intersection delays and identifying mitigation measures under the Build conditions.

Intersection capacity defines the volume of traffic that can be accommodated by a roadway at a specified LOS. Capacity is affected by various geometric factors including roadway type (e.g., divided or undivided), number of lanes, lane widths, and grades. LOS, which is a measure of the degree of congestion, ranges from LOS A (free flowing) to LOS F (a congested, forced flow condition). Delay, measured in seconds per vehicle, and the associated LOS thresholds for signalized and unsignalized intersections based on HCM methodologies are presented in **Table 1**. Density, measured in passenger cars per lane per mile, and the associated LOS thresholds for basic, merge, diverge, and weaving segments are shown in **Appendix E**.

Table 1: Intersection Level of Service (LOS) Analysis Criteria

Level of Service (LOS)	Average Control Delay per Vehicle (sec/veh)		Description of Traffic Conditions
	Signalized	Unsignalized	
A	≤ 10	≤ 10	No delays at intersections with continuous traffic flow. Uncongested operations; high frequency of long gaps available for all left and right-turning traffic; no observable queues.
B	> 10 and ≤ 20	> 10 and ≤ 15	
C	> 20 and ≤ 35	> 15 and ≤ 25	Moderate delays at intersections with satisfactory traffic flow. Light congestion; infrequent backups on critical approaches.
D	> 35 and ≤ 55	> 25 and ≤ 35	Increased probability of delays along every approach. Significant congestion on critical approaches, but intersection functional. No long-standing lines formed.
E	> 55 and ≤ 80	> 35 and ≤ 50	Heavy traffic flow conditions. Heavy delays probable. No available gaps for cross-street traffic or main street turning traffic. Limit of stable flow.
F	> 80	> 50	Unstable traffic flow. Heavy congestion. Traffic moves in forced flow conditions. Average delays greater than one minute highly probable. Total breakdown.

2.2 Key Assumptions

The following assumptions were made as part of the traffic operational analysis for all scenarios:

- For the No-Build and Build conditions, all signalized intersections used the higher of the calculated peak hour factor or 0.92 in accordance with TOSAM. All existing peak hour factors were calculated per TOSAM.
- A posted speed limit of 25 MPH was asserted for roads without a posted speed limit.

3 Data Collection

3.1 Existing Roadway Characteristics

Roadway characteristics including geometry and posted speed limits for roadway facilities adjacent to the proposed development are summarized in **Table 2**.

Table 2: Existing Roadway Characteristics

Road	Lanes	Posted Speed (mph)	Functional Classification ⁽¹⁾
US-33 (North of Overhill Lake Lane)	2 Lanes Undivided	55	Minor Arterial
US-33 (South of Overhill Lake Lane)	4 Lanes Divided	55	Minor Arterial
Hunton Park Boulevard	2 Lanes Divided	35	Unclassified
Gladfelter Road	2 Lanes Undivided	25	Unclassified
Winns Church Road	2 Lanes Undivided	45	Minor Collector
Greenwood Road	2 Lanes Undivided	45	Major Collector

⁽¹⁾ Based on the VDOT Functional Classification Map

3.2 Existing Traffic Volumes

Turning movement counts (TMCs) for the study intersections were collected on May 15, 2025, when school was in session, during the AM peak period (6:00 AM to 10:00 AM) and PM peak period (3:00 PM to 7:00 PM) at the following intersections:

1. US-33 (Mountain Road) & Hunton Park Boulevard
2. US-33 (Mountain Road) & Gladfelter Road
3. US-33 (Mountain Road) & Winns Church Road
4. Winns Church Road & Greenwood Road

Kimley-Horn coordinated with Henrico County staff to use the traffic data collected for the ongoing *I-295 at Woodman Road Interchange Access Report* for the US-33 and I-295 interchange ramps and mainline traffic volumes. The provided 48-hour ramp and mainline counts were collected on September 13, 2023, and January 24, 2024, at the US-33 and I-295 interchange. Signal timings and traffic count data are included in **Appendix C**.

4 Construction Peak – Traffic Operational Analysis

The purpose of the temporary construction traffic operational analysis was to evaluate the impacts of the traffic generated by peak construction operations prior to the completion of the project.

4.1 Peak Hour Determination

The construction peak hours were determined based on data provided by the applicant. Construction will consist of one shift that is staggered to occur outside of the typical AM and PM commuter peak hours, with construction employees arriving on-site between 4:00–7:00 AM and departing between 2:00–5:00 PM.

The hourly distribution of construction employees arriving/departing the site was provided by the applicant and used to determine the morning and evening construction traffic peak hours. The anticipated hourly arrival and departure distributions are provided in **Table 3**. The AM construction peak hour was assumed to be from 6:00–7:00 AM and the PM construction peak hour was assumed to be from 3:00–4:00 PM. Existing (Construction Peak) AM and PM peak hour traffic turning volumes are summarized in **Figure 2**.

Table 3: Anticipated Hourly Construction Traffic Distribution

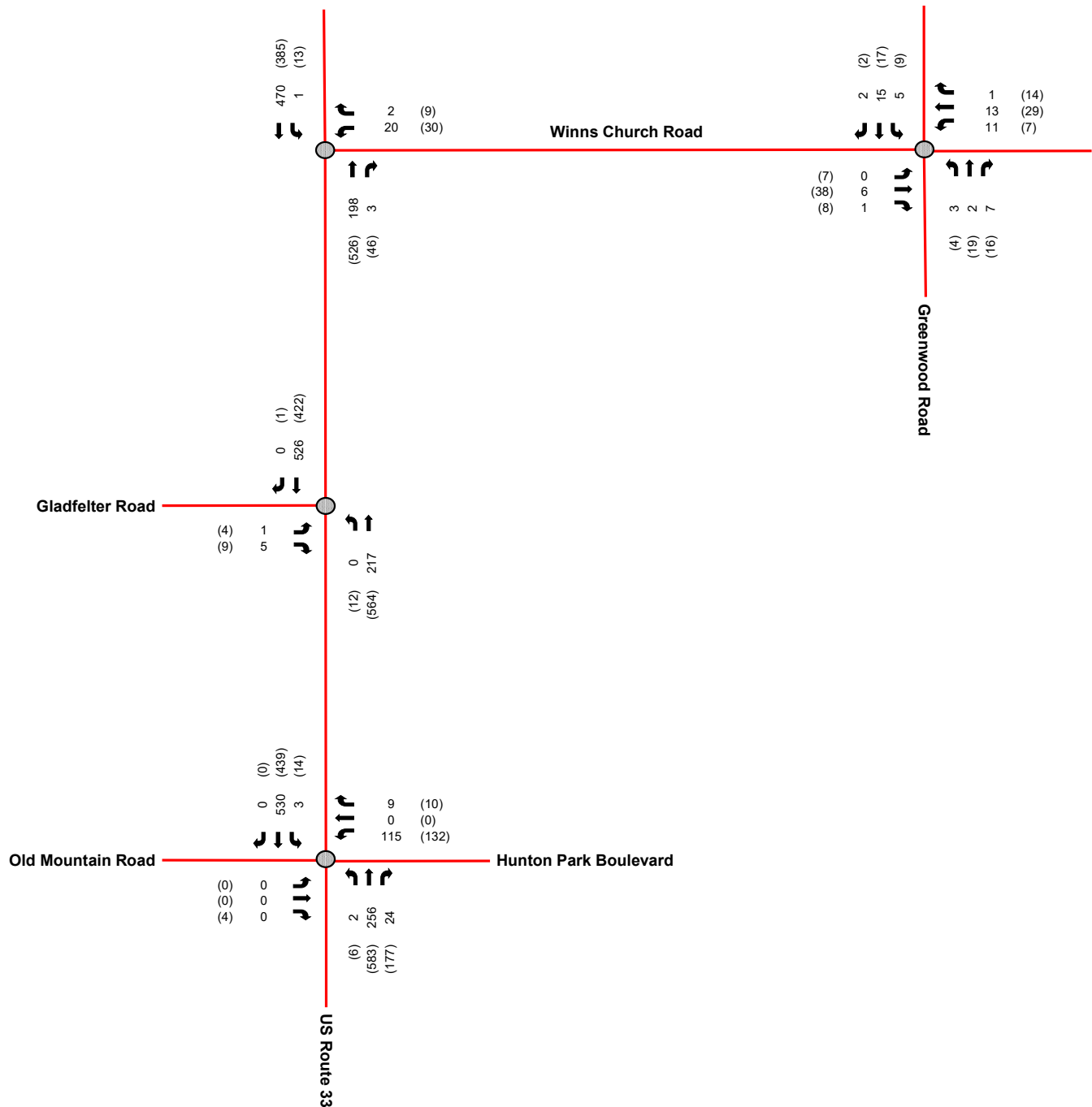
Start Time	Percent Arriving/Departing
AM Peak Period	
4:00 AM	10%
5:00 AM	30%
6:00 AM	50%
7:00 AM	10%
PM Peak Period	
2:00 PM	10%
3:00 PM	50%
4:00 PM	30%
5:00 PM	10%



NOT TO SCALE

Legend

- Study Roadway
- Study Intersection
- XX AM Peak Hour Traffic
- (XX) PM Peak Hour Traffic



4.2 Existing Conditions Analysis Results

Existing Conditions Intersection Capacity Analysis

During the construction peak hours, all signalized intersections and all unsignalized approaches operate with overall delays equivalent to LOS C or better, during the AM and PM peak hour.

Control delay and LOS results are summarized in **Table 5** following the analysis sections. The intersection capacity analysis results are included in **Appendix D**.

Existing Conditions 95th Percentile Queuing Analysis

The existing 95th percentile vehicle queue lengths during the construction peak hour were calculated by movement for each study intersection using Synchro 11TM. All queue lengths are expected to be accommodated within existing storage lanes during the AM and PM peak hour.

The queue results are summarized in **Table 6** following the analysis sections. The queueing analysis results are included in **Appendix D**.

4.3 Projected No-Build Conditions

The projected No-Build conditions represent the future roadway network and background traffic growth in the study area. Projected No-Build conditions were analyzed in the year 2034. No future developments that have been approved but not yet built were identified or included in the analyses conducted in this traffic impact analysis.

Traffic Growth Rate

A linear growth rate of 1.0% was applied and agreed upon by VDOT staff during the pre-scope of work meeting. The pre-scope of work form is provided in **Appendix B**. The growth rate was applied to the collected turning movement counts to establish volumes for future year (2034) conditions. No-Build (Construction Peak) AM and PM peak hour traffic volumes are summarized in **Figure 3**.

No-Build Conditions Intersection Capacity Analysis

During the construction peak hours, all signalized intersections and all unsignalized approaches are projected to operate with overall delays equivalent to LOS C or better, during the AM and PM peak hour.

Control delay and LOS results are summarized in **Table 5** following the analysis sections. The intersection capacity analysis results are included in **Appendix D**.

No-Build Conditions 95th Percentile Queueing Analysis

The no-build 95th percentile vehicle queue lengths during the construction peak hour were calculated by movement for each study intersection using Synchro 11TM. All queue lengths are expected to be accommodated within existing storage lanes during the AM and PM peak hour.

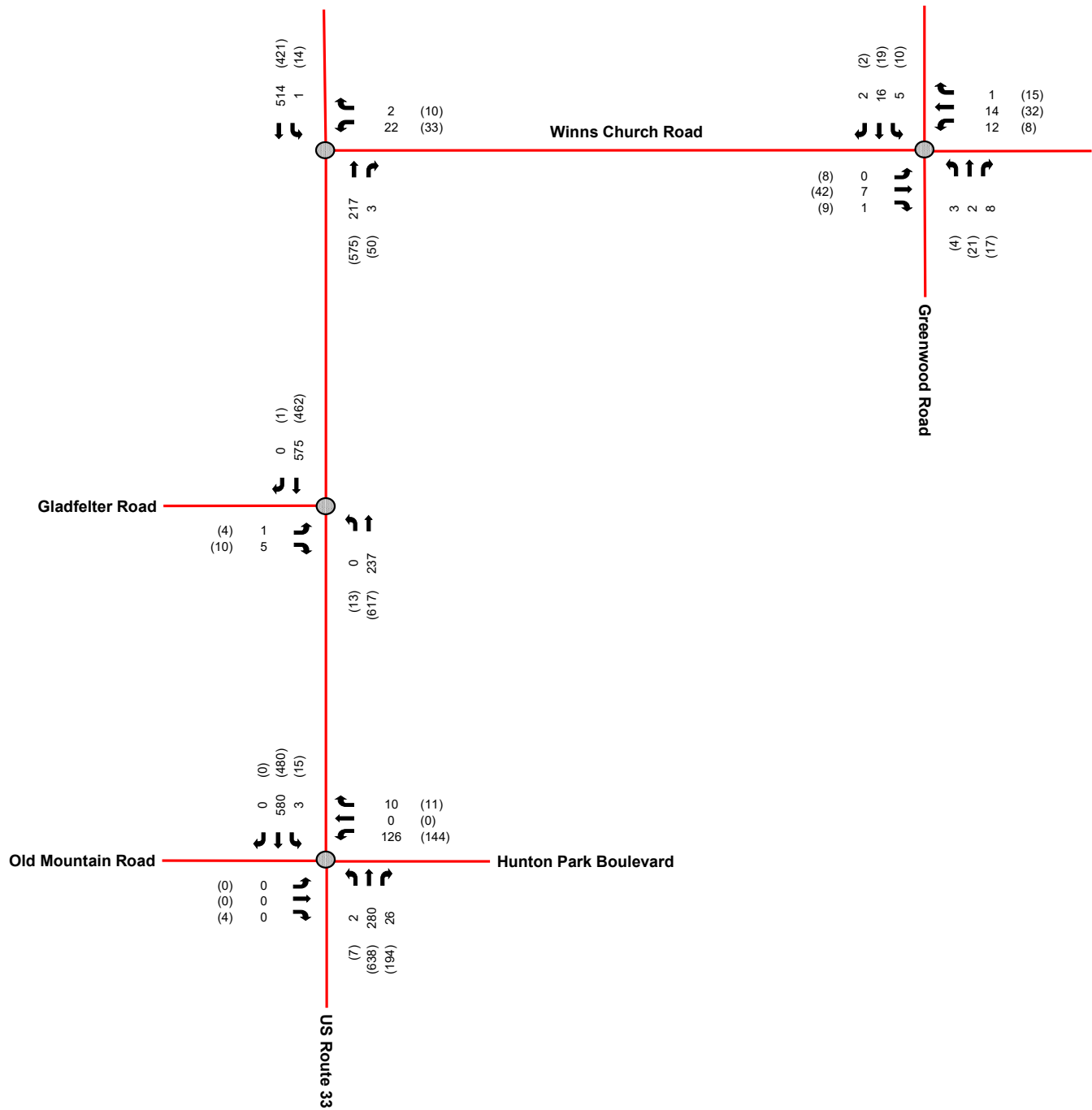
The queue results are summarized in **Table 6** following the analysis sections. The queueing analysis results are included in **Appendix D**.



NOT TO SCALE

Legend

- Study Roadway
- Study Intersection
- XX AM Peak Hour Traffic
- (XX) PM Peak Hour Traffic



4.4 Build Conditions

For the temporary construction traffic operational analysis, the Build 2034 conditions represent the future roadway network with the addition of background traffic growth, proposed roadway improvements, and traffic generated by the peak construction operations prior to the completion of the project.

During the construction period, access to the proposed development will be provided by one full-access and one partial-access (right-in/right-out only) driveway along US-33/Mountain Road. Construction employees will be directed to enter the site via the northern driveway (Project Driveway #2) and exit via the southern driveway (Project Driveway #1) to provide efficient traffic flow on-site. Roadway improvements included in Build 2034 (Construction Peak) conditions include a northbound right-turn lane with 200 feet of storage and 200 feet of taper at Project Driveway #2.

Site Trip Generation

Based on information provided by the applicant, the anticipated peak construction work force consists of 600-800 employees on-site daily. Construction employees would arrive between 4:00–7:00 AM and depart between 2:00–5:00 PM. The following assumptions were made regarding the peak construction traffic:

- 1,600 weekday daily trips
- 800 morning trips; employee arrival distributed between 4:00–7:00 AM; directional distribution was assumed to be 90% entering, 10% exiting
- 800 evening trips; employee departures distributed between 2:00–5:00 PM; directional distribution was assumed to be 10% entering, 90% exiting

The hourly distribution of construction employees arriving/departing the site was provided by the applicant and used to distribute the morning and evening trips to capture the employees' non-uniform arrival/departure. The anticipated hourly arrival and departure volumes are provided in **Table 4**.

Table 4: Anticipated Hourly Construction Traffic Volumes

Start Time	Percent Arriving/Departing	In	Out	Total
AM Peak Period				
4:00 AM	10%	72	8	80
5:00 AM	30%	216	24	240
6:00 AM	50%	360	40	400
7:00 AM	10%	72	8	80
PM Peak Period				
2:00 PM	10%	8	72	80
3:00 PM	50%	40	360	400
4:00 PM	30%	24	216	240
5:00 PM	10%	8	72	80

Site Trip Distribution and Assignment

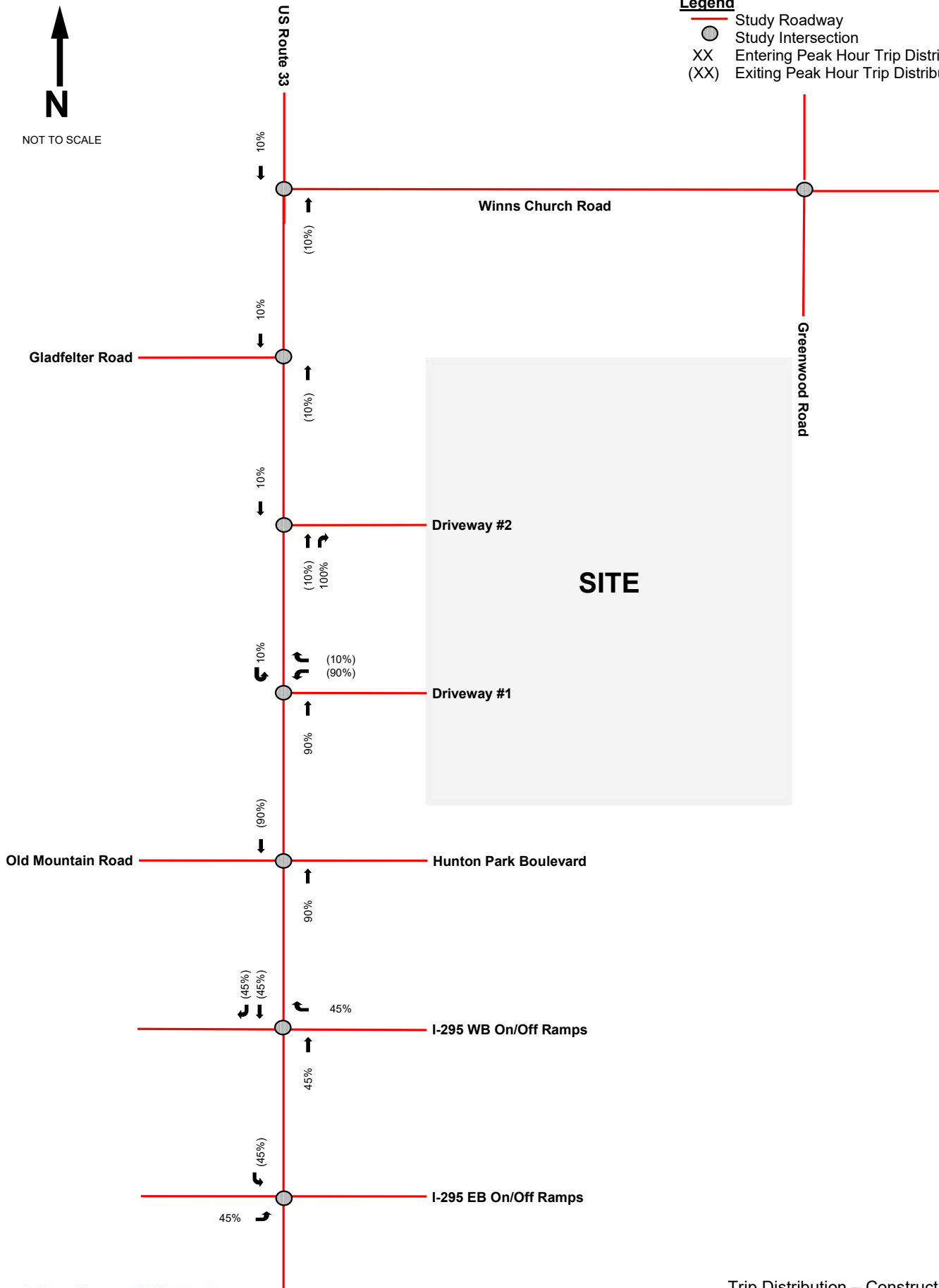
The distribution of traffic at study area intersections, including proposed access locations, was established based on information provided by the applicant, which assumed that a majority of the traffic attributable to the proposed development would originate from the US-33 and I-295 interchange. Note that the trip distribution assumptions were included in the approved Pre-scope of Work Form. The inbound and outbound distribution of traffic are shown in **Figure 4**. Trip assignment based on the trip distribution is shown in **Figure 5**.

The assignment of traffic generated by the project was calculated by applying the distribution percentage for a specific turning movement to the total number of inbound or outbound trips generated to establish the turning movement volume at that location. The build condition traffic volumes were then calculated by adding the site generated trips to the projected No-Build traffic volumes. The resulting Build 2034 (Construction Peak) volumes for the AM and PM peak hours are shown in **Figure 6**.



Legend

- Study Roadway
- Study Intersection
- XX Entering Peak Hour Trip Distribution
- (XX) Exiting Peak Hour Trip Distribution





Legend

- Study Roadway
- Study Intersection
- XX A.M. Peak Hour Traffic
- (XX) P.M. Peak Hour Traffic

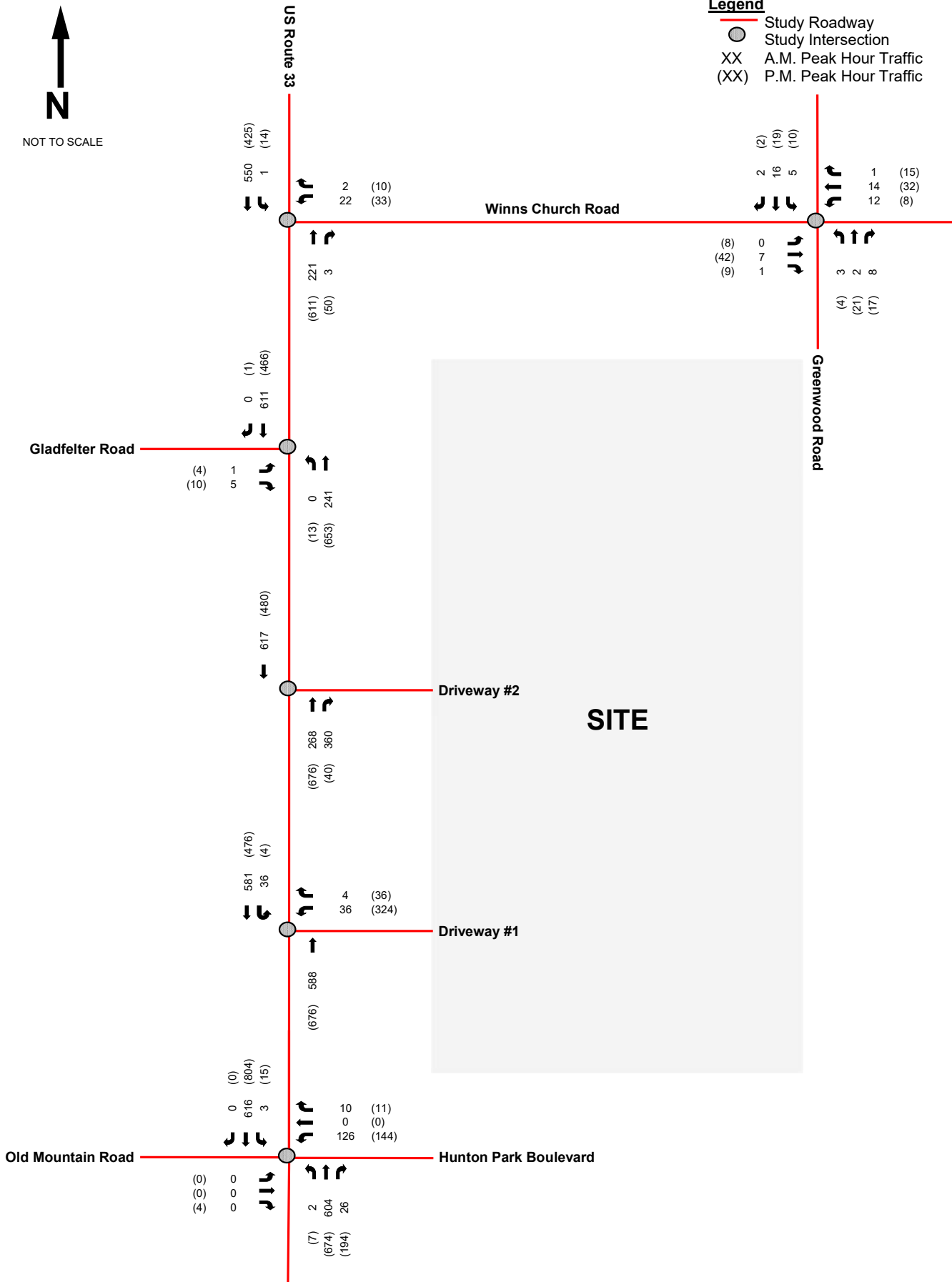


Figure 6
2034 Build (Construction Peak) Conditions
Mountain Road Technology Park
Hanover, Virginia

Build Conditions Intersection Capacity Analysis

During the construction peak hours, all signalized intersections and all unsignalized approaches are projected to operate with overall delays equivalent to LOS D or better, with the exception of the westbound approach at the intersection of US-33 and Project Driveway #1 during the PM peak hour, which is projected to operate with delays equivalent to LOS F.

Note that these results are typical where a low volume, stop-controlled, road intersects a high-volume, free-flow road. On occasions where vehicles are unable to exit the site, or excessive queues are observed on-site, it is expected that the contractor will deploy flaggers to maintain the safety and operations of the intersection.

Control delay and LOS results are summarized in **Table 5** following the analysis sections. The intersection capacity analysis results are included in **Appendix D**.

Build Conditions 95th Percentile Queue Analysis

The build 95th percentile vehicle queue lengths during the construction peak hour were calculated by movement for each study intersection using Synchro 11TM. All queue lengths are expected to be accommodated within existing storage lanes during the AM and PM peak hour.

The queue results are summarized in **Table 6** following the analysis sections. The queueing analysis results are included in **Appendix D**.

Table 5: Control Delay and LOS Summary (Construction Peak)

Intersection Number and Description		Approach	Lane Group	2025 Existing Conditions				No-Build Conditions				Build Conditions			
				AM		PM		AM		PM		AM		PM	
				Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
1	US-33/Mountain Road & Hunton Park Boulevard	Eastbound	Left	s	s	s	s	s	s	s	s	s	s	s	s
			Through	0.0	A	32.9	C	0.0	A	34.3	C	0.0	A	35.7	D
			Right	s	s	s	s	s	s	s	s	s	s	s	s
			Approach	0.0	A	32.9	C	0.0	A	34.3	C	0.0	A	35.7	D
		Westbound	Left	22.5	C	29.2	C	23.2	C	28.2	C	23.7	C	29.5	C
			Through	22.5	C	29.2	C	23.4	C	28.2	C	23.7	C	29.5	C
			Right	20.9	C	26.7	C	21.5	C	26.1	C	21.8	C	27.3	C
			Approach	22.4	C	29.0	C	23.2	C	28.1	C	23.6	C	29.3	C
		Northbound	Left	11.2	B	13.3	B	10.3	B	14.2	B	10.2	B	14.0	B
			Through	13.1	B	17.2	B	12.0	B	18.8	B	13.6	B	18.5	B
			Right	11.7	B	14.5	B	10.9	B	15.4	B	10.8	B	15.0	B
			Approach	13.0	B	16.5	B	11.9	B	18.0	B	13.5	B	17.7	B
		Southbound	Left	11.1	B	13.4	B	10.3	B	14.3	B	10.2	B	13.9	B
			Through	15.2	B	16.1	B	13.5	B	17.4	B	13.6	B	20.2	C
			Right	s	s	s	s	s	s	s	s	s	s	s	s
			Approach	15.2	B	16.0	B	13.5	B	17.3	B	13.6	B	20.1	C
		Intersection		15.5	B	17.7	B	14.3	B	18.9	B	14.5	B	19.8	B
2	US-33/Mountain Road & Gladfelter Road	Eastbound	Left	s	s	s	s	s	s	s	s	s	s	s	s
			Right	14.6	B	15.2	C	13.2	B	15.7	C	13.6	B	16.2	C
			Approach	14.6	B	15.2	C	13.2	B	15.7	C	13.6	B	16.2	C
		Northbound	Left	0.0	A	8.5	A	0.0	A	8.5	A	0.0	A	8.6	A
			Through	0.0	A	0.0	A	0.0	A	0.0	A	0.0	A	0.0	A
			Approach	0.0	A	0.2	A	0.0	A	0.2	A	0.0	A	0.2	A
		Southbound	Through	0.0	A	0.0	A	0.0	A	0.0	A	0.0	A	0.0	A
			Right	0.0	A	0.0	A	0.0	A	0.0	A	0.0	A	0.0	A
			Approach	0.0	A	0.0	A	0.0	A	0.0	A	0.0	A	0.0	A
		Intersection		–	–	–	–	–	–	–	–	–	–	–	–
3	US-33/Mountain Road & Winns Church Road	Westbound	Left	s	s	s	s	s	s	s	s	s	s	s	s
			Right	18.2	C	20.9	C	15.3	C	23.6	C	15.3	C	23.6	C
			Approach	18.2	C	20.9	C	15.3	C	23.6	C	15.3	C	23.6	C
		Northbound	Through	0.0	A	0.0	A	0.0	A	0.0	A	0.0	A	0.0	A
			Right	s	s	s	s	s	s	s	s	s	s	s	s
			Approach	0.0	A	0.0	A	0.0	A	0.0	A	0.0	A	0.0	A
		Southbound	Left	7.8	A	9.0	A	7.7	A	9.1	A	7.7	A	9.1	A
			Through	0.0	A	0.0	A	0.0	A	0.0	A	0.0	A	0.0	A
			Approach	0.0	A	0.3	A	0.0	A	0.3	A	0.0	A	0.3	A
		Intersection		–	–	–	–	–	–	–	–	–	–	–	–
4	Winns Church Road & Greenwood Road	Eastbound	Left	0.0	A	7.3	A	0.0	A	7.3	A	0.0	A	7.3	A
			Through	0.0	A	0.0	A	0.0	A	0.0	A	0.0	A	0.0	A
			Right	0.0	A	0.0	A	0.0	A	0.0	A	0.0	A	0.0	A
			Approach	0.0	A	1.0	A	0.0	A	1.0	A	0.0	A	1.0	A
		Westbound	Left	7.2	A	7.3	A	7.2	A	7.3	A	7.2	A	7.3	A
			Through	0.0	A	0.0	A	0.0	A	0.0	A	0.0	A	0.0	A
			Right	0.0	A	0.0	A	0.0	A	0.0	A	0.0	A	0.0	A
			Approach	3.2	A	1.0	A	3.2	A	1.1	A	3.2	A	1.1	A
		Northbound	Left	s	s	s	s	s	s	s	s	s	s	s	s
			Through	8.7	A	9.5	A	8.7	A	9.5	A	8.7	A	9.5	A
			Right	s	s	s	s	s	s	s	s	s	s	s	s
			Approach	8.7	A	9.5	A	8.7	A	9.5	A	8.7	A	9.5	A
		Southbound	Left	s	s	s	s	s	s	s	s	s	s	s	s
			Through	9.2	A	9.8	A	9.2	A	9.9	A	9.2	A	9.9	A
			Right	s	s	s	s	s	s	s	s	s	s	s	s
			Approach	9.2	A	9.8	A	9.2	A	9.9	A	9.2	A	9.9	A
		Intersection		–	–	–	–	–	–	–	–	–	–	–	–

Intersection Number and Description		Approach	Lane Group	2025 Existing Conditions				No-Build Conditions				Build Conditions			
				AM		PM		AM		PM		AM		PM	
				Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
5	US-33/Mountain Road & Project Driveway #1	Westbound	Left	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	s	s	s	s
			Right	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	16.4	C	104.0	F
			Approach	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	16.4	C	104.0	F
		Northbound	Through	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.0	A	0.0	A
			Right	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.0	A	0.0	A
			Approach	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.0	A	0.0	A
		Southbound	Left	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	11.9	B	12.8	B
			Through	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.0	A	0.0	A
			Approach	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.7	A	0.1	A
		Intersection		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	–	–	–	–
6	US-33/Mountain Road & Project Driveway #2	Northbound	Through	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.0	A	0.0	A
			Right	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.0	A	0.0	A
			Approach	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.0	A	0.0	A
		Southbound	Through	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.0	A	0.0	A
			Approach	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.0	A	0.0	A
		Intersection		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	–	–	–	–

Note: – Synchro does not report delay for free-flow movements; no delay reported
S Shared lane
N/A Movement does not exist for scenario

Table 6: 95th Percentile Queue Lengths (Construction Peak)

Intersection Number and Description		Approach	Lane Group	Effective Storage	2025 Existing Conditions		No-Build Conditions		Build Conditions	
					AM	PM	AM	PM	AM	PM
1	US-33/Mountain Road & Hunton Park Boulevard	Eastbound	Left	s	s	s	s	s	s	s
			Through	Continuous	0	0	0	0	0	0
			Right	s	s	s	s	s	s	s
		Westbound	Left	215	56	81	60	89	63	94
			Through	Continuous	56	81	61	90	63	95
			Right	530	0	0	0	0	0	0
		Northbound	Left	175	3	7	3	9	3	9
			Through	Continuous	68	202	74	226	163	239
			Right	Continuous	0	44	0	45	0	45
		Southbound	Left	350	3	13	3	14	3	14
			Through	Continuous	140	148	154	164	165	294
			Right	s	s	s	s	s	s	s
2	US-33/Mountain Road & Gladfelter Road	Eastbound	Left	s	s	s	s	s	s	s
			Right	Continuous	3	3	0	3	0	3
		Northbound	Left	s	0	0	0	0	0	0
			Through	Continuous	0	0	0	0	0	0
		Southbound	Through	Continuous	0	0	0	0	0	0
			Right	s	0	0	0	0	0	0
3	US-33/Mountain Road & Winns Church Road	Westbound	Left	s	s	s	s	s	s	s
			Right	Continuous	8	15	5	18	5	20
		Northbound	Through	Continuous	0	0	0	0	0	0
			Right	s	s	s	s	s	s	s
		Southbound	Left	s	s	s	s	s	s	s
			Through	Continuous	0	0	0	3	0	3
4	Winns Church Road & Greenwood Road	Eastbound	Left	s	s	s	s	s	s	s
			Through	Continuous	0	0	0	0	0	0
			Right	s	s	s	s	s	s	s
		Westbound	Left	s	s	s	s	s	s	s
			Through	Continuous	0	0	0	0	0	0
			Right	s	s	s	s	s	s	s
		Northbound	Left	s	s	s	s	s	s	s
			Through	Continuous	0	5	0	5	0	5
			Right	s	s	s	s	s	s	s
		Southbound	Left	s	s	s	s	s	s	s
			Through	Continuous	3	3	3	3	3	3
			Right	s	s	s	s	s	s	s
5	US-33/Mountain Road & Project Driveway #1	Westbound	Left	s	N/A	N/A	N/A	N/A	s	s
			Right	Continuous	N/A	N/A	N/A	N/A	10	350
		Northbound	Through	Continuous	N/A	N/A	N/A	N/A	0	0
			Right	s	N/A	N/A	N/A	N/A	s	s
		Southbound	Left	245	N/A	N/A	N/A	N/A	5	0
			Through	Continuous	N/A	N/A	N/A	N/A	0	0
6	US-33/Mountain Road & Project Driveway #2	Northbound	Through	Continuous	N/A	N/A	N/A	N/A	0	0
			Right	300 ⁽¹⁾	N/A	N/A	N/A	N/A	0	0
		Southbound	Through	245	N/A	N/A	N/A	N/A	0	0

Note: Effective storage length is equal to the storage length plus half of the existing taper length, per VDOT Traffic Operations and Safety Analysis Manual (TOSAM) version 2.0
S Shared lane
N/A Movement does not exist for scenario

4.5 I-295 Interchange Highway Capacity Analysis

The HCS7 Freeway Facilities module was used to evaluate the merge and diverge operations of the US-33 and Interstate 295 (I-295) interchange ramps that are anticipated to be used by the proposed development construction traffic. The following I-295 on/off ramps were analyzed during the AM and PM peak hour for the Existing 2025 (Construction Peak), No-Build 2034 (Construction Peak), and Build 2034 (Construction Peak) conditions:

- I-295 eastbound to US-33 northbound
- US-33 southbound to I-295 eastbound
- I-295 westbound to US-33 northbound
- US-33 southbound to I-295 westbound

The results of the construction peak highway capacity analysis indicate that under all analysis conditions, the I-295 on/off-ramps are projected to operate with densities equivalent to LOS C or better.

Figures showing the speed, density, volume, and LOS results and complete reports generated by the HCS7 Freeway Facilities module for each scenario are included in **Appendix E**.

5 Full Buildout - Traffic Operational Analysis

The traffic operational analysis conducted in the following sections was conducted to evaluate the impact of the traffic that is anticipated to be generated for the development after construction is completed, and the development is operational (Full Buildout).

5.1 Peak Hour Determination

The previously discussed collected TMCs were used to determine a network-wide commuter peak hour for the AM and PM peak periods based on the peak hours calculated for each study intersection. The hours that captured the highest percentage of overall traffic in the network peak hours. The AM peak hour was determined to be from 7:15–8:15 AM and the PM peak hour was determined to be from 4:15–5:15 PM. Existing AM and PM peak hour traffic turning volumes are summarized in **Figure 7**.



NOT TO SCALE

Legend

- Study Roadway
- Study Intersection
- XX AM Peak Hour Traffic
- (XX) PM Peak Hour Traffic

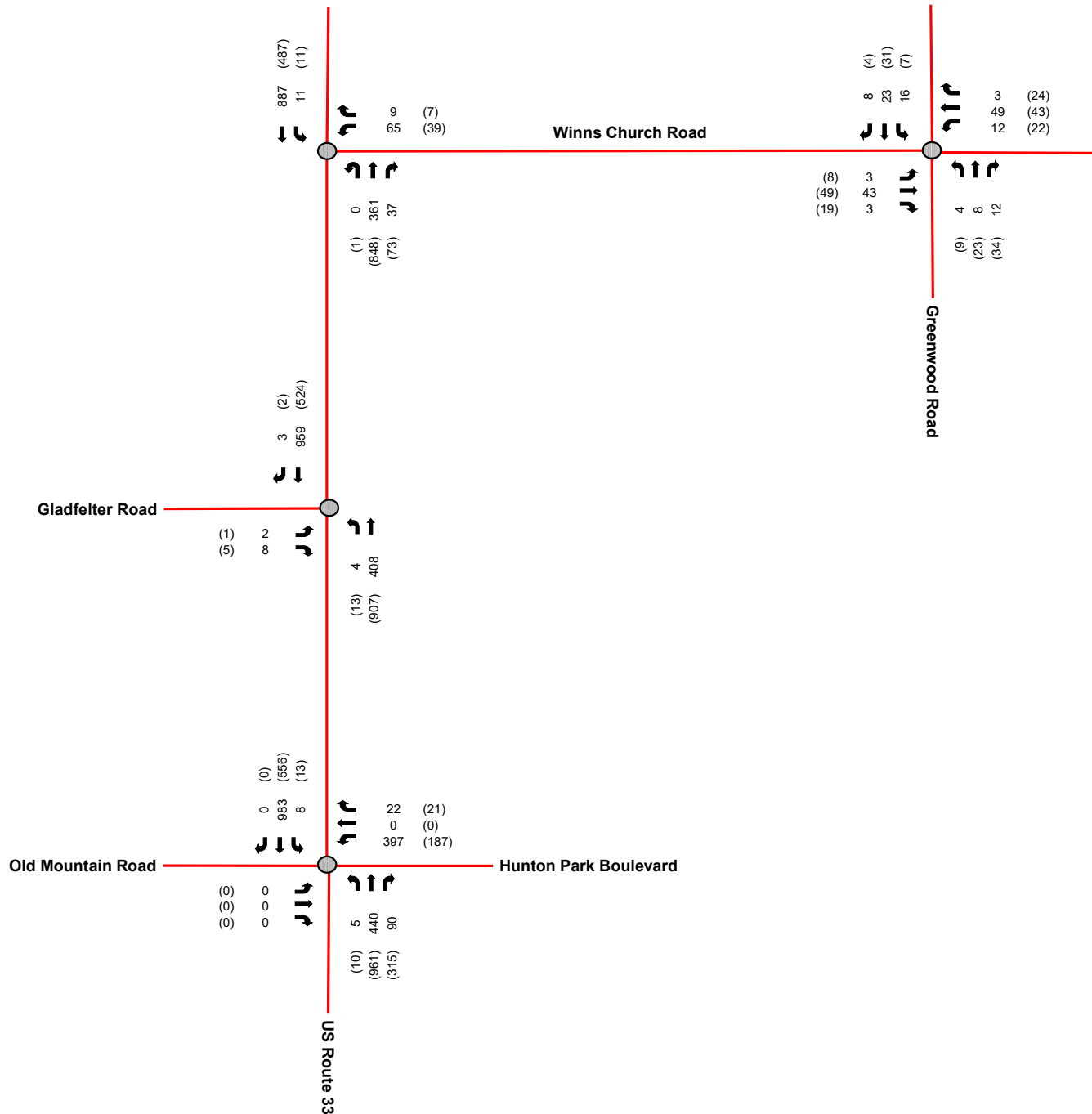


Figure 7
2025 Existing Conditions
Mountain Road Technology Park
Hanover, VA

5.2 Existing Conditions Analysis Results

Existing Conditions Intersection Capacity Analysis

During the commuter peak hours, all signalized intersections and all unsignalized approaches operate with overall delays equivalent to LOS D or better, with the exception of the westbound approach at the intersection of US-33 and Winns Church Road, which operates at LOS E during the AM peak hour.

Control delay and LOS results are summarized in **Table 8** following the analysis sections. The intersection capacity analysis results are included in **Appendix D**.

Existing Conditions 95th Percentile Queuing Analysis

The existing 95th percentile vehicle queue lengths during the commuter peak hour were calculated by movement for each study intersection using Synchro 11TM. All queue lengths are expected to be accommodated within existing storage lanes during the AM and PM peak hours.

The queue results are summarized in **Table 9** following the analysis sections. The queueing analysis results are included in **Appendix D**.

5.3 Projected No-Build Conditions

The projected No-Build conditions represent the future roadway network and background traffic growth in the study area. Projected No-Build conditions were analyzed in the year 2034. No future developments that have been approved but not yet built were identified or included in the analyses conducted in this traffic impact analysis.

Traffic Growth Rate

As previously discussed, a linear growth rate of 1.0% was applied and agreed upon by VDOT staff during the pre-scope of work meeting. The pre-scope of work form is provided in **Appendix B**. The growth rate was applied to the collected turning movement counts to establish volumes for future year (2034) conditions. No-Build AM and PM peak hour traffic volumes are summarized in **Figure 8**.

No-Build Conditions Intersection Capacity Analysis

During the commuter peak hours, all signalized intersections and all unsignalized approaches are projected to operate with overall delays equivalent to LOS D or better, with the exception of the westbound approach at the intersection of US-33 and Winns Church Road, which operates at LOS E during the AM and PM peak hour.

Control delay and LOS results are summarized in **Table 8** following the analysis sections. The intersection capacity analysis results are included in **Appendix D**.

No-Build Conditions 95th Percentile Queueing Analysis

The no-build 95th percentile vehicle queue lengths during the commuter peak hour were calculated by movement for each study intersection using Synchro 11TM. All queue lengths are expected to be accommodated within existing storage lanes during the AM and PM peak hours.

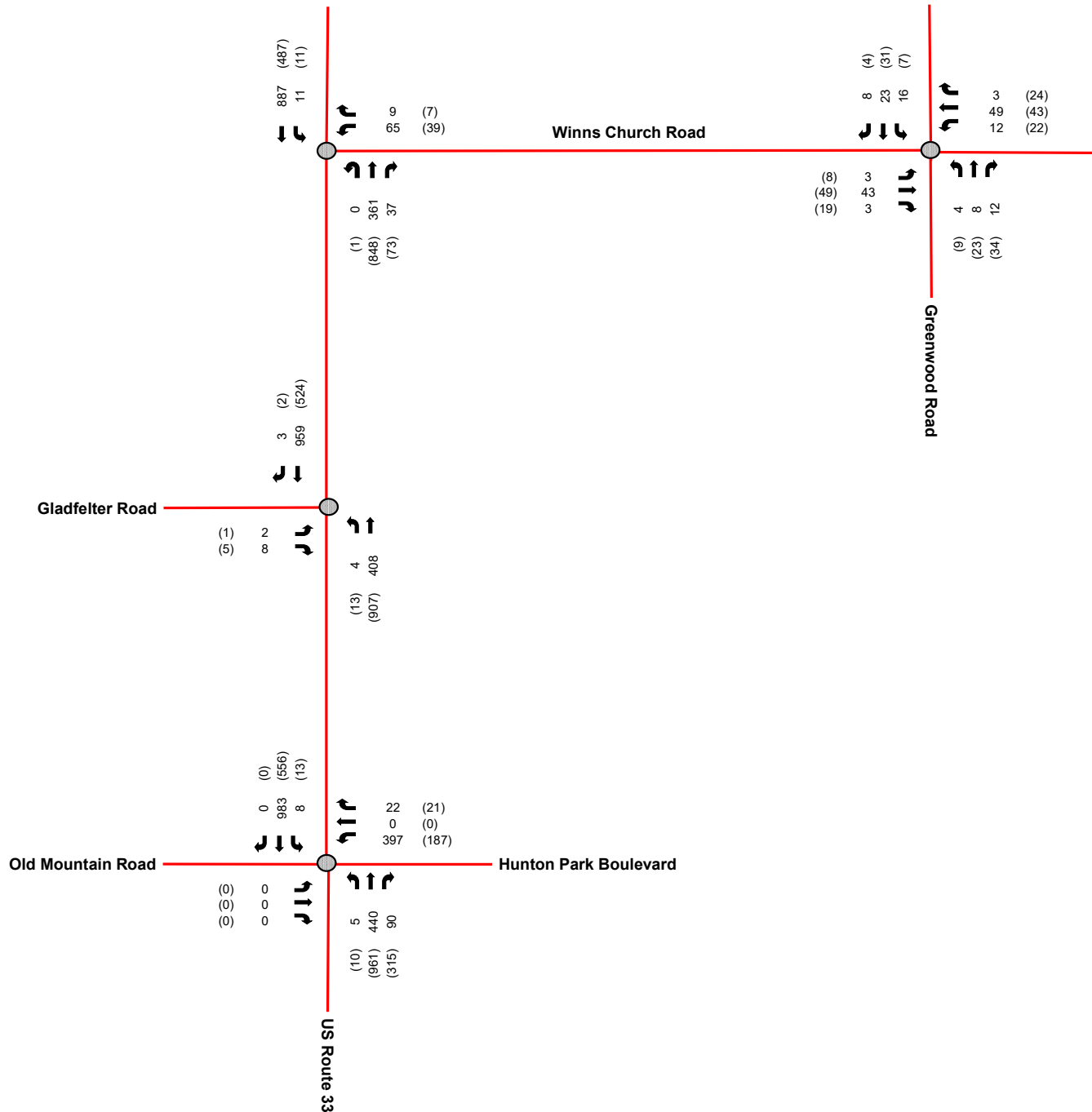
The queue results are summarized in **Table 9** following the analysis sections. The queueing analysis results are included in **Appendix D**.



NOT TO SCALE

Legend

-  Study Roadway
-  Study Intersection
- XX AM Peak Hour Traffic
- (XX) PM Peak Hour Traffic



5.4 Build Conditions

For the traffic operational analysis, the Build 2034 conditions represent the future roadway network with the addition of background traffic growth, proposed roadway improvements, and traffic generated by the proposed project when construction is complete and the development is operational. Access to the proposed site will be provided via one full-access driveway along US-33 at an existing median break and two (2) emergency/utility access driveways; one (right-in/right-out driveway) along US-33 and one (full-access driveway) along Winns Church Road. Roadway improvements included in the Build 2034 conditions include a northbound right-turn lane with 200 feet of storage and 100 feet of taper at Project Driveway #1, consistent with the adjacent left and right-turn lanes along Mountain Road.

Site Trip Generation

Traffic projections were estimated for the proposed development based on the VDOT-approved *AWS Data Center Trip Generation Assessment* conducted by Bowman, March 2023. The total trips represent the number of vehicles entering and exiting the proposed development to and from the adjacent street network. **Table 7** summarizes the project's trip generation potential during the AM and PM peak hours. Detailed trip generation calculations are included in **Appendix F**.

Table 7: Proposed Development Trip Generation

Land Use	Scale	Weekday Daily Trips	Weekday AM Peak Hour			Weekday PM Peak Hour		
			In	Out	Total	In	Out	Total
Data Center	900 Megawatts	1,488	102	84	186	18	42	60

Site Trip Distribution and Assignment

The distribution of traffic at study area intersections, including proposed access locations, was established based on data provided by the applicant, which assumed that a majority of the traffic attributable to the proposed development would originate from the US-33 and I-295 interchange. Note that the trip distribution assumptions were included in the approved Pre-scope of Work Form. The inbound and outbound distribution of traffic are shown in **Figure 9**. Trip assignment based on the trip distribution is shown in **Figure 10**.

The assignment of traffic generated by the project was calculated by applying the distribution percentage for a specific turning movement to the total number of inbound or outbound trips generated to establish the turning movement volume at that location. The build condition traffic volumes were then calculated by adding the site generated trips to the projected no-build traffic volumes. The resulting 2034 Build volumes for the AM and PM peak hours are shown in **Figure 11**.



Legend

- Study Roadway
- Study Intersection
- XX Entering Peak Hour Trip Distribution
- (XX) Exiting Peak Hour Trip Distribution

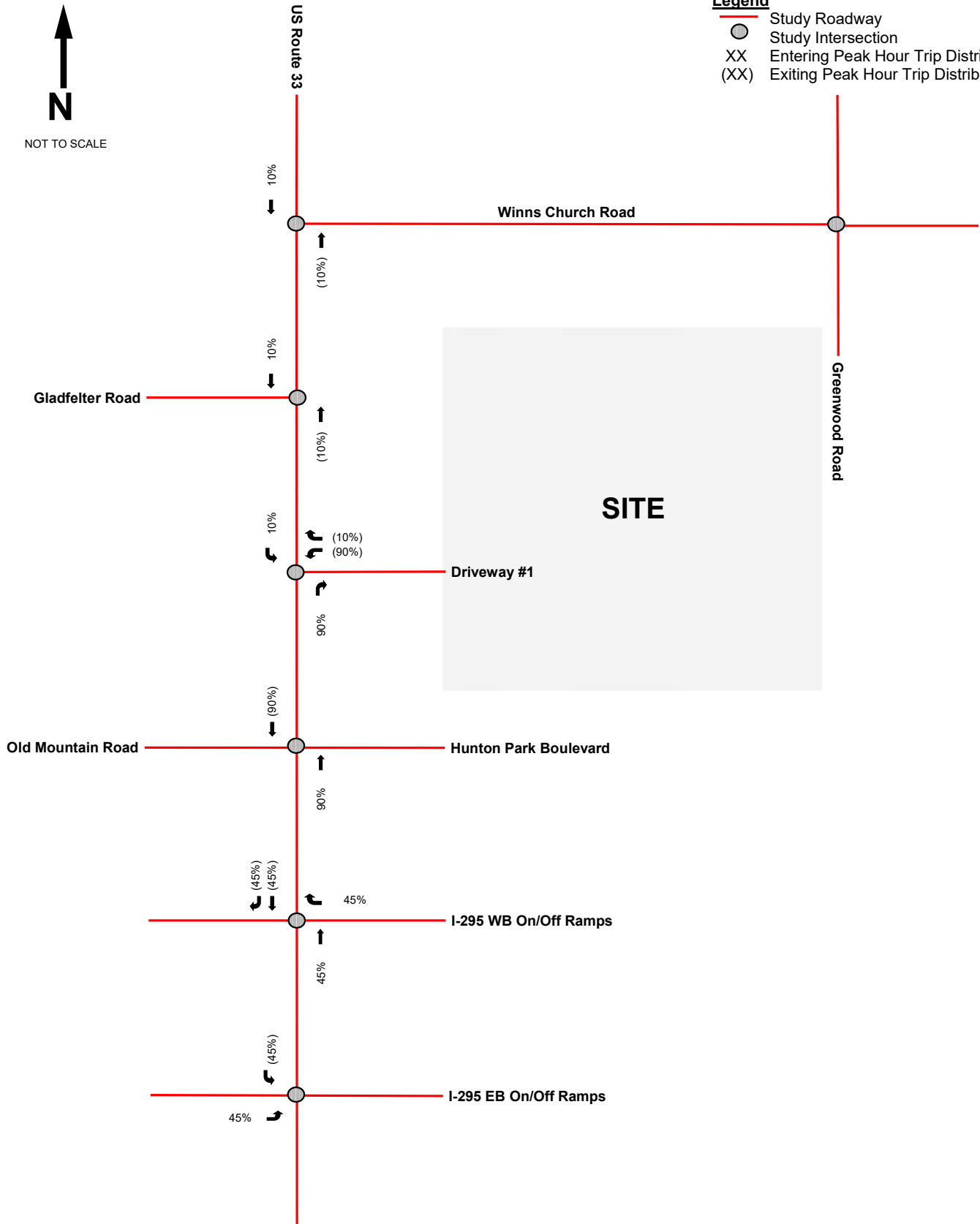


Figure 9
Trip Distribution
Mountain Road Technology Park
Hanover, VA



Legend

-  Study Roadway
-  Study Intersection
- XX Entering Peak Hour Trip Assignment
- (XX) Exiting Peak Hour Trip Assignment

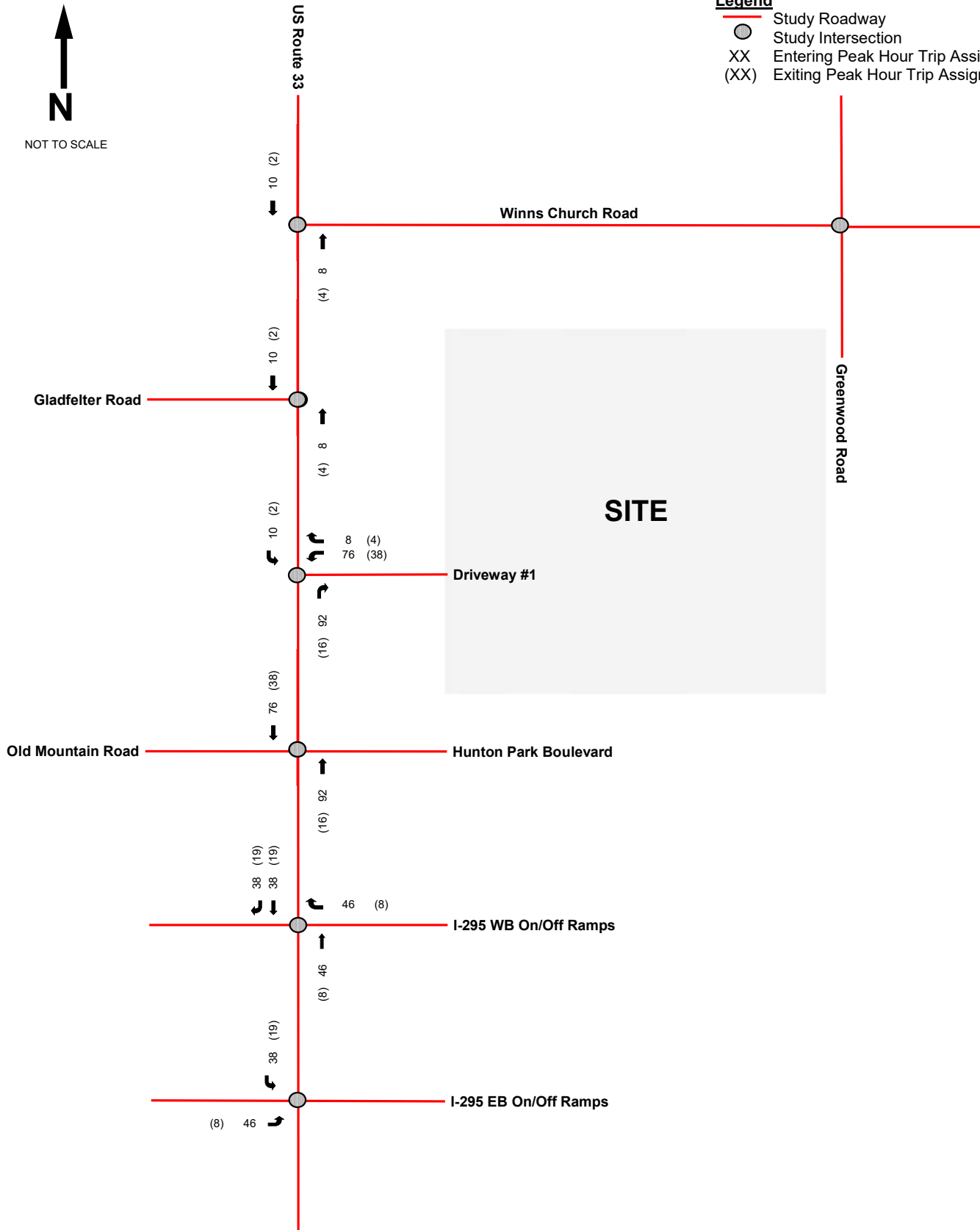


Figure 10
Trip Assignment
Mountain Road Technology Park
Hanover, VA



Legend

- Study Roadway
- Study Intersection
- XX A.M. Peak Hour Traffic
- (XX) P.M. Peak Hour Traffic

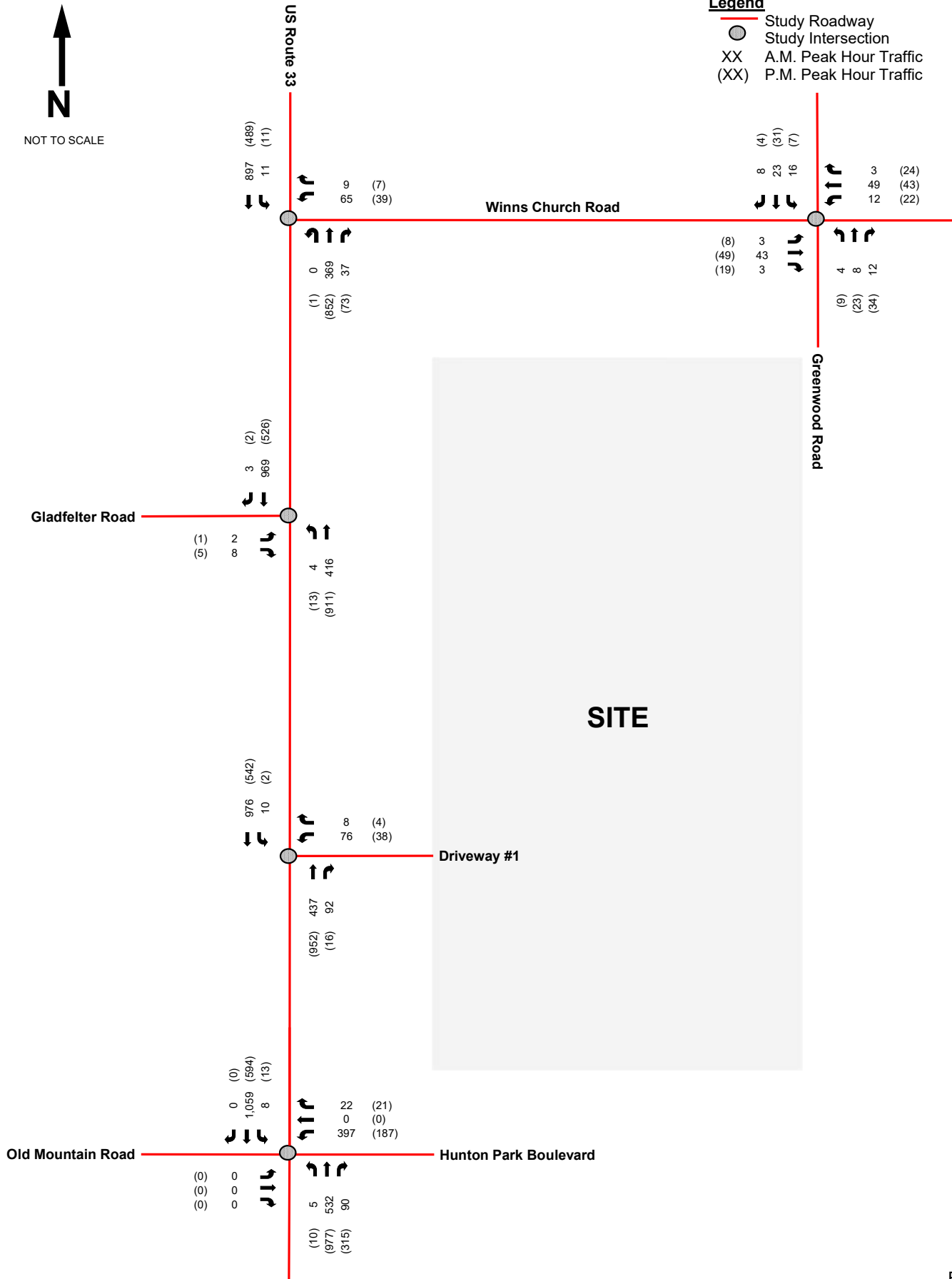


Figure 11
2034 Build Conditions
Mountain Road Technology Park
Hanover, Virginia

Build Conditions Intersection Capacity Analysis

During the commuter peak hours, all signalized intersections and all unsignalized approaches are projected to operate with delays equivalent to LOS D or better, with the exception of the westbound approach at the intersection of US-33 and Winns Church Road, which operates at LOS E during the AM and PM peak hour.

Note that the approach was projected to operate with delays equivalent to LOS E under No-Build conditions, prior to the completion of the project. The project is not expected to increase traffic on the minor street at this intersection.

Control delay and LOS results are summarized in **Table 8** following the analysis sections. The intersection capacity analysis results are included in **Appendix D**.

Build Conditions 95th Percentile Queueing Analysis

The build 95th percentile vehicle queue lengths during the commuter peak hour were calculated by movement for each study intersection using Synchro 11TM. All queue lengths are expected to be accommodated within existing storage lanes during the AM and PM peak hours.

The queue results are summarized in **Table 9** following the analysis sections. The queueing analysis results are included in **Appendix D**.

Table 8: Control Delay and LOS Summary

Intersection Number and Description		Approach	Lane Group	2025 Existing Conditions				No-Build Conditions				Build Conditions			
				AM		PM		AM		PM		AM		PM	
				Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
1	US-33/Mountain Road & Hunton Park Boulevard	Eastbound	Left	s	s	s	s	s	s	s	s	s	s	s	s
			Through	0.0	A	0.0	A	0.0	A	0.0	A	0.0	A	0.0	A
			Right	s	s	s	s	s	s	s	s	s	s	s	s
			Approach	0.0	A	0.0	A	0.0	A	0.0	A	0.0	A	0.0	A
		Westbound	Left	28.3	C	29.5	C	34.9	C	31.3	C	43.1	D	32.1	C
			Through	28.3	C	29.5	C	35.0	C	31.3	C	43.3	D	32.2	C
			Right	23.2	C	26.8	C	26.8	C	28.2	C	30.9	C	28.9	C
			Approach	28.0	C	29.2	C	34.5	C	31.0	C	42.5	D	31.8	C
		Northbound	Left	12.7	B	9.8	A	12.1	B	9.5	A	11.3	B	9.3	A
			Through	14.7	B	14.7	B	14.0	B	14.6	B	13.3	B	14.4	B
			Right	13.0	B	11.8	B	12.3	B	11.7	B	11.3	B	11.5	B
			Approach	14.4	B	13.9	B	13.7	B	13.9	B	13.0	B	13.7	B
		Southbound	Left	12.3	B	10.1	B	11.5	B	9.9	A	10.4	B	9.8	A
			Through	19.2	B	12.2	B	18.4	B	12.0	B	17.2	B	12.0	B
			Right	s	s	s	s	s	s	s	s	s	s	s	s
			Approach	19.2	B	12.2	B	18.3	B	12.0	B	17.2	B	11.9	B
		Intersection		19.8	B	15.0	B	20.5	C	15.1	B	20.9	C	14.9	B
2	US-33/Mountain Road & Gladfelter Road	Eastbound	Left	s	s	s	s	s	s	s	s	s	s	s	s
			Right	19.4	C	14.3	B	21.4	C	15.4	C	21.7	C	15.5	C
			Approach	19.4	C	14.3	B	21.4	C	15.4	C	21.7	C	15.5	C
		Northbound	Left	9.4	A	8.4	A	10.3	B	8.5	A	10.3	B	8.5	A
			Through	0.0	A	0.0	A	0.0	A	0.0	A	0.0	A	0.0	A
			Approach	0.1	A	0.1	A	0.1	A	0.1	A	0.1	A	0.1	A
		Southbound	Through	0.0	A	0.0	A	0.0	A	0.0	A	0.0	A	0.0	A
			Right	0.0	A	0.0	A	0.0	A	0.0	A	0.0	A	0.0	A
			Approach	0.0	A	0.0	A	0.0	A	0.0	A	0.0	A	0.0	A
		Intersection		–	–	–	–	–	–	–	–	–	–	–	–
3	US-33/Mountain Road & Winns Church Road	Westbound	Left	s	s	s	s	s	s	s	s	s	s	s	s
			Right	35.2	E	31.3	D	45.5	E	39.2	E	48.3	E	39.6	E
			Approach	35.2	E	31.3	D	45.5	E	39.2	E	48.3	E	39.6	E
		Northbound	Through	0.0	A	0.0	A	0.0	A	0.0	A	0.0	A	0.0	A
			Right	s	s	s	s	s	s	s	s	s	s	s	s
			Approach	0.0	A	0.0	A	0.0	A	0.0	A	0.0	A	0.0	A
		Southbound	Left	8.3	A	10.0	A	8.4	A	10.3	B	8.4	A	10.4	B
			Through	0.0	A	0.0	A	0.0	A	0.0	A	0.0	A	0.0	A
			Approach	0.1	A	0.2	A	0.1	A	0.2	A	0.1	A	0.2	A
		Intersection		–	–	–	–	–	–	–	–	–	–	–	–
4	Winns Church Road & Greenwood Road	Eastbound	Left	7.3	A	7.3	A	8.0	A	7.3	A	8.0	A	7.3	A
			Through	0.0	A	0.0	A	0.0	A	0.0	A	0.0	A	0.0	A
			Right	0.0	A	0.0	A	0.0	A	0.0	A	0.0	A	0.0	A
			Approach	0.5	A	0.7	A	0.5	A	0.8	A	0.5	A	0.8	A
		Westbound	Left	7.3	A	7.4	A	7.3	A	7.4	A	7.3	A	7.4	A
			Through	0.0	A	0.0	A	0.0	A	0.0	A	0.0	A	0.0	A
			Right	0.0	A	0.0	A	0.0	A	0.0	A	0.0	A	0.0	A
			Approach	1.4	A	1.8	A	1.4	A	1.8	A	1.4	A	1.8	A
		Northbound	Left	s	s	s	s	s	s	s	s	s	s	s	s
			Through	9.2	A	9.7	A	9.3	A	9.9	A	9.3	A	9.9	A
			Right	s	s	s	s	s	s	s	s	s	s	s	s
			Approach	9.2	A	9.7	A	9.3	A	9.9	A	9.3	A	9.9	A
		Southbound	Left	s	s	s	s	s	s	s	s	s	s	s	s
			Through	9.7	A	10.4	B	9.8	A	10.7	B	9.8	A	10.7	B
			Right	s	s	s	s	s	s	s	s	s	s	s	s
			Approach	9.7	A	10.4	B	9.8	A	10.7	B	9.8	A	10.7	B
		Intersection		–	–	–	–	–	–	–	–	–	–	–	–

Intersection Number and Description		Approach	Lane Group	2025 Existing Conditions				No-Build Conditions				Build Conditions			
				AM		PM		AM		PM		AM		PM	
				Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
5	US-33/Mountain Road & Project Driveway #1	Westbound	Left	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	s	s	s	s
			Right	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	17.5	C	21.9	C
			Approach	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	17.5	C	21.9	C
		Northbound	Through	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.0	A	0.0	A
			Right	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.0	A	0.0	A
			Approach	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.0	A	0.0	A
		Southbound	Left	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	8.7	A	10.5	B
			Through	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.0	A	0.0	A
			Approach	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.1	A	0.0	A
		Intersection		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	–	–	–	–

Note: – Synchro does not report delay for free-flow movements; no delay reported
S Shared lane
N/A Movement does not exist for scenario

Table 9: 95th Percentile Queue Lengths

Intersection Number and Description		Approach	Lane Group	Effective Storage	2025 Existing Conditions		No-Build Conditions		Build Conditions	
					AM	PM	AM	PM	AM	PM
1	US-33/Mountain Road & Hunton Park Boulevard	Eastbound	Left	s	s	s	s	s	s	s
			Through	Continuous	0	0	0	0	0	0
			Right	s	s	s	s	s	s	s
		Westbound	Left	215	192	107	215	112	215	112
			Through	Continuous	192	107	216	114	216	114
			Right	530	0	0	0	0	0	0
		Northbound	Left	175	6	7	6	8	6	8
			Through	Continuous	128	263	144	292	176	300
			Right	Continuous	4	73	7	87	7	88
		Southbound	Left	350	8	8	9	9	9	9
			Through	Continuous	319	138	369	151	410	163
			Right	s	s	s	s	s	s	s
2	US-33/Mountain Road & Gladfelter Road	Eastbound	Left	s	s	s	s	s	s	s
			Right	Continuous	3	0	3	3	3	3
		Northbound	Left	s	0	0	0	0	0	0
			Through	Continuous	0	0	0	0	0	0
		Southbound	Through	Continuous	0	0	0	0	0	0
3	US-33/Mountain Road & Winns Church Road	Westbound	Left	s	s	s	s	s	s	s
			Right	Continuous	43	23	58	33	60	33
		Northbound	Through	Continuous	0	0	0	0	0	0
			Right	s	s	s	s	s	s	s
		Southbound	Left	s	s	s	s	s	s	s
4	Winns Church Road & Greenwood Road	Eastbound	Left	s	s	s	s	s	s	s
			Through	Continuous	0	0	0	0	0	0
			Right	s	s	s	s	s	s	s
		Westbound	Left	s	s	s	s	s	s	s
			Through	Continuous	0	0	0	0	0	0
			Right	s	s	s	s	s	s	s
		Northbound	Left	s	s	s	s	s	s	s
			Through	Continuous	3	8	3	8	3	8
			Right	s	s	s	s	s	s	s
		Southbound	Left	s	s	s	s	s	s	s
			Through	Continuous	5	5	5	5	5	5
5	US-33/Mountain Road & Project Driveway #1	Westbound	Left	s	N/A	N/A	N/A	N/A	s	s
			Right	Continuous	N/A	N/A	N/A	N/A	23	15
		Northbound	Through	Continuous	N/A	N/A	N/A	N/A	0	0
			Right	250 ⁽¹⁾	N/A	N/A	N/A	N/A	0	0
		Southbound	Left	245	N/A	N/A	N/A	N/A	0	0

Note: Effective storage length is equal to the storage length plus half of the existing taper length, per VDOT Traffic Operations and Safety Analysis Manual (TOSAM) version 2.0
S Shared lane
N/A Movement does not exist for scenario

5.5 I-295 Interchange Highway Capacity Analysis

The HCS7 Freeway Facilities module was used to evaluate the merge and diverge operations of the US-33 and Interstate 295 (I-295) interchange ramps that are anticipated to be used by the proposed development traffic. The following I-295 on/off ramps were analyzed during the AM and PM peak hour for the Existing 2025, No-Build 2034, and Build 2034 conditions:

- I-295 eastbound to US-33 northbound
- US-33 southbound to I-295 eastbound
- I-295 westbound to US-33 northbound
- US-33 southbound to I-295 westbound

The results of the highway capacity analysis indicate that under all analysis conditions, the I-295 on/off-ramps are projected to operate with densities equivalent to LOS C or better.

Figures showing the speed, density, volume, and LOS results and complete reports generated by the HCS7 Freeway Facilities module for each scenario are included in **Appendix E**.

6 Access Management

An evaluation of access management and turn lane warrants was prepared based on the projected traffic volumes and the spacing standards outlined in Table 2-2 and Figure 4-11 in Appendix F of the VDOT Road Design Manual.

Access to the proposed site will be provided via one full-access driveway along US-33 at an existing median break and two (2) emergency/utility access driveways; one (right-in/right-out driveway) along US-33 and one (full-access driveway) along Winns Church Road. The emergency/utility access along US-33 will serve as a temporary driveway during construction operations. Proposed project driveways are expected to meet spacing and corner clearance criteria outlined within the VDOT Road Design Manual. The required and proposed access spacing is shown in **Figure 12** and **Figure 13**.

Turn lane warrant analyses were conducted for the 2034 Build (Construction Peak) and 2034 Build conditions at the proposed Project Driveway #1 and Project Driveway #2 using the turn lane warrant standards outlined in Appendix F of the VDOT Road Design Manual. The right-turn and left-turn lane warrant analysis results for the project driveways are summarized in **Table 10**.

Table 10: Turn Lane Warrant Analysis

Project Driveway	Right-Turn Lane Warranted?		Left-Turn Lane Warranted?	
	AM Peak Hour	PM Peak Hour	AM Peak Hour	PM Peak Hour
2034 Build (Construction Peak) Conditions				
DW 1	Not evaluated, no traffic assigned	Not evaluated, no traffic assigned	N/A ⁽²⁾	N/A ⁽²⁾
DW 2	Yes – 200 feet of storage and 200 feet of taper ⁽¹⁾	Yes – 200 feet of taper	N/A ⁽³⁾	N/A ⁽³⁾
2034 Build Conditions				
DW 1	Yes – 200 feet of storage and 200 feet of taper ⁽¹⁾	Yes – 200 feet of taper	N/A ⁽²⁾	N/A ⁽²⁾
DW 2	Not evaluated, emergency/utility access	Not evaluated, emergency/utility access	N/A ⁽³⁾	N/A ⁽³⁾

Notes: (1) Per Figure 3-1 of the VDOT Road Design Manual, a turn lane on a roadway with a speed limit ≥ 50 mph must have a minimum of 200' storage and 200' taper.

(2) A left-turn lane is currently provided under existing conditions; therefore, a left-turn lane warrant analysis was not conducted; any improvements to the left-turn lane will be determined by queueing analysis

(3) Left-turn lane does not exist; therefore, a left-turn lane warrant analysis was not conducted

Note that the project is committed to providing a dedicated right-turn lane with 200 feet of taper and 100 feet of storage, consistent with the adjacent left and right-turn lanes along Mountain Road. The proposed taper at Project Driveway #1 does not meet turn lane design standards due to the proximity of the Chickahominy River bridge crossing that is located approximately 400 feet south of the existing median break. An Access Management Exception (AME) form will be submitted for the proposed turn lane length at Project Driveway #1. The turn lane warrant analysis using Appendix F of the VDOT Road Design Manual is included in **Appendix G**.

FIGURE 12: ACCESS MANAGEMENT

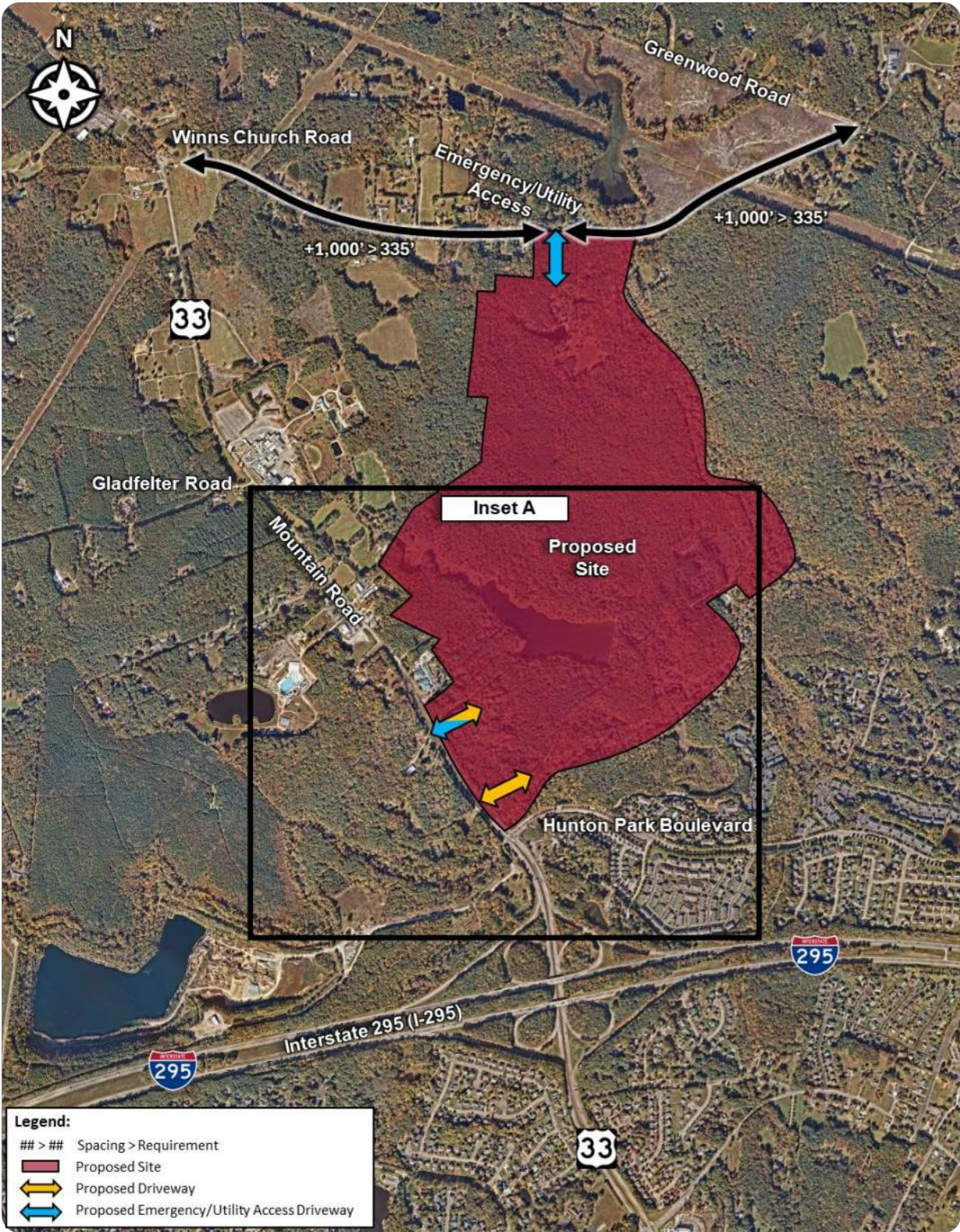
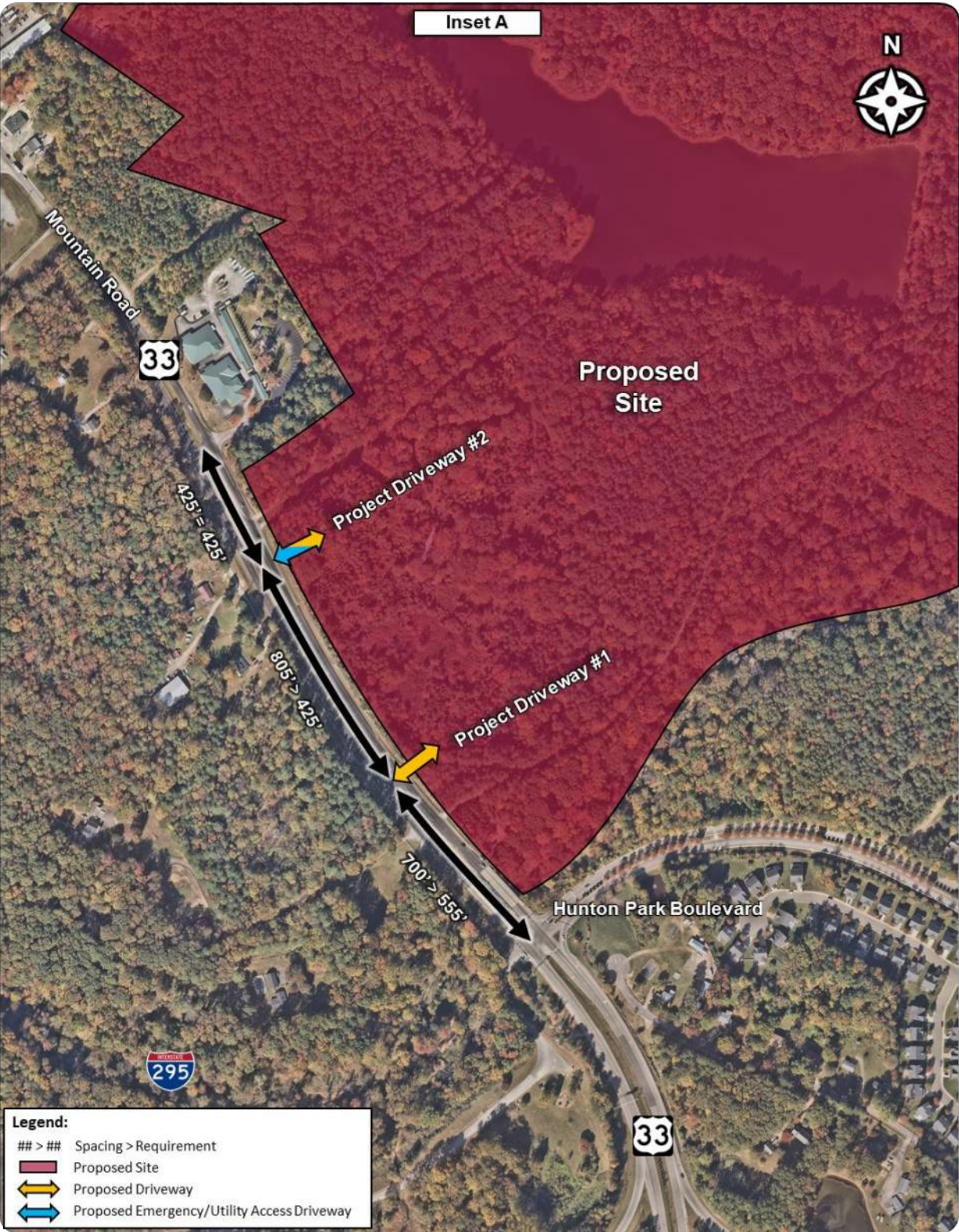


FIGURE 13: ACCESS MANAGEMENT: INSET A



7 Conclusion and Recommendations

The Traffic Impact Analysis (TIA) documented in this report evaluates the traffic impacts of a data center generally located in the northeast quadrant of the intersection of Mountain Road (US-33) and Hunton Park Boulevard in Hanover County, Virginia.

The project proposes to rezone the 434-acre property to permit a 900-megawatt (MW) data center. Access to the proposed site will be provided via one full-access driveway along US-33 at an existing median break and two (2) emergency/utility access driveways; one (right-in/right-out driveway) along US-33 and one (full-access driveway) along Winns Church Road. The emergency/utility access along US-33 will serve as a temporary driveway during construction operations.

Traffic operations were analyzed at the intersections identified below during the AM and PM peak hours using *Synchro 11TM* software for the Existing 2025, No-Build 2034, and Build 2034 conditions. However, at the request of VDOT staff, traffic operations were also analyzed during the construction AM (6:00 – 7:00 AM) and construction PM (3:00 – 4:00 PM) peak hours and include Existing 2025 (Construction Peak), No-Build 2034 (Construction Peak), and Build 2034 (Construction Peak) conditions. The following intersections were identified as the study area intersections:

1. US-33 (Mountain Road) & Hunton Park Boulevard
2. US-33 (Mountain Road) & Gladfelter Road
3. US-33 (Mountain Road) & Winns Church Road
4. Winns Church Road & Greenwood Road

The results of the operational analyses indicate that under the No-Build conditions (both construction peak and commuter peak hours), all signalized intersections and all unsignalized approaches are projected to operate with an overall delay equivalent to LOS D or better, with the exception of the intersection of US-33 and Winns Church Road, which operates at LOS E during the commuter AM and PM peak hours.

The results of the Build 2034 (Construction Peak) traffic operational analysis indicate that all signalized intersections and all unsignalized approaches are projected to operate with delays equivalent to LOS D or better, with the exception of the westbound approach at the intersection of US-33 and Project Driveway #1 during the PM peak hour, which is projected to operate with delays equivalent to LOS F. Note that these results are typical where a low volume, stop-controlled, road intersects a high-volume, free-flow road. On occasions where vehicles are unable to exit the site, or excessive queues are observed on-site, it is expected that the contractor will deploy flaggers to maintain the safety and operations of the intersection.

The results of the Build 2034 traffic operational analysis indicate that all signalized intersections and all unsignalized approaches are projected to operate with an overall delay equivalent to LOS D or better, with the exception of the westbound approach at the intersection of US-33 and Winns Church Road, which operates at LOS E during the commuter AM and PM peak hour. Note that the approach was projected to operate with delays equivalent to LOS E under No-Build conditions, prior to the completion of the project.

Additionally, Highway Capacity Software (HCS7) was used to evaluate the merge and diverge operations of the US-33 and Interstate 295 (I-295) interchange ramps that are anticipated to be used by the proposed development traffic. The results of the highway capacity analysis indicate that under all analysis scenarios, the I-295 on/off-ramps are projected to operate with densities equivalent to LOS C or better under all analysis conditions.

Turn lane warrant analyses were conducted for the 2034 Build (Construction Peak) and 2034 Build conditions at the proposed Project Driveway #1 and Project Driveway #2 using the turn lane warrant standards outlined in Appendix F of the VDOT Road Design Manual.

A northbound right-turn lane with 200 feet of taper and 200 feet of storage is warranted at Project Driveway #1. Note that the project is committed to providing a dedicated right-turn lane with 200 feet of taper and 100 feet of storage, consistent with the adjacent left and right-turn lanes along Mountain Road. The proposed taper at Project Driveway #1 does not meet turn lane design standards due to the proximity of the Chickahominy River bridge crossing that is located approximately 400 feet south of the existing median break. An Access Management Exception (AME) form will be submitted for the proposed turn lane length at Project Driveway #1. Additionally, A northbound right-turn lane with 200 feet of taper and 200 feet of storage is warranted and proposed at Project Driveway #2.

Appendix A: Conceptual Site Plan

key:

- DEVELOPMENT AREA
- NATURAL BUFFER
- PRELIMINARY WETLANDS
- PRELIMINARY RPA
- PROPOSED SWM
- EXISTING POND
- PRIMARY PRIVATE ACCESS ROAD
- SECONDARY PRIVATE ACCESS ROAD



HANOVER INDUSTRIAL PARK

Hanover County, VA



08.20.2025 SCALE: 1" = 300'

Appendix B: Pre-Scope of Work Form

PRE-SCOPE OF WORK MEETING FORM

Information on the Project

Traffic Impact Analysis Base Assumptions

The applicant is responsible for entering the relevant information and submitting the form to VDOT and the locality no less than three (3) business days prior to the meeting. If a form is not received by this deadline, the scope of work meeting may be postponed.

Contact Information

Consultant Name: Tele: E-mail:	David Capparuccini, P.E., PTOE 804-691-8531 david.capparuccini@kimley-horn.com
---	--

Developer/Owner Name: Tele: E-mail:	Grant Polley, P.E. 303-276-7950 Grant.Polley@tract.com
--	--

Project Information

Project Name:	Hanover Industrial Park	Locality/County:	Hanover
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Project Location: (Attach regional and site specific location map)	Southeast quadrant of the intersection of Route 33 (Mountain Road Road) and Winns Church Road. Location map attached.
--	---

Submission Type	Comp Plan ☐	Rezoning ☒	Site Plan ☐	Subd Plat ☐
------------------------	------------------------------------	--	------------------------------------	------------------------------------

Project Description: (Including details on the land use, acreage, phasing, access location, etc. Attach additional sheet if necessary)	The project is proposing to rezone the 434 acre property to permit data center uses consuming 900 MW of power. Access will be provided via one (1) full access driveways along Mountain Road. Additionally, two (2) emergency/utility access driveways will be provided, one along Mountain Road and one along Winns Church Road.
--	---

Proposed Use(s): (Check all that apply; attach additional pages as necessary)	Residential ☐	Commercial ☐	Mixed Use ☐	Other ☒
---	--------------------------------------	-------------------------------------	------------------------------------	---

Residential Uses(s)

Number of Units: _____

ITE LU Code(s): _____

Commercial Use(s)

ITE LU Code(s): See Attached

Square Ft or Other Variable: _____

Other Use(s)

ITE LU Code(s): _____

Independent Variable(s): _____

Total Peak Hour Trip Projection:	Less than 100 ☐	100 – 499 ☒	500 – 999 ☐	1,000 or more ☐
---	--	---	------------------------------------	--

It is important for the applicant to provide sufficient information to county and VDOT staff so that questions regarding geographic scope, alternate methodology, or other issues can be answered at the scoping meeting.

Traffic Impact Analysis Assumptions			
Study Period	Existing Year: 2025	Build-out Year: 2034	Design Year: N/A
Study Area Boundaries (Attach map)	North: See attached map	South:	
	East:	West:	
External Factors That Could Affect Project (Planned road improvements, other nearby developments)	N/A		
Consistency With Comprehensive Plan (Land use, transportation plan)	Project is generally consistent with the Envision Hanover 2023 Comprehensive Plan.		
Available Traffic Data (Historical, forecasts)	Historical AADTs available along Mountain Road, Staples Mill Road, and Winns Church Road.		
Trip Distribution (Attach sketch)	Road Name: See Attached	Road Name:	
	Road Name:	Road Name:	
Annual Vehicle Trip Growth Rate:	1.0% (0.5% P4P)	Peak Period for Study (check all that apply)	☒ AM ☒ PM ☐ SAT
		Peak Hour of the Generator	
Study Intersections and/or Road Segments (Attach additional sheets as necessary)	1.Route 33/Mountain Road and Winns Church Road	6.I-295 eastbound off-ramp to Route 33 northbound	
	2.Route 33/Mountain Road and Gladfelter Road	7.I-295 westbound on-ramp from Route 33 southbound	
	3.Route 33/Mountain Road and Hunton Park Boulevard	8.I-295 eastbound on-ramp from Route 33 southbound	
	4.Winns Church Road and Greenwood Road	9.	
	5.I-295 westbound off-ramp to Route 33 northbound	10.	
Trip Adjustment Factors	Internal allowance: ☐ Yes ☒ No Reduction: ____% trips		Pass-by allowance: ☐ Yes ☒ No Reduction: ____% trips
Software Methodology	☒ Synchro ☐ HCS (v.2000/+) ☐ aaSIDRA ☐ CORSIM ☒ Other HCS7		
Traffic Signal Proposed or Affected (Analysis software to be used, progression speed, cycle length)	Synchro analysis will determine impacts to the signalized intersection of US-33 and Hunton Park Boulevard		

It is important for the applicant to provide sufficient information to county and VDOT staff so that questions regarding geographic scope, alternate methodology, or other issues can be answered at the scoping meeting.

Improvement(s) Assumed or to be Considered	Capacity analyses will evaluate the need for turn lanes at the project driveways.
Background Traffic Studies Considered	N/A
Plan Submission	☐ Master Development Plan (MDP) ☐ Generalized Development Plan (GDP) ☒ Preliminary/Sketch Plan ☐ Other Plan type (Final Site, Subd. Plan)
Additional Issues to be Addressed	☐ Queuing analysis ☐ Actuation/Coordination ☒ Weaving analysis ☒ Merge analysis ☐ Bike/Ped Accommodations ☐ Intersection(s) ☐ TDM Measures ☐ Other _____

NOTES on ASSUMPTIONS: Scenarios that will be considered for the traffic operational analysis include the existing, future No-Build, future No-Build with construction traffic, and future Build with project traffic. Existing conditions represent the roadway network geometry and traffic volumes at the time of this study. No-Build conditions represent the future roadway network prior to the completion of the proposed development but include external developments that are scheduled to be completed by the completion year of the project. Build conditions represent the same inclusions as No-Build but also include the proposed development.

Based on information provided by the applicant, the development is planned to be constructed sequentially, with a peak of two buildings under construction at one time. The anticipated peak construction work force (two buildings under construction) consists of 600-800 employees on site daily, which would equate to roughly 500,000-1,000,000 square feet of data center space under construction. Construction employees would arrive between 4-7 AM and depart between 2-5 PM. Note that the emergency/utility access driveway along Mountain Road is anticipated to serve as a full access driveway onto the site during the construction of the development, post construction the driveway will serve an emergency/utility access only.

The following assumptions were made for the peak construction traffic (two buildings under construction):

- 1,600 Weekday daily trips consisting of one shift that is staggered to occur outside of the typical AM and PM peak hours
- 400 Morning peak hour trips; directional distribution: 90% entering, 10% exiting
- 400 Evening peak hour trips; directional distribution: 10% entering, 90% exiting

It is important for the applicant to provide sufficient information to county and VDOT staff so that questions regarding geographic scope, alternate methodology, or other issues can be answered at the scoping meeting.

Based on this provided information, this traffic assessment proposes using the attached construction traffic trip generation.

As the proposed development is for a data center, the ITE Trip Generation Manual, 11th Edition includes traffic projection information for the land use; however, the trip generation rates were developed based on two (2) surveyed sites for daily trips, six (6) surveyed sites for AM peak hour trips, and five (5) surveyed sites for PM peak trips.

Due to the limited number of surveyed sites, the trip generation rates used are based off the weighted average trip generation rates determined in the AWS Data Center Trip Generation Assessment conducted by Bowman, dated March 2023. The trip generation assessment collected data from six (6) existing sites located in the Commonwealth of Virginia and calculated the weighted average of the trips generated based on campus-size (square footage) and the number of employees.

The following are the weighted average trip generation rates determined by the assessment:

1. 4.24 Daily trips per employee
2. 0.53 Morning peak hour trips per employee
3. 0.17 Evening peak hour trips per employee

Based on this provided information, this traffic assessment proposes using the attached data center trip generation.

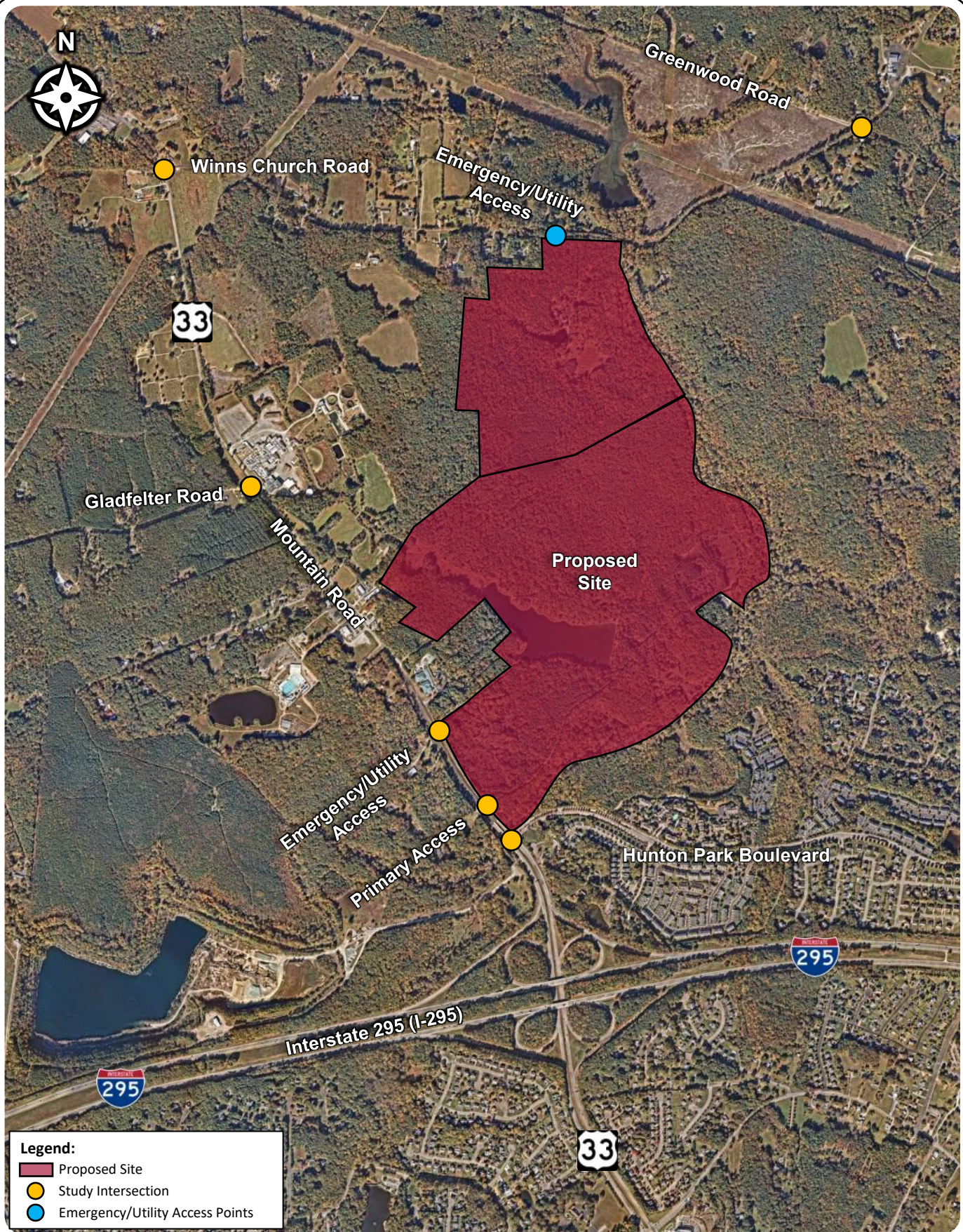
Per the request of VDOT, highway capacity software (HCS7) will be used to conduct a merge, diverge, and weave analysis for the following I-295 interchange facilities:

1. Weave between the eastbound I-295 off-ramp to northbound US-33 and the eastbound I-295 on-ramp from southbound US-33
2. Diverge from westbound I-295 off-ramp to northbound US-33
3. Merge to westbound I-295 on-ramp from southbound US-33

SIGNED: _____ DATE: _____
Applicant or Consultant

PRINT NAME: _____
Applicant or Consultant

It is important for the applicant to provide sufficient information to county and VDOT staff so that questions regarding geographic scope, alternate methodology, or other issues can be answered at the scoping meeting.



Hanover Industrial Construction

600-800 employees per shift (2 buildings under construction)

Anticipated Hourly Arrival/Departure Volumes

Start Time	In	Out	Total	Distribution of Peak Period
4:00 AM	72	8	80	10%
5:00 AM	216	24	240	30%
6:00 AM	360	40	400	50%
7:00 AM	72	8	80	10%
8:00 AM	-	-	-	-
9:00 AM	-	-	-	-
10:00 AM	-	-	-	-
11:00 AM	-	-	-	-
12:00 PM	-	-	-	-
1:00 PM	-	-	-	-
2:00 PM	8	72	80	10%
3:00 PM	40	360	400	50%
4:00 PM	24	216	240	30%
5:00 PM	8	72	80	10%

Morning peak hour directional distribution used for the anticipated trips entering/exiting was assumed to be 90% entering, 10% exiting

Evening peak hour directional distribution used for the anticipated trips entering/exiting was assumed to be 10% entering, 90% exiting

Estimated Number of Employees for Proposed Development

Land Use	Scale	Rate	Estimated # of Employees
Data Center Campus	900 Megawatts (MW)	39 employees per 100 MW	351

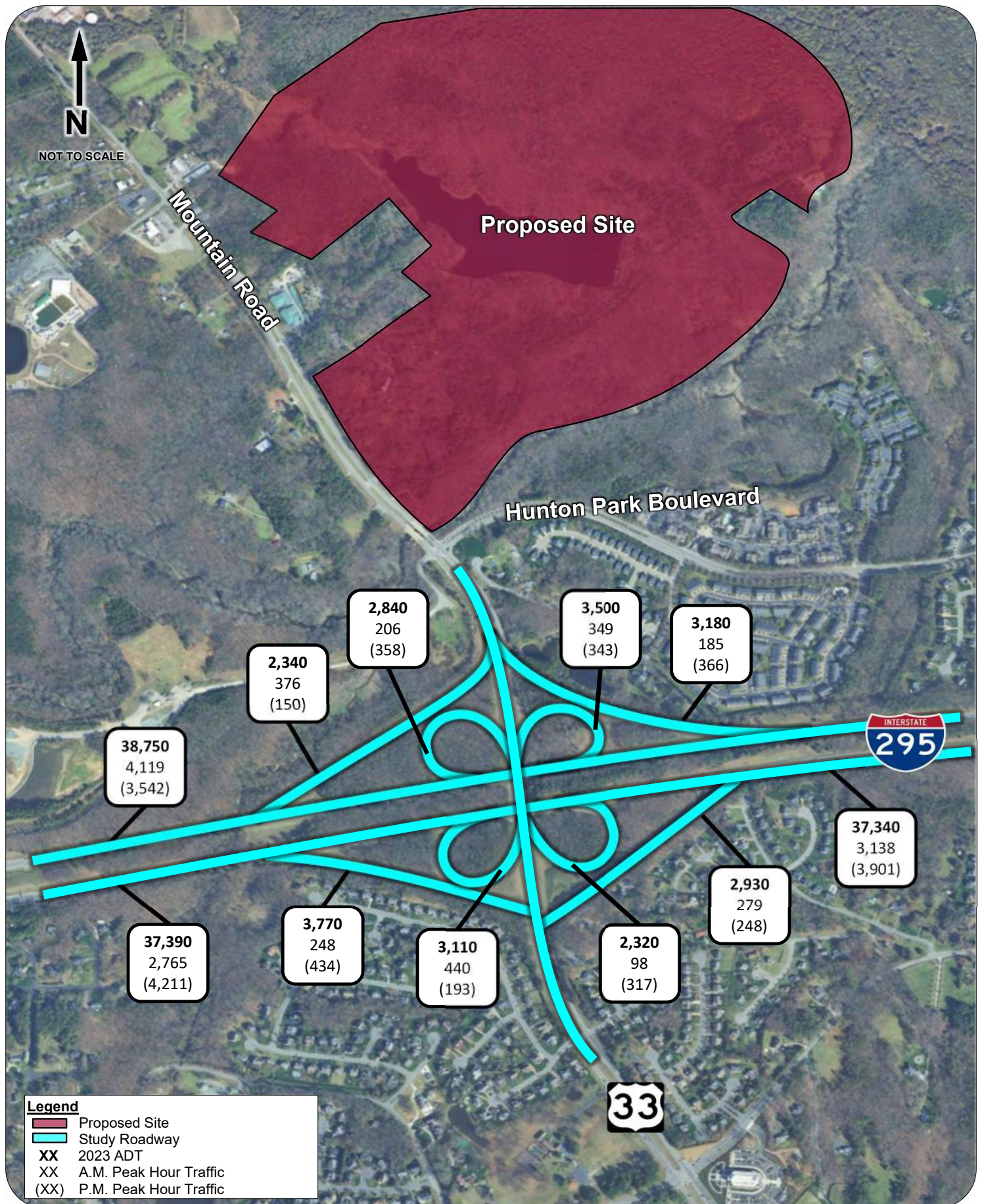
Weighted Average Trip Generation Rates per Bowman Assessment

Scenario	Scale
Weekday Daily	4.24 per employee
Weekday AM peak hour	0.53 per employee
Weekday PM peak hour	0.17 per employee

Trip Generation Calculation

Land Use	Scale	Weekday Daily Trips	Weekday AM Peak Hour			Weekday PM Peak Hour		
			In	Out	Total	In	Out	Total
Data Center Campus	351 employees	1488	102	84	186	18	42	60

*ITE Trip Generation Manual, 11th Edition directional distribution was used for the anticipated trips entering/exiting the site during the AM and PM peak hours

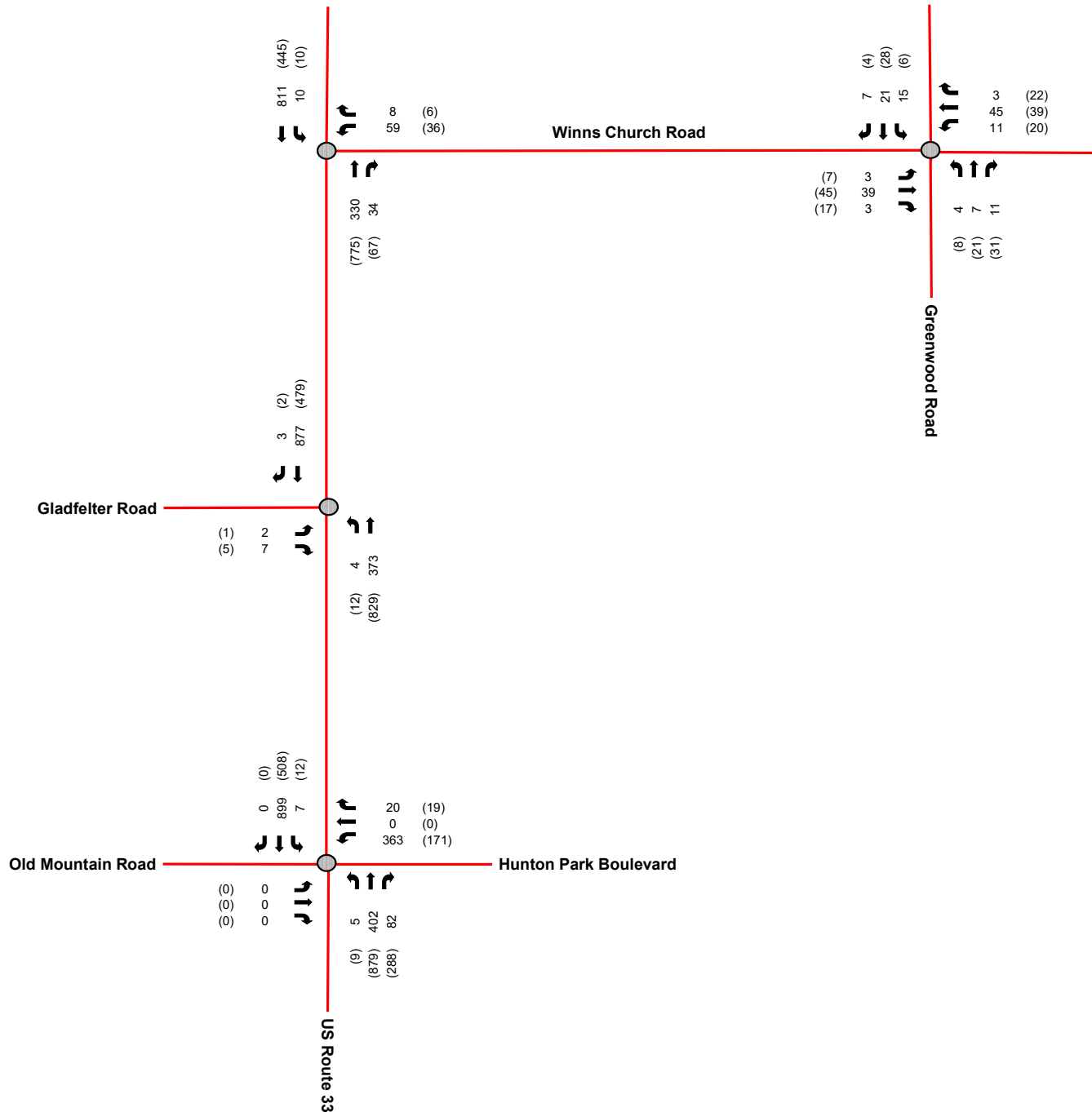




NOT TO SCALE

Legend

- Study Roadway
- Study Intersection
- XX AM Peak Hour Traffic
- (XX) PM Peak Hour Traffic

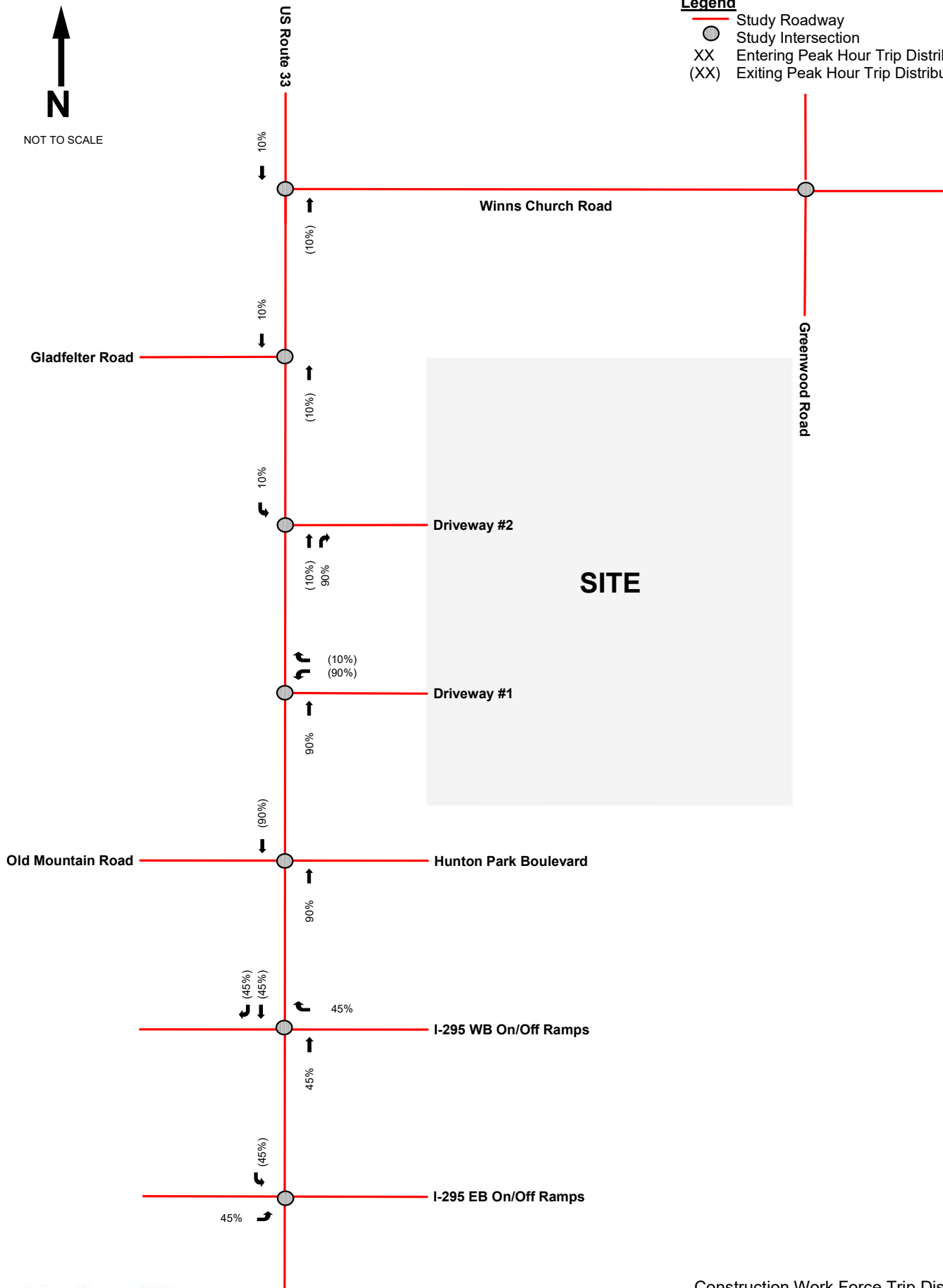




NOT TO SCALE

Legend

-  Study Roadway
-  Study Intersection
- XX Entering Peak Hour Trip Distribution
- (XX) Exiting Peak Hour Trip Distribution

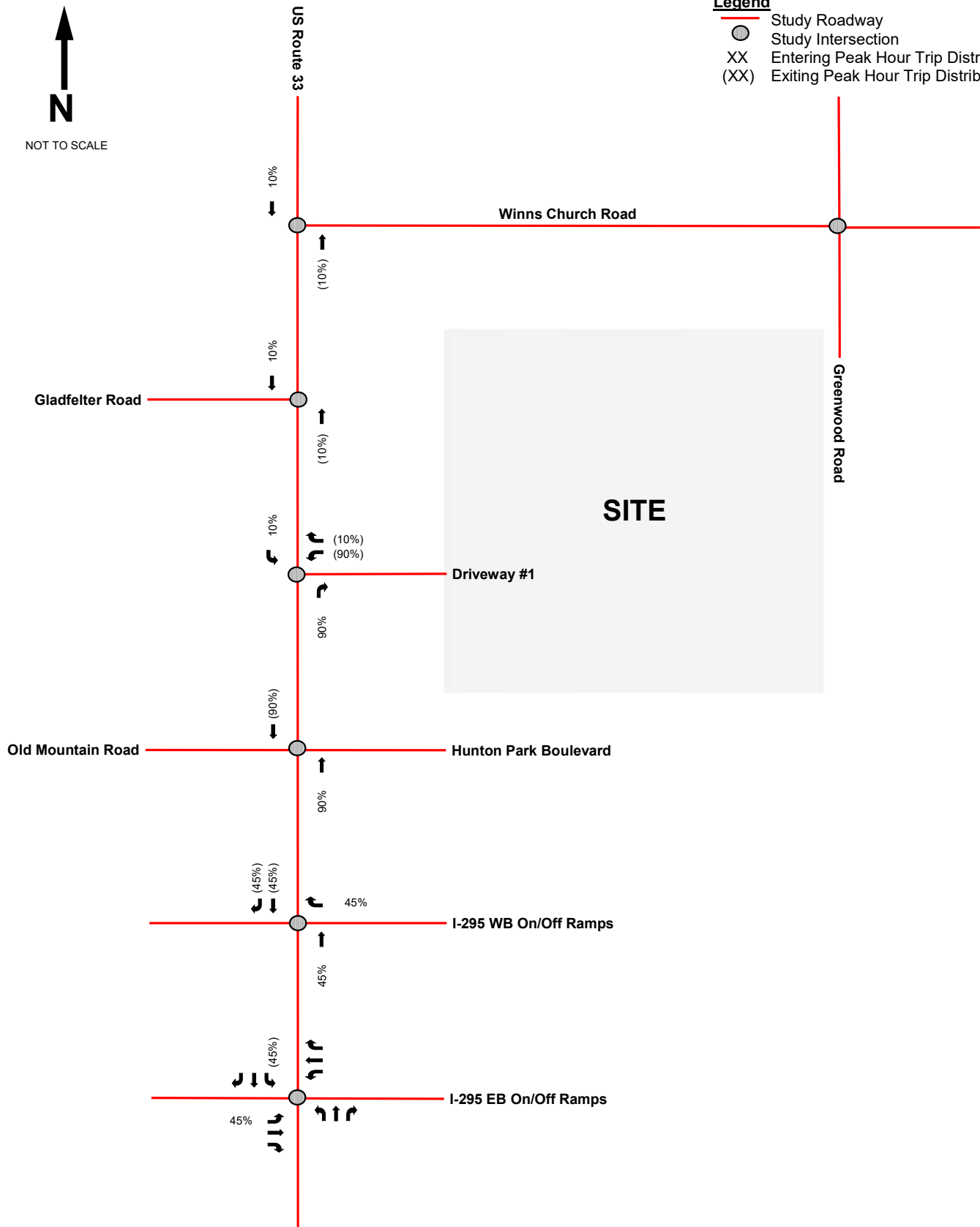




NOT TO SCALE

Legend

- Study Roadway
- Study Intersection
- XX Entering Peak Hour Trip Distribution
- (XX) Exiting Peak Hour Trip Distribution



Appendix C: Traffic Count Data and Signal Timings

National Data & Surveying Services

Intersection Turning Movement Count

Location: US 33/Mountain Rd & Winns Church Rd
City: Glen Allen
Control: 1-Way Stop(WB)

Project ID: 25-250019-001
Date: 5/15/2025

Data - Total

NS/EW Streets:	US 33/Mountain Rd				US 33/Mountain Rd				Winns Church Rd				Winns Church Rd				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	0 NL	1 NT	0 NR	0 NU	0 SL	1 ST	0 SR	0 SU	0 EL	0 ET	0 ER	0 EU	0 WL	1 WT	0 WR	0 WU	
6:00 AM	0	14	0	0	0	44	0	0	0	0	0	0	3	0	2	0	63
6:15 AM	0	48	0	0	0	122	0	0	0	0	0	0	5	0	0	0	175
6:30 AM	0	59	1	0	1	141	0	0	0	0	0	0	5	0	0	0	207
6:45 AM	0	77	2	0	0	163	0	0	0	0	0	0	7	0	0	0	249
7:00 AM	0	79	5	0	1	187	0	0	0	0	0	0	13	0	0	0	285
7:15 AM	0	75	9	0	4	191	0	0	0	0	0	0	16	0	0	0	295
7:30 AM	0	71	5	0	1	193	0	0	0	0	0	0	13	0	3	0	286
7:45 AM	0	88	8	0	2	227	0	0	0	0	0	0	17	0	2	0	344
8:00 AM	0	96	12	0	3	200	0	0	0	0	0	0	13	0	3	0	327
8:15 AM	0	85	8	0	0	173	0	0	0	0	0	0	14	0	2	0	282
8:30 AM	0	86	5	0	1	154	0	0	0	0	0	0	14	0	2	0	262
8:45 AM	0	65	6	0	3	139	0	0	0	0	0	0	12	0	1	0	226
9:00 AM	0	59	8	0	1	102	0	0	0	0	0	0	8	0	2	0	180
9:15 AM	0	76	7	0	1	97	0	0	0	0	0	0	7	0	1	0	189
9:30 AM	0	72	4	0	0	109	0	0	0	0	0	0	11	0	1	0	197
9:45 AM	0	75	7	0	3	103	0	0	0	0	0	0	9	0	1	0	198
TOTAL VOLUMES :	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
APPROACH %'s :	0	1125	87	0	21	2345	0	0	0	0	0	0	167	0	20	0	3765
	0.00%	92.82%	7.18%	0.00%	0.89%	99.11%	0.00%	0.00%	0	0	0	0	89.30%	0.00%	10.70%	0.00%	
PEAK HR :	07:15 AM - 08:15 AM				10	811	0	0	0	0	0	0	59	0	8	0	TOTAL
PEAK HR VOL :	0	330	34	0	10	811	0	0	0	0	0	0	59	0	8	0	1252
PEAK HR FACTOR :	0.000	0.859	0.708	0.000	0.625	0.893	0.000	0.000	0.000	0.000	0.000	0.000	0.868	0.000	0.667	0.000	0.910
	0.843				0.896								0.882				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	0 NL	1 NT	0 NR	0 NU	0 SL	1 ST	0 SR	0 SU	0 EL	0 ET	0 ER	0 EU	0 WL	1 WT	0 WR	0 WU	
3:00 PM	0	110	16	0	3	80	0	0	0	0	0	0	7	0	3	0	219
3:15 PM	0	137	8	0	3	119	0	0	0	0	0	0	7	0	2	0	276
3:30 PM	0	129	14	0	3	87	0	0	0	0	0	0	9	0	2	0	244
3:45 PM	0	150	8	0	4	99	0	0	0	0	0	0	7	0	2	0	270
4:00 PM	0	134	5	0	4	101	0	0	0	0	0	0	6	0	1	0	251
4:15 PM	0	188	17	0	0	135	0	0	0	0	0	0	7	0	1	0	348
4:30 PM	0	180	24	0	2	110	0	0	0	0	0	0	10	0	2	0	328
4:45 PM	0	191	10	0	4	115	0	0	0	0	0	0	16	0	1	0	337
5:00 PM	0	216	16	1	4	85	0	0	0	0	0	0	3	0	2	0	327
5:15 PM	0	175	15	0	4	114	0	0	0	0	0	0	11	0	2	0	321
5:30 PM	0	154	11	0	3	104	0	0	0	0	0	0	9	0	5	0	286
5:45 PM	0	145	5	0	2	118	0	0	0	0	0	0	7	0	3	0	280
6:00 PM	0	152	8	0	2	97	0	0	0	0	0	0	11	0	2	0	272
6:15 PM	0	135	4	1	5	72	0	0	0	0	0	0	7	0	0	0	224
6:30 PM	0	114	8	0	4	88	0	0	0	0	0	0	7	0	1	0	222
6:45 PM	0	76	9	0	1	78	0	0	0	0	0	0	8	0	0	0	172
TOTAL VOLUMES :	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
APPROACH %'s :	0	2386	178	2	48	1602	0	0	0	0	0	0	132	0	29	0	4377
	0.00%	92.99%	6.94%	0.08%	2.91%	97.09%	0.00%	0.00%	0	0	0	0	81.99%	0.00%	18.01%	0.00%	
PEAK HR :	04:15 PM - 05:15 PM				10	445	0	0	0	0	0	0	36	0	6	0	TOTAL
PEAK HR VOL :	0	775	67	1	10	445	0	0	0	0	0	0	36	0	6	0	1340
PEAK HR FACTOR :	0.000	0.897	0.698	0.250	0.625	0.824	0.000	0.000	0.000	0.000	0.000	0.000	0.563	0.000	0.750	0.000	0.963
	0.905				0.843								0.618				

National Data & Surveying Services

Intersection Turning Movement Count

Location: US 33/Mountain Rd & Winns Church Rd
City: Glen Allen
Control: 1-Way Stop(WB)

Project ID: 25-250019-001
Date: 5/15/2025

Data - Cars

NS/EW Streets:	US 33/Mountain Rd				US 33/Mountain Rd				Winns Church Rd				Winns Church Rd				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	0 NL	1 NT	0 NR	0 NU	0 SL	1 ST	0 SR	0 SU	0 EL	0 ET	0 ER	0 EU	0 WL	1 WT	0 WR	0 WU	
6:00 AM	0	12	0	0	0	44	0	0	0	0	0	0	3	0	2	0	61
6:15 AM	0	46	0	0	0	118	0	0	0	0	0	0	5	0	0	0	169
6:30 AM	0	52	1	0	1	139	0	0	0	0	0	0	5	0	0	0	198
6:45 AM	0	73	2	0	0	153	0	0	0	0	0	0	7	0	0	0	235
7:00 AM	0	71	5	0	1	171	0	0	0	0	0	0	12	0	0	0	260
7:15 AM	0	68	7	0	3	184	0	0	0	0	0	0	16	0	0	0	278
7:30 AM	0	64	3	0	1	182	0	0	0	0	0	0	13	0	2	0	265
7:45 AM	0	84	7	0	2	211	0	0	0	0	0	0	16	0	0	0	320
8:00 AM	0	90	12	0	3	184	0	0	0	0	0	0	13	0	2	0	304
8:15 AM	0	77	6	0	0	164	0	0	0	0	0	0	14	0	2	0	263
8:30 AM	0	81	5	0	1	146	0	0	0	0	0	0	14	0	2	0	249
8:45 AM	0	61	6	0	2	132	0	0	0	0	0	0	12	0	1	0	214
9:00 AM	0	59	7	0	1	99	0	0	0	0	0	0	8	0	2	0	176
9:15 AM	0	70	7	0	1	97	0	0	0	0	0	0	7	0	1	0	183
9:30 AM	0	62	4	0	0	106	0	0	0	0	0	0	9	0	1	0	182
9:45 AM	0	67	7	0	3	101	0	0	0	0	0	0	9	0	1	0	188
TOTAL VOLUMES :	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
APPROACH %'s :	0	1037	79	0	19	2231	0	0	0	0	0	0	163	0	16	0	3545
	0.00%	92.92%	7.08%	0.00%	0.84%	99.16%	0.00%	0.00%					91.06%	0.00%	8.94%	0.00%	
PEAK HR :	07:15 AM - 08:15 AM				9	761	0	0	0	0	0	0	58	0	4	0	TOTAL
PEAK HR VOL :	0	306	29	0	9	761	0	0	0	0	0	0	58	0	4	0	1167
PEAK HR FACTOR :	0.000	0.850	0.604	0.000	0.750	0.902	0.000	0.000	0.000	0.000	0.000	0.000	0.906	0.000	0.500	0.000	0.912
	0.821				0.904								0.969				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	0 NL	1 NT	0 NR	0 NU	0 SL	1 ST	0 SR	0 SU	0 EL	0 ET	0 ER	0 EU	0 WL	1 WT	0 WR	0 WU	
3:00 PM	0	99	16	0	3	76	0	0	0	0	0	0	5	0	3	0	202
3:15 PM	0	132	8	0	2	115	0	0	0	0	0	0	7	0	2	0	266
3:30 PM	0	120	13	0	3	81	0	0	0	0	0	0	9	0	2	0	228
3:45 PM	0	144	8	0	4	98	0	0	0	0	0	0	6	0	2	0	262
4:00 PM	0	130	5	0	3	95	0	0	0	0	0	0	6	0	1	0	240
4:15 PM	0	185	15	0	0	130	0	0	0	0	0	0	6	0	1	0	337
4:30 PM	0	179	24	0	2	103	0	0	0	0	0	0	10	0	1	0	319
4:45 PM	0	186	10	0	4	111	0	0	0	0	0	0	16	0	0	0	327
5:00 PM	0	214	16	1	3	83	0	0	0	0	0	0	3	0	2	0	322
5:15 PM	0	170	15	0	4	113	0	0	0	0	0	0	11	0	2	0	315
5:30 PM	0	150	11	0	3	102	0	0	0	0	0	0	9	0	5	0	280
5:45 PM	0	142	5	0	1	116	0	0	0	0	0	0	7	0	3	0	274
6:00 PM	0	150	8	0	2	94	0	0	0	0	0	0	11	0	2	0	267
6:15 PM	0	131	4	1	5	69	0	0	0	0	0	0	7	0	0	0	217
6:30 PM	0	113	8	0	4	87	0	0	0	0	0	0	7	0	1	0	220
6:45 PM	0	73	9	0	1	77	0	0	0	0	0	0	7	0	0	0	167
TOTAL VOLUMES :	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
APPROACH %'s :	0	2318	175	2	44	1550	0	0	0	0	0	0	127	0	27	0	4243
	0.00%	92.91%	7.01%	0.08%	2.76%	97.24%	0.00%	0.00%					82.47%	0.00%	17.53%	0.00%	
PEAK HR :	04:15 PM - 05:15 PM				9	427	0	0	0	0	0	0	35	0	4	0	TOTAL
PEAK HR VOL :	0	764	65	1	9	427	0	0	0	0	0	0	35	0	4	0	1305
PEAK HR FACTOR :	0.000	0.893	0.677	0.250	0.563	0.821	0.000	0.000	0.000	0.000	0.000	0.000	0.547	0.000	0.500	0.000	0.968
	0.898				0.838								0.609				

National Data & Surveying Services

Intersection Turning Movement Count

Location: US 33/Mountain Rd & Winns Church Rd
City: Glen Allen
Control: 1-Way Stop(WB)

Project ID: 25-250019-001
Date: 5/15/2025

Data - HT

NS/EW Streets:	US 33/Mountain Rd				US 33/Mountain Rd				Winns Church Rd				Winns Church Rd				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	0 NL	1 NT	0 NR	0 NU	0 SL	1 ST	0 SR	0 SU	0 EL	0 ET	0 ER	0 EU	0 WL	1 WT	0 WR	0 WU	
6:00 AM	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
6:15 AM	0	2	0	0	0	4	0	0	0	0	0	0	0	0	0	0	6
6:30 AM	0	7	0	0	0	2	0	0	0	0	0	0	0	0	0	0	9
6:45 AM	0	4	0	0	0	10	0	0	0	0	0	0	0	0	0	0	14
7:00 AM	0	8	0	0	0	16	0	0	0	0	0	0	1	0	0	0	25
7:15 AM	0	7	2	0	1	7	0	0	0	0	0	0	0	0	0	0	17
7:30 AM	0	7	2	0	0	11	0	0	0	0	0	0	0	0	1	0	21
7:45 AM	0	4	1	0	0	16	0	0	0	0	0	0	1	0	2	0	24
8:00 AM	0	6	0	0	0	16	0	0	0	0	0	0	0	0	1	0	23
8:15 AM	0	8	2	0	0	9	0	0	0	0	0	0	0	0	1	0	19
8:30 AM	0	5	0	0	0	8	0	0	0	0	0	0	0	0	0	0	13
8:45 AM	0	4	0	0	1	7	0	0	0	0	0	0	0	0	0	0	12
9:00 AM	0	0	1	0	0	3	0	0	0	0	0	0	0	0	0	0	4
9:15 AM	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6
9:30 AM	0	10	0	0	0	3	0	0	0	0	0	0	2	0	0	0	15
9:45 AM	0	8	0	0	0	2	0	0	0	0	0	0	0	0	0	0	10
TOTAL VOLUMES :	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
APPROACH %'s :	0	88	8	0	2	114	0	0	0	0	0	0	4	0	4	0	220
	0.00%	91.67%	8.33%	0.00%	1.72%	98.28%	0.00%	0.00%	0	0	0	0	50.00%	0.00%	50.00%	0.00%	
PEAK HR :	07:15 AM - 08:15 AM																TOTAL
PEAK HR VOL :	0	24	5	0	1	50	0	0	0	0	0	0	1	0	4	0	85
PEAK HR FACTOR :	0.000	0.857	0.625	0.000	0.250	0.781	0.000	0.000	0.000	0.000	0.000	0.000	0.250	0.000	0.500	0.000	0.885
	0.806								0.797				0.417				
PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	0 NL	1 NT	0 NR	0 NU	0 SL	1 ST	0 SR	0 SU	0 EL	0 ET	0 ER	0 EU	0 WL	1 WT	0 WR	0 WU	
3:00 PM	0	11	0	0	0	4	0	0	0	0	0	0	2	0	0	0	17
3:15 PM	0	5	0	0	1	4	0	0	0	0	0	0	0	0	0	0	10
3:30 PM	0	9	1	0	0	6	0	0	0	0	0	0	0	0	0	0	16
3:45 PM	0	6	0	0	0	1	0	0	0	0	0	0	1	0	0	0	8
4:00 PM	0	4	0	0	1	6	0	0	0	0	0	0	0	0	0	0	11
4:15 PM	0	3	2	0	0	5	0	0	0	0	0	0	1	0	0	0	11
4:30 PM	0	1	0	0	0	7	0	0	0	0	0	0	0	0	1	0	9
4:45 PM	0	5	0	0	0	4	0	0	0	0	0	0	0	0	1	0	10
5:00 PM	0	2	0	0	1	2	0	0	0	0	0	0	0	0	0	0	5
5:15 PM	0	5	0	0	0	1	0	0	0	0	0	0	0	0	0	0	6
5:30 PM	0	4	0	0	0	2	0	0	0	0	0	0	0	0	0	0	6
5:45 PM	0	3	0	0	1	2	0	0	0	0	0	0	0	0	0	0	6
6:00 PM	0	2	0	0	0	3	0	0	0	0	0	0	0	0	0	0	5
6:15 PM	0	4	0	0	0	3	0	0	0	0	0	0	0	0	0	0	7
6:30 PM	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	2
6:45 PM	0	3	0	0	0	1	0	0	0	0	0	0	1	0	0	0	5
TOTAL VOLUMES :	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
APPROACH %'s :	0	68	3	0	4	52	0	0	0	0	0	0	5	0	2	0	134
	0.00%	95.77%	4.23%	0.00%	7.14%	92.86%	0.00%	0.00%	0	0	0	0	71.43%	0.00%	28.57%	0.00%	
PEAK HR :	04:15 PM - 05:15 PM																TOTAL
PEAK HR VOL :	0	11	2	0	1	18	0	0	0	0	0	0	1	0	2	0	35
PEAK HR FACTOR :	0.000	0.550	0.250	0.000	0.250	0.643	0.000	0.000	0.000	0.000	0.000	0.000	0.250	0.000	0.500	0.000	0.795
	0.650								0.679				0.750				

National Data & Surveying Services

Intersection Turning Movement Count

Location: US 33/Mountain Rd/Staples Mill Rd & Gladfelter Rd
City: Glen Allen
Control: No Control

Project ID: 25-250019-002
Date: 5/15/2025

Data - Total

NS/EW Streets:	US 33/Mountain Rd/Staples Mill Rd				US 33/Mountain Rd/Staples Mill Rd				Gladfelter Rd				Gladfelter Rd				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	0 NL	1 NT	0 NR	0 NU	0 SL	1 ST	0 SR	0 SU	0 EL	1 ET	0 ER	0 EU	0 WL	0 WT	0 WR	0 WU	
6:00 AM	0	30	0	0	0	72	0	0	0	0	0	0	0	0	0	0	102
6:15 AM	0	45	0	0	0	133	0	0	0	0	1	0	0	0	0	0	179
6:30 AM	0	62	0	0	0	145	0	0	1	0	1	0	0	0	0	0	209
6:45 AM	0	80	0	0	0	176	0	0	0	0	3	0	0	0	0	0	259
7:00 AM	0	82	0	0	0	186	0	0	0	0	1	0	0	0	0	0	269
7:15 AM	2	94	0	0	0	217	0	0	0	0	1	0	0	0	0	0	314
7:30 AM	2	78	0	0	0	206	0	0	1	0	2	0	0	0	0	0	289
7:45 AM	0	90	0	0	0	246	1	0	0	0	1	0	0	0	0	0	338
8:00 AM	0	111	0	0	0	208	2	0	1	0	3	0	0	0	0	0	325
8:15 AM	0	93	0	0	0	186	2	0	3	0	2	0	0	0	0	0	286
8:30 AM	1	88	0	0	0	162	1	0	0	0	2	0	0	0	0	0	254
8:45 AM	1	79	0	0	0	155	1	0	0	0	5	0	0	0	0	0	241
9:00 AM	1	63	0	0	0	107	0	0	1	0	3	0	0	0	0	0	175
9:15 AM	2	88	0	0	0	115	0	0	2	0	2	0	0	0	0	0	209
9:30 AM	0	71	0	0	0	122	0	0	1	0	2	0	0	0	0	0	196
9:45 AM	1	87	0	0	0	111	0	0	1	0	3	0	0	0	0	0	203
TOTAL VOLUMES :	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
APPROACH %'s :	10	1241	0	0	0	2547	7	0	11	0	32	0	0	0	0	0	3848
	0.80%	99.20%	0.00%	0.00%	0.00%	99.73%	0.27%	0.00%	25.58%	0.00%	74.42%	0.00%					
PEAK HR :	07:15 AM - 08:15 AM																TOTAL
PEAK HR VOL :	4	373	0	0	0	877	3	0	2	0	7	0	0	0	0	0	1266
PEAK HR FACTOR :	0.500	0.840	0.000	0.000	0.000	0.891	0.375	0.000	0.500	0.000	0.583	0.000	0.000	0.000	0.000	0.000	0.936
	0.849				0.891				0.563								

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	0 NL	1 NT	0 NR	0 NU	0 SL	1 ST	0 SR	0 SU	0 EL	1 ET	0 ER	0 EU	0 WL	0 WT	0 WR	0 WU	
3:00 PM	4	124	0	0	0	90	1	0	1	0	3	0	0	0	0	0	223
3:15 PM	5	146	0	0	0	129	0	0	0	0	3	0	0	0	0	0	283
3:30 PM	1	147	0	0	0	82	0	0	1	0	2	0	0	0	0	0	233
3:45 PM	2	147	0	0	0	121	0	0	2	0	1	0	0	0	0	0	273
4:00 PM	2	143	0	0	0	110	0	0	0	0	2	0	0	0	0	0	257
4:15 PM	1	204	0	0	0	137	1	0	0	0	2	0	0	0	0	0	345
4:30 PM	1	207	0	0	0	120	1	0	0	0	0	0	0	0	0	0	329
4:45 PM	4	192	0	0	0	131	0	0	0	0	2	0	0	0	0	0	329
5:00 PM	6	226	0	0	0	91	0	0	1	0	1	0	0	0	0	0	325
5:15 PM	2	188	0	0	0	124	0	0	1	0	1	0	0	0	0	0	316
5:30 PM	0	166	0	0	0	120	0	0	1	0	1	0	0	0	0	0	288
5:45 PM	3	150	0	0	0	126	0	0	0	0	6	0	0	0	0	0	285
6:00 PM	4	170	0	0	0	114	0	0	0	0	1	0	0	0	0	0	289
6:15 PM	1	135	0	0	0	74	0	1	0	0	1	0	0	0	0	0	212
6:30 PM	1	117	0	0	0	96	0	0	0	0	0	0	0	0	0	0	214
6:45 PM	3	87	0	0	0	84	0	0	0	0	1	0	0	0	0	0	175
TOTAL VOLUMES :	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
APPROACH %'s :	40	2549	0	0	0	1749	3	1	7	0	27	0	0	0	0	0	4376
	1.54%	98.46%	0.00%	0.00%	0.00%	99.77%	0.17%	0.06%	20.59%	0.00%	79.41%	0.00%					
PEAK HR :	04:15 PM - 05:15 PM																TOTAL
PEAK HR VOL :	12	829	0	0	0	479	2	0	1	0	5	0	0	0	0	0	1328
PEAK HR FACTOR :	0.500	0.917	0.000	0.000	0.000	0.874	0.500	0.000	0.250	0.000	0.625	0.000	0.000	0.000	0.000	0.000	0.962
	0.906				0.871				0.750								

Location: US 33/Mountain Rd/Staples Mill Rd & Gladfelter Rd
City: Glen Allen
Control: No Control

Data - Cars

NS/EW Streets:		US 33/Mountain Rd/Staples Mill Rd				US 33/Mountain Rd/Staples Mill Rd				Gladfelter Rd				Gladfelter Rd					
AM		NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL	
		0 NL	1 NT	0 NR	0 NU	0 SL	1 ST	0 SR	0 SU	0 EL	1 ET	0 ER	0 EU	0 WL	0 WT	0 WR	0 WU		
	6:00 AM	0	26	0	0	0	70	0	0	0	0	0	0	0	0	0	0	96	
	6:15 AM	0	43	0	0	0	129	0	0	0	0	1	0	0	0	0	0	173	
	6:30 AM	0	55	0	0	0	142	0	0	1	0	1	0	0	0	0	0	199	
	6:45 AM	0	75	0	0	0	169	0	0	0	0	3	0	0	0	0	0	247	
	7:00 AM	0	73	0	0	0	175	0	0	0	0	1	0	0	0	0	0	249	
	7:15 AM	2	82	0	0	0	206	0	0	0	0	1	0	0	0	0	0	291	
	7:30 AM	2	71	0	0	0	194	0	0	1	0	2	0	0	0	0	0	270	
	7:45 AM	0	86	0	0	0	229	1	0	0	0	1	0	0	0	0	0	317	
	8:00 AM	0	104	0	0	0	192	1	0	1	0	2	0	0	0	0	0	300	
	8:15 AM	0	84	0	0	0	175	2	0	3	0	2	0	0	0	0	0	266	
	8:30 AM	1	84	0	0	0	155	1	0	0	0	2	0	0	0	0	0	243	
	8:45 AM	1	75	0	0	0	147	1	0	0	0	5	0	0	0	0	0	229	
	9:00 AM	1	61	0	0	0	103	0	0	1	0	3	0	0	0	0	0	169	
	9:15 AM	2	77	0	0	0	114	0	0	2	0	2	0	0	0	0	0	197	
	9:30 AM	0	62	0	0	0	116	0	0	1	0	2	0	0	0	0	0	181	
	9:45 AM	1	75	0	0	0	108	0	0	1	0	3	0	0	0	0	0	188	
TOTAL VOLUMES:		NL 10	NT 1133	NR 0	NU 0	SL 0	ST 2424	SR 6	SU 0	EL 11	ET 31	ER 31	EU 0	WL 0	WT 0	WR 0	WU 0	TOTAL 3615	
APPROACH %'s:		0.87%	99.13%	0.00%	0.00%	0.00%	99.75%	0.25%	0.00%	26.19%	0.00%	73.81%	0.00%						
PEAK HR :		07:15 AM - 08:15 AM																	
PEAK HR VOL :		4	343	0	0	0	821	2	0	2	0	6	0	0	0	0	0	TOTAL 1178	
PEAK HR FACTOR :		0.500	0.825	0.000	0.000	0.000	0.896	0.500	0.000	0.500	0.000	0.750	0.000	0.000	0.000	0.000	0.000	0.929	
		0.834								0.895									
										0.667									

PM		NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND					
		0 NL	1 NT	0 NR	0 NU	0 SL	1 ST	0 SR	0 SU	0 EL	1 ET	0 ER	0 EU	0 WL	0 WT	0 WR	0 WU	TOTAL	
	3:00 PM	4	116	0	0	0	84	1	0	1	0	3	0	0	0	0	0	209	
	3:15 PM	4	140	0	0	0	125	0	0	0	0	3	0	0	0	0	0	272	
	3:30 PM	1	138	0	0	0	76	0	0	1	0	2	0	0	0	0	0	218	
	3:45 PM	2	142	0	0	0	114	0	0	1	0	1	0	0	0	0	0	260	
	4:00 PM	2	138	0	0	0	102	0	0	0	0	2	0	0	0	0	0	244	
	4:15 PM	1	198	0	0	0	132	1	0	0	0	2	0	0	0	0	0	334	
	4:30 PM	1	204	0	0	0	114	0	0	0	0	0	0	0	0	0	0	319	
	4:45 PM	4	184	0	0	0	126	0	0	0	0	2	0	0	0	0	0	316	
	5:00 PM	6	223	0	0	0	91	0	0	1	0	1	0	0	0	0	0	322	
	5:15 PM	2	184	0	0	0	123	0	0	1	0	1	0	0	0	0	0	311	
	5:30 PM	0	161	0	0	0	118	0	0	1	0	1	0	0	0	0	0	281	
	5:45 PM	3	149	0	0	0	124	0	0	0	0	6	0	0	0	0	0	282	
	6:00 PM	4	163	0	0	0	111	0	0	0	0	1	0	0	0	0	0	279	
	6:15 PM	1	132	0	0	0	72	0	1	0	0	1	0	0	0	0	0	207	
	6:30 PM	1	116	0	0	0	95	0	0	0	0	0	0	0	0	0	0	212	
	6:45 PM	3	84	0	0	0	83	0	0	0	0	1	0	0	0	0	0	171	
TOTAL VOLUMES:		NL 39	NT 2472	NR 0	NU 0	SL 0	ST 1690	SR 2	SU 1	EL 6	ET 0	ER 27	EU 0	WL 0	WT 0	WR 0	WU 0	TOTAL 4237	
APPROACH %'s:		1.55%	98.45%	0.00%	0.00%	0.00%	99.82%	0.12%	0.06%	18.18%	0.00%	81.82%	0.00%						
PEAK HR :		04:15 PM - 05:15 PM																	
PEAK HR VOL :		12	809	0	0	0	463	1	0	1	0	5	0	0	0	0	0	TOTAL 1291	
PEAK HR FACTOR :		0.500	0.907	0.000	0.000	0.000	0.877	0.250	0.000	0.250	0.000	0.625	0.000	0.000	0.000	0.000	0.000	0.960	
		0.896								0.872									
										0.750									

National Data & Surveying Services

Intersection Turning Movement Count

Location: US 33/Mountain Rd/Staples Mill Rd & Gladfelter Rd
City: Glen Allen
Control: No Control

Project ID: 25-250019-002
Date: 5/15/2025

Data - HT

NS/EW Streets:	US 33/Mountain Rd/Staples Mill Rd				US 33/Mountain Rd/Staples Mill Rd				Gladfelter Rd				Gladfelter Rd				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	0 NL	1 NT	0 NR	0 NU	0 SL	1 ST	0 SR	0 SU	0 EL	1 ET	0 ER	0 EU	0 WL	0 WT	0 WR	0 WU	
6:00 AM	0	4	0	0	0	2	0	0	0	0	0	0	0	0	0	0	6
6:15 AM	0	2	0	0	0	4	0	0	0	0	0	0	0	0	0	0	6
6:30 AM	0	7	0	0	0	3	0	0	0	0	0	0	0	0	0	0	10
6:45 AM	0	5	0	0	0	7	0	0	0	0	0	0	0	0	0	0	12
7:00 AM	0	9	0	0	0	11	0	0	0	0	0	0	0	0	0	0	20
7:15 AM	0	12	0	0	0	11	0	0	0	0	0	0	0	0	0	0	23
7:30 AM	0	7	0	0	0	12	0	0	0	0	0	0	0	0	0	0	19
7:45 AM	0	4	0	0	0	17	0	0	0	0	0	0	0	0	0	0	21
8:00 AM	0	7	0	0	0	16	1	0	0	0	1	0	0	0	0	0	25
8:15 AM	0	9	0	0	0	11	0	0	0	0	0	0	0	0	0	0	20
8:30 AM	0	4	0	0	0	7	0	0	0	0	0	0	0	0	0	0	11
8:45 AM	0	4	0	0	0	8	0	0	0	0	0	0	0	0	0	0	12
9:00 AM	0	2	0	0	0	4	0	0	0	0	0	0	0	0	0	0	6
9:15 AM	0	11	0	0	0	4	0	0	0	0	0	0	0	0	0	0	12
9:30 AM	0	9	0	0	0	6	0	0	0	0	0	0	0	0	0	0	15
9:45 AM	0	12	0	0	0	3	0	0	0	0	0	0	0	0	0	0	15
TOTAL VOLUMES :	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
APPROACH %'s :	0	108	0	0	0	123	1	0	0	0	1	0	0	0	0	0	233
	0.00%	100.00%	0.00%	0.00%	0.00%	99.19%	0.81%	0.00%	0.00%	0.00%	100.00%	0.00%					
PEAK HR :	07:15 AM - 08:15 AM																TOTAL
PEAK HR VOL :	0	30	0	0	0	56	1	0	0	0	1	0	0	0	0	0	88
PEAK HR FACTOR :	0.000	0.625	0.000	0.000	0.000	0.824	0.250	0.000	0.000	0.000	0.250	0.000	0.000	0.000	0.000	0.000	0.880
	0.625				0.838				0.250								

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	0 NL	1 NT	0 NR	0 NU	0 SL	1 ST	0 SR	0 SU	0 EL	1 ET	0 ER	0 EU	0 WL	0 WT	0 WR	0 WU	
3:00 PM	0	8	0	0	0	6	0	0	0	0	0	0	0	0	0	0	14
3:15 PM	1	6	0	0	0	4	0	0	0	0	0	0	0	0	0	0	11
3:30 PM	0	9	0	0	0	6	0	0	0	0	0	0	0	0	0	0	15
3:45 PM	0	5	0	0	0	7	0	0	1	0	0	0	0	0	0	0	13
4:00 PM	0	5	0	0	0	8	0	0	0	0	0	0	0	0	0	0	13
4:15 PM	0	6	0	0	0	5	0	0	0	0	0	0	0	0	0	0	11
4:30 PM	0	3	0	0	0	6	1	0	0	0	0	0	0	0	0	0	10
4:45 PM	0	8	0	0	0	5	0	0	0	0	0	0	0	0	0	0	13
5:00 PM	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
5:15 PM	0	4	0	0	0	1	0	0	0	0	0	0	0	0	0	0	5
5:30 PM	0	5	0	0	0	2	0	0	0	0	0	0	0	0	0	0	7
5:45 PM	0	1	0	0	0	2	0	0	0	0	0	0	0	0	0	0	3
6:00 PM	0	7	0	0	0	3	0	0	0	0	0	0	0	0	0	0	10
6:15 PM	0	3	0	0	0	2	0	0	0	0	0	0	0	0	0	0	5
6:30 PM	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	2
6:45 PM	0	3	0	0	0	1	0	0	0	0	0	0	0	0	0	0	4
TOTAL VOLUMES :	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
APPROACH %'s :	1	77	0	0	0	59	1	0	1	0	0	0	0	0	0	0	139
	1.28%	98.72%	0.00%	0.00%	0.00%	98.33%	1.67%	0.00%	100.00%	0.00%	0.00%	0.00%					
PEAK HR :	04:15 PM - 05:15 PM																TOTAL
PEAK HR VOL :	0	20	0	0	0	16	1	0	0	0	0	0	0	0	0	0	37
PEAK HR FACTOR :	0.000	0.625	0.000	0.000	0.000	0.667	0.250	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.712
	0.625				0.607												

National Data & Surveying Services

Intersection Turning Movement Count

Location: US 33/Staples Mill Rd & Hunton Park Blvd/Old Mountain Rd/Tidewater Quarries Access None
City: Glen Allen
Control: Signalized

Project ID: 25-250019-003
Date: 5/15/2025

Data - Total

NS/EW Streets:	US 33/Staples Mill Rd				US 33/Staples Mill Rd				Hunton Park Blvd/Old Mountain Rd/Tidewater Quarries Access None				Hunton Park Blvd/Old Mountain Rd/Tidewater Quarries Access None				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	1 NL	2 NT	1 NR	0 NU	1 SL	2 ST	0 SR	0 SU	0 EL	1 ET	0 ER	0 EU	1.5 WL	0.5 WT	1 WR	0 WU	
6:00 AM	1	39	5	0	0	79	0	0	0	0	0	0	22	0	1	0	147
6:15 AM	0	52	1	0	1	123	0	0	0	0	0	0	27	0	1	0	205
6:30 AM	0	71	9	0	1	151	0	0	0	0	0	0	33	0	3	0	268
6:45 AM	0	94	9	1	1	177	0	0	0	0	0	0	33	0	4	0	319
7:00 AM	0	98	12	0	2	188	0	0	0	0	0	0	59	0	0	0	359
7:15 AM	0	94	15	1	1	215	0	0	0	0	0	0	98	0	4	0	428
7:30 AM	1	83	17	0	0	221	0	0	0	0	0	0	97	0	4	0	423
7:45 AM	0	107	28	2	3	246	0	0	0	0	0	0	84	0	8	0	478
8:00 AM	0	118	22	1	3	217	0	0	0	0	0	0	84	0	4	0	449
8:15 AM	0	97	33	3	2	201	0	0	0	0	0	0	76	0	3	0	415
8:30 AM	0	93	20	1	2	183	0	0	0	0	0	0	68	0	5	0	372
8:45 AM	0	88	26	1	1	173	0	0	0	0	0	0	56	0	2	0	347
9:00 AM	1	62	27	1	1	124	0	0	0	0	0	0	40	0	2	0	258
9:15 AM	0	103	28	3	1	110	0	0	0	0	1	0	49	0	1	0	296
9:30 AM	1	71	18	2	1	132	0	0	0	0	0	0	38	0	5	0	268
9:45 AM	0	86	20	2	3	124	0	0	0	0	0	0	42	0	6	0	283
TOTAL VOLUMES :	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
APPROACH %'s :	0.24%	81.29%	17.39%	1.08%	0.86%	99.14%	0.00%	0.00%	0.00%	0.00%	100.00%	0.00%	94.47%	0.00%	5.53%	0.00%	5315
PEAK HR :	07:15 AM - 08:15 AM																TOTAL
PEAK HR VOL :	1	402	82	4	7	899	0	0	0	0	0	0	363	0	20	0	1778
PEAK HR FACTOR :	0.250	0.852	0.732	0.500	0.583	0.914	0.000	0.000	0.000	0.000	0.000	0.000	0.926	0.000	0.625	0.000	0.930
	0.867				0.910								0.939				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	1 NL	2 NT	1 NR	0 NU	1 SL	2 ST	0 SR	0 SU	0 EL	1 ET	0 ER	0 EU	1.5 WL	0.5 WT	1 WR	0 WU	
3:00 PM	0	137	37	1	3	93	0	0	0	0	1	0	28	0	3	0	303
3:15 PM	0	135	39	0	5	123	0	0	0	0	1	0	37	0	2	0	342
3:30 PM	0	162	53	4	3	99	0	0	0	0	0	0	31	0	3	0	355
3:45 PM	0	149	48	1	3	124	0	0	0	0	2	0	36	0	2	0	365
4:00 PM	0	157	61	2	6	104	0	0	0	0	1	0	41	0	1	0	373
4:15 PM	0	206	70	2	3	140	0	0	0	0	0	0	32	0	3	0	456
4:30 PM	0	212	66	1	3	121	0	0	0	0	0	0	37	0	4	0	444
4:45 PM	0	244	76	2	3	145	0	0	0	0	0	0	54	0	5	0	529
5:00 PM	0	217	76	4	3	102	0	0	0	0	0	0	48	0	7	0	457
5:15 PM	0	198	82	1	4	134	0	0	0	0	0	0	49	0	6	0	474
5:30 PM	0	188	78	4	5	125	0	0	0	0	0	0	63	0	4	0	467
5:45 PM	0	170	81	2	3	135	0	1	0	0	0	0	53	0	4	0	449
6:00 PM	0	192	82	0	5	118	0	0	0	0	0	0	34	0	3	0	434
6:15 PM	0	150	58	3	4	93	0	0	0	0	0	0	51	0	3	0	362
6:30 PM	0	122	50	1	4	85	0	0	0	0	0	0	51	0	4	0	317
6:45 PM	0	99	56	3	3	87	0	0	0	0	0	0	31	0	3	0	282
TOTAL VOLUMES :	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
APPROACH %'s :	0.00%	72.40%	26.78%	0.82%	3.18%	96.77%	0.00%	0.05%	0.00%	0.00%	100.00%	0.00%	92.22%	0.00%	7.78%	0.00%	6409
PEAK HR :	04:45 PM - 05:45 PM																TOTAL
PEAK HR VOL :	0	847	312	11	15	506	0	0	0	0	0	0	214	0	22	0	1927
PEAK HR FACTOR :	0.000	0.868	0.951	0.688	0.750	0.872	0.000	0.000	0.000	0.000	0.000	0.000	0.849	0.000	0.786	0.000	0.911
	0.908				0.880								0.881				

National Data & Surveying Services

Intersection Turning Movement Count

Location: US 33/Staples Mill Rd & Hunton Park Blvd/Old Mountain Rd/Tidewater Quarries Access None
City: Glen Allen
Control: Signalized

Project ID: 25-250019-003
Date: 5/15/2025

Data - Cars

NS/EW Streets:	US 33/Staples Mill Rd				US 33/Staples Mill Rd				Hunton Park Blvd/Old Mountain Rd/Tidewater Quarries Access None				Hunton Park Blvd/Old Mountain Rd/Tidewater Quarries Access None				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	1 NL	2 NT	1 NR	0 NU	1 SL	2 ST	0 SR	0 SU	0 EL	1 ET	0 ER	0 EU	1.5 WL	0.5 WT	1 WR	0 WU	
6:00 AM	1	35	5	0	0	77	0	0	0	0	0	0	22	0	1	0	141
6:15 AM	0	51	1	0	1	120	0	0	0	0	0	0	26	0	1	0	200
6:30 AM	0	65	9	0	1	146	0	0	0	0	0	0	33	0	3	0	257
6:45 AM	0	89	8	0	1	172	0	0	0	0	0	0	33	0	4	0	307
7:00 AM	0	89	9	0	2	175	0	0	0	0	0	0	58	0	0	0	333
7:15 AM	0	84	15	1	1	204	0	0	0	0	0	0	94	0	4	0	403
7:30 AM	1	75	17	0	0	209	0	0	0	0	0	0	97	0	4	0	403
7:45 AM	0	102	27	2	3	232	0	0	0	0	0	0	83	0	8	0	457
8:00 AM	0	110	18	1	3	199	0	0	0	0	0	0	80	0	4	0	415
8:15 AM	0	87	31	3	2	189	0	0	0	0	0	0	75	0	3	0	390
8:30 AM	0	87	19	1	2	177	0	0	0	0	0	0	65	0	5	0	356
8:45 AM	0	83	25	1	1	163	0	0	0	0	0	0	56	0	2	0	331
9:00 AM	0	60	27	1	1	119	0	0	0	0	0	0	40	0	2	0	250
9:15 AM	0	92	27	3	1	109	0	0	0	0	0	0	48	0	1	0	281
9:30 AM	1	62	18	2	1	126	0	0	0	0	0	0	38	0	5	0	253
9:45 AM	0	75	20	2	3	120	0	0	0	0	0	0	42	0	6	0	268
TOTAL VOLUMES :	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
APPROACH %'s :	0.19%	80.80%	17.90%	1.10%	0.90%	99.10%	0.00%	0.00%	0	0	0	0	890	0	53	0	5045
PEAK HR :	07:15 AM - 08:15 AM																TOTAL
PEAK HR VOL :	1	371	77	4	7	844	0	0	0	0	0	0	354	0	20	0	1678
PEAK HR FACTOR :	0.250	0.843	0.713	0.500	0.583	0.909	0.000	0.000	0.000	0.000	0.000	0.000	0.912	0.000	0.625	0.000	0.918
	0.865				0.905								0.926				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	1 NL	2 NT	1 NR	0 NU	1 SL	2 ST	0 SR	0 SU	0 EL	1 ET	0 ER	0 EU	1.5 WL	0.5 WT	1 WR	0 WU	
3:00 PM	0	131	36	1	3	88	0	0	0	0	1	0	28	0	2	0	290
3:15 PM	0	130	39	0	4	121	0	0	0	0	1	0	36	0	2	0	333
3:30 PM	0	155	52	4	3	93	0	0	0	0	0	0	31	0	2	0	340
3:45 PM	0	143	47	1	3	117	0	0	0	0	2	0	35	0	2	0	350
4:00 PM	0	149	58	2	5	97	0	0	0	0	1	0	40	0	1	0	353
4:15 PM	0	201	69	1	3	135	0	0	0	0	0	0	30	0	3	0	442
4:30 PM	0	209	65	1	3	115	0	0	0	0	0	0	35	0	4	0	432
4:45 PM	0	237	76	2	2	142	0	0	0	0	0	0	54	0	5	0	518
5:00 PM	0	211	75	4	3	99	0	0	0	0	0	0	45	0	7	0	444
5:15 PM	0	195	81	1	4	133	0	0	0	0	0	0	49	0	6	0	469
5:30 PM	0	181	78	4	5	122	0	0	0	0	0	0	63	0	4	0	457
5:45 PM	0	169	81	2	3	133	0	1	0	0	0	0	52	0	4	0	445
6:00 PM	0	186	82	0	5	117	0	0	0	0	0	0	34	0	3	0	427
6:15 PM	0	147	58	3	4	91	0	0	0	0	0	0	51	0	3	0	357
6:30 PM	0	121	50	1	4	84	0	0	0	0	0	0	50	0	4	0	314
6:45 PM	0	95	56	3	3	86	0	0	0	0	0	0	30	0	3	0	276
TOTAL VOLUMES :	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
APPROACH %'s :	0.00%	72.03%	27.16%	0.81%	3.11%	96.83%	0.00%	0.05%	0.00%	0.00%	100.00%	0.00%	92.34%	0.00%	7.66%	0.00%	6247
PEAK HR :	04:45 PM - 05:45 PM																TOTAL
PEAK HR VOL :	0	824	310	11	14	496	0	0	0	0	0	0	211	0	22	0	1888
PEAK HR FACTOR :	0.000	0.869	0.957	0.688	0.700	0.873	0.000	0.000	0.000	0.000	0.000	0.000	0.837	0.000	0.786	0.000	0.911
	0.909				0.885								0.869				

National Data & Surveying Services

Intersection Turning Movement Count

Location: US 33/Staples Mill Rd & Hunton Park Blvd/Old Mountain Rd/Tidewater Quarries Access None
City: Glen Allen
Control: Signalized

Project ID: 25-250019-003
Date: 5/15/2025

Data - HT

NS/EW Streets:	US 33/Staples Mill Rd				US 33/Staples Mill Rd				Hunton Park Blvd/Old Mountain Rd/Tidewater Quarries Access None				Hunton Park Blvd/Old Mountain Rd/Tidewater Quarries Access None				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	1 NL	2 NT	1 NR	0 NU	1 SL	2 ST	0 SR	0 SU	0 EL	1 ET	0 ER	0 EU	1.5 WL	0.5 WT	1 WR	0 WU	
6:00 AM	0	4	0	0	0	2	0	0	0	0	0	0	0	0	0	0	6
6:15 AM	0	1	0	0	0	3	0	0	0	0	0	0	1	0	0	0	5
6:30 AM	0	6	0	0	0	5	0	0	0	0	0	0	0	0	0	0	11
6:45 AM	0	5	1	1	0	5	0	0	0	0	0	0	0	0	0	0	12
7:00 AM	0	9	3	0	0	13	0	0	0	0	0	0	1	0	0	0	26
7:15 AM	0	10	0	0	0	11	0	0	0	0	0	0	4	0	0	0	25
7:30 AM	0	8	0	0	0	12	0	0	0	0	0	0	0	0	0	0	20
7:45 AM	0	5	1	0	0	14	0	0	0	0	0	0	1	0	0	0	21
8:00 AM	0	8	4	0	0	18	0	0	0	0	0	0	4	0	0	0	34
8:15 AM	0	10	2	0	0	12	0	0	0	0	0	0	1	0	0	0	25
8:30 AM	0	6	1	0	0	6	0	0	0	0	0	0	3	0	0	0	16
8:45 AM	0	5	1	0	0	10	0	0	0	0	0	0	0	0	0	0	16
9:00 AM	1	2	0	0	0	5	0	0	0	0	0	0	0	0	0	0	8
9:15 AM	0	11	1	0	0	1	0	0	0	0	1	0	1	0	0	0	15
9:30 AM	0	9	0	0	0	6	0	0	0	0	0	0	0	0	0	0	15
9:45 AM	0	11	0	0	0	4	0	0	0	0	0	0	0	0	0	0	15
TOTAL VOLUMES :	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
APPROACH %'s :	0.79%	87.30%	11.11%	0.79%	0.00%	100.00%	0.00%	0.00%	0.00%	0.00%	100.00%	0.00%	100.00%	0.00%	0.00%	0.00%	270
PEAK HR :	07:15 AM - 08:15 AM																TOTAL
PEAK HR VOL :	0	31	5	0	0	55	0	0	0	0	0	0	9	0	0	0	100
PEAK HR FACTOR :	0.000	0.775	0.313	0.000	0.000	0.764	0.000	0.000	0.000	0.000	0.000	0.000	0.563	0.000	0.000	0.000	0.735
	0.750				0.764								0.563				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	1 NL	2 NT	1 NR	0 NU	1 SL	2 ST	0 SR	0 SU	0 EL	1 ET	0 ER	0 EU	1.5 WL	0.5 WT	1 WR	0 WU	
3:00 PM	0	6	1	0	0	5	0	0	0	0	0	0	0	0	1	0	13
3:15 PM	0	5	0	0	1	2	0	0	0	0	0	0	1	0	0	0	9
3:30 PM	0	7	1	0	0	6	0	0	0	0	0	0	0	0	1	0	15
3:45 PM	0	6	1	0	0	7	0	0	0	0	0	0	1	0	0	0	15
4:00 PM	0	8	3	0	1	7	0	0	0	0	0	0	1	0	0	0	20
4:15 PM	0	5	1	1	0	5	0	0	0	0	0	0	2	0	0	0	14
4:30 PM	0	3	1	0	0	6	0	0	0	0	0	0	2	0	0	0	12
4:45 PM	0	7	0	0	1	3	0	0	0	0	0	0	0	0	0	0	11
5:00 PM	0	6	1	0	0	3	0	0	0	0	0	0	3	0	0	0	13
5:15 PM	0	3	1	0	0	1	0	0	0	0	0	0	0	0	0	0	5
5:30 PM	0	7	0	0	0	3	0	0	0	0	0	0	0	0	0	0	10
5:45 PM	0	1	0	0	0	2	0	0	0	0	0	0	1	0	0	0	4
6:00 PM	0	6	0	0	0	1	0	0	0	0	0	0	0	0	0	0	7
6:15 PM	0	3	0	0	0	2	0	0	0	0	0	0	0	0	0	0	5
6:30 PM	0	1	0	0	0	1	0	0	0	0	0	0	1	0	0	0	3
6:45 PM	0	4	0	0	0	1	0	0	0	0	0	0	1	0	0	0	6
TOTAL VOLUMES :	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
APPROACH %'s :	0.00%	87.64%	11.24%	1.12%	5.17%	94.83%	0.00%	0.00%	0	0	0	0	86.67%	0.00%	13.33%	0.00%	162
PEAK HR :	04:45 PM - 05:45 PM																TOTAL
PEAK HR VOL :	0	23	2	0	1	10	0	0	0	0	0	0	3	0	0	0	39
PEAK HR FACTOR :	0.000	0.821	0.500	0.000	0.250	0.833	0.000	0.000	0.000	0.000	0.000	0.000	0.250	0.000	0.000	0.000	0.750
	0.893				0.688								0.250				

National Data & Surveying Services

Intersection Turning Movement Count

Location: SR 625/Greenwood Rd & Winns Church Rd
City: Glen Allen
Control: 2-Way Stop(NB/SB)

Project ID: 25-250019-004
Date: 5/15/2025

Data - Total

NS/EW Streets:	SR 625/Greenwood Rd				SR 625/Greenwood Rd				Winns Church Rd				Winns Church Rd				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	0 NL	1 NT	0 NR	0 NU	0 SL	1 ST	0 SR	0 SU	0 EL	1 ET	0 ER	0 EU	0 WL	1 WT	0 WR	0 WU	
6:00 AM	2	0	1	0	1	4	0	0	0	2	0	0	0	3	0	0	13
6:15 AM	0	0	2	0	0	3	1	0	0	2	0	0	1	4	1	0	14
6:30 AM	0	1	1	0	3	3	1	0	0	1	1	0	6	2	0	0	19
6:45 AM	1	1	3	0	1	5	0	0	0	1	0	0	4	4	0	0	20
7:00 AM	2	2	2	0	7	6	3	0	0	6	0	0	4	7	0	0	39
7:15 AM	0	2	2	0	4	7	2	0	0	13	0	0	1	9	0	0	40
7:30 AM	0	1	6	0	1	7	3	0	2	5	0	0	3	12	1	0	41
7:45 AM	0	2	3	0	5	3	2	0	0	10	1	0	3	15	0	0	44
8:00 AM	4	2	0	0	5	4	0	0	1	11	2	0	4	9	2	0	44
8:15 AM	2	3	3	0	2	2	1	1	0	9	1	0	2	13	1	0	40
8:30 AM	0	3	2	0	3	5	4	0	0	1	1	0	1	10	1	0	31
8:45 AM	0	3	3	0	1	5	2	0	1	9	1	1	1	7	0	0	34
9:00 AM	0	3	0	0	5	3	2	0	0	7	1	0	0	7	1	0	29
9:15 AM	1	1	0	0	5	4	1	0	1	4	3	0	1	8	1	0	30
9:30 AM	3	3	1	0	1	2	1	0	0	0	2	0	0	5	0	0	18
9:45 AM	0	2	5	0	3	2	1	0	0	5	2	0	1	8	0	0	29
TOTAL VOLUMES :	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
APPROACH %'s :	19.23%	37.18%	43.59%	0.00%	34.31%	47.45%	17.52%	0.73%	4.67%	80.37%	14.02%	0.93%	19.63%	75.46%	4.91%	0.00%	485
PEAK HR :	07:30 AM - 08:30 AM																TOTAL
PEAK HR VOL :	6	8	12	0	13	16	6	1	3	35	4	0	12	49	4	0	169
PEAK HR FACTOR :	0.375	0.667	0.500	0.000	0.650	0.571	0.500	0.250	0.375	0.795	0.500	0.000	0.750	0.817	0.500	0.000	0.960
	0.813				0.818				0.750				0.903				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	0 NL	1 NT	0 NR	0 NU	0 SL	1 ST	0 SR	0 SU	0 EL	1 ET	0 ER	0 EU	0 WL	1 WT	0 WR	0 WU	
3:00 PM	2	6	4	0	0	3	0	0	3	11	3	0	1	7	1	0	41
3:15 PM	0	4	2	0	3	4	1	0	1	7	1	0	2	7	5	0	37
3:30 PM	2	5	4	0	3	6	1	0	0	11	3	0	3	9	4	0	51
3:45 PM	0	4	6	0	3	4	0	0	3	9	1	0	1	6	4	0	41
4:00 PM	1	8	8	0	2	10	2	0	2	5	0	0	5	6	4	0	53
4:15 PM	1	6	7	0	2	6	2	0	3	8	4	0	6	10	9	0	64
4:30 PM	2	4	11	0	2	7	1	0	3	10	3	0	5	6	3	0	57
4:45 PM	3	3	7	0	1	4	1	0	0	14	4	0	4	14	5	0	60
5:00 PM	2	8	6	0	1	11	0	0	1	13	6	0	5	9	5	0	67
5:15 PM	3	13	4	0	2	3	0	0	0	14	2	0	4	9	1	0	55
5:30 PM	1	8	2	0	1	6	2	0	2	10	4	0	9	7	0	0	52
5:45 PM	3	4	4	0	4	9	2	0	1	5	2	0	2	10	2	0	48
6:00 PM	0	8	6	0	1	6	2	0	1	8	3	0	2	6	6	0	49
6:15 PM	0	5	2	0	3	5	2	0	0	6	2	0	5	4	2	0	36
6:30 PM	2	4	1	0	0	6	0	0	0	8	5	0	2	6	1	0	35
6:45 PM	3	2	2	0	2	5	1	0	1	7	2	0	2	10	3	0	40
TOTAL VOLUMES :	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
APPROACH %'s :	12.95%	47.67%	39.38%	0.00%	21.13%	66.90%	11.97%	0.00%	9.91%	68.87%	21.23%	0.00%	24.27%	52.72%	23.01%	0.00%	786
PEAK HR :	04:15 PM - 05:15 PM																TOTAL
PEAK HR VOL :	8	21	31	0	6	28	4	0	7	45	17	0	20	39	22	0	248
PEAK HR FACTOR :	0.667	0.656	0.705	0.000	0.750	0.636	0.500	0.000	0.583	0.804	0.708	0.000	0.833	0.696	0.611	0.000	0.925
	0.882				0.792				0.863				0.810				

National Data & Surveying Services

Intersection Turning Movement Count

Location: SR 625/Greenwood Rd & Winns Church Rd
City: Glen Allen
Control: 2-Way Stop(NB/SB)

Project ID: 25-250019-004
Date: 5/15/2025

Data - Cars

NS/EW Streets:	SR 625/Greenwood Rd				SR 625/Greenwood Rd				Winns Church Rd				Winns Church Rd				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	0 NL	1 NT	0 NR	0 NU	0 SL	1 ST	0 SR	0 SU	0 EL	1 ET	0 ER	0 EU	0 WL	1 WT	0 WR	0 WU	
6:00 AM	2	0	1	0	1	4	0	0	0	2	0	0	0	3	0	0	13
6:15 AM	0	0	2	0	0	3	1	0	0	2	0	0	1	4	1	0	14
6:30 AM	0	1	1	0	3	3	1	0	0	1	1	0	6	2	0	0	19
6:45 AM	1	1	3	0	1	5	0	0	0	1	0	0	4	4	0	0	20
7:00 AM	2	1	2	0	7	6	3	0	0	6	0	0	3	7	0	0	37
7:15 AM	0	2	2	0	4	6	2	0	0	10	0	0	1	8	0	0	35
7:30 AM	0	1	6	0	1	7	3	0	0	5	0	0	3	9	1	0	36
7:45 AM	0	1	3	0	5	3	2	0	0	9	1	0	3	13	0	0	40
8:00 AM	4	2	0	0	4	4	0	0	1	10	2	0	4	9	2	0	42
8:15 AM	2	1	3	0	2	1	1	1	0	8	0	0	2	13	0	0	34
8:30 AM	0	3	2	0	3	5	4	0	0	1	1	0	1	10	1	0	31
8:45 AM	0	3	3	0	0	4	2	0	1	9	0	1	1	7	0	0	31
9:00 AM	0	2	0	0	5	3	2	0	0	6	1	0	0	7	1	0	27
9:15 AM	1	1	0	0	5	3	1	0	1	4	3	0	1	6	1	0	27
9:30 AM	3	3	1	0	1	2	1	0	0	0	2	0	0	5	0	0	18
9:45 AM	0	2	4	0	3	2	1	0	0	5	2	0	1	8	0	0	28
TOTAL VOLUMES :	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
APPROACH %'s :	15	24	33	0	45	61	24	1	3	79	13	1	31	115	7	0	452
	20.83%	33.33%	45.83%	0.00%	34.35%	46.56%	18.32%	0.76%	3.13%	82.29%	13.54%	1.04%	20.26%	75.16%	4.58%	0.00%	
PEAK HR :	07:30 AM - 08:30 AM																TOTAL
PEAK HR VOL :	6	5	12	0	12	15	6	1	1	32	3	0	12	44	3	0	152
PEAK HR FACTOR :	0.375	0.625	0.500	0.000	0.600	0.536	0.500	0.250	0.250	0.800	0.375	0.000	0.750	0.846	0.375	0.000	0.905
	0.821				0.773				0.692				0.922				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	0 NL	1 NT	0 NR	0 NU	0 SL	1 ST	0 SR	0 SU	0 EL	1 ET	0 ER	0 EU	0 WL	1 WT	0 WR	0 WU	
3:00 PM	2	6	4	0	0	3	0	0	3	11	3	0	1	5	1	0	39
3:15 PM	0	4	2	0	3	4	1	0	1	6	1	0	2	7	5	0	36
3:30 PM	2	5	4	0	3	6	1	0	0	10	3	0	3	9	4	0	50
3:45 PM	0	4	6	0	3	4	0	0	3	7	1	0	1	5	4	0	38
4:00 PM	1	8	8	0	2	9	1	0	1	5	0	0	5	6	3	0	49
4:15 PM	1	6	5	0	2	5	2	0	3	8	3	0	6	10	8	0	59
4:30 PM	1	4	11	0	2	7	1	0	3	9	3	0	4	6	3	0	54
4:45 PM	2	3	7	0	1	4	1	0	0	14	4	0	4	14	5	0	59
5:00 PM	2	8	6	0	1	7	0	0	1	13	5	0	5	9	5	0	62
5:15 PM	3	13	4	0	1	3	0	0	0	14	2	0	4	8	1	0	53
5:30 PM	1	8	2	0	1	6	2	0	2	10	4	0	8	7	0	0	51
5:45 PM	3	3	4	0	4	9	2	0	1	5	1	0	2	10	2	0	46
6:00 PM	0	7	6	0	1	5	2	0	1	8	3	0	2	6	6	0	47
6:15 PM	0	4	2	0	2	5	2	0	0	6	2	0	5	4	2	0	34
6:30 PM	2	4	1	0	0	6	0	0	0	8	5	0	2	6	1	0	35
6:45 PM	3	2	2	0	2	5	1	0	1	7	2	0	2	9	3	0	39
TOTAL VOLUMES :	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
APPROACH %'s :	23	89	74	0	28	88	16	0	20	141	42	0	56	121	53	0	751
	12.37%	47.85%	39.78%	0.00%	21.21%	66.67%	12.12%	0.00%	9.85%	69.46%	20.69%	0.00%	24.35%	52.61%	23.04%	0.00%	
PEAK HR :	04:15 PM - 05:15 PM																TOTAL
PEAK HR VOL :	6	21	29	0	6	23	4	0	7	44	15	0	19	39	21	0	234
PEAK HR FACTOR :	0.750	0.656	0.659	0.000	0.750	0.821	0.500	0.000	0.583	0.786	0.750	0.000	0.792	0.696	0.656	0.000	0.944
	0.875				0.825				0.868				0.823				

National Data & Surveying Services

Intersection Turning Movement Count

Location: SR 625/Greenwood Rd & Winns Church Rd
City: Glen Allen
Control: 2-Way Stop(NB/SB)

Project ID: 25-250019-004
Date: 5/15/2025

Data - HT

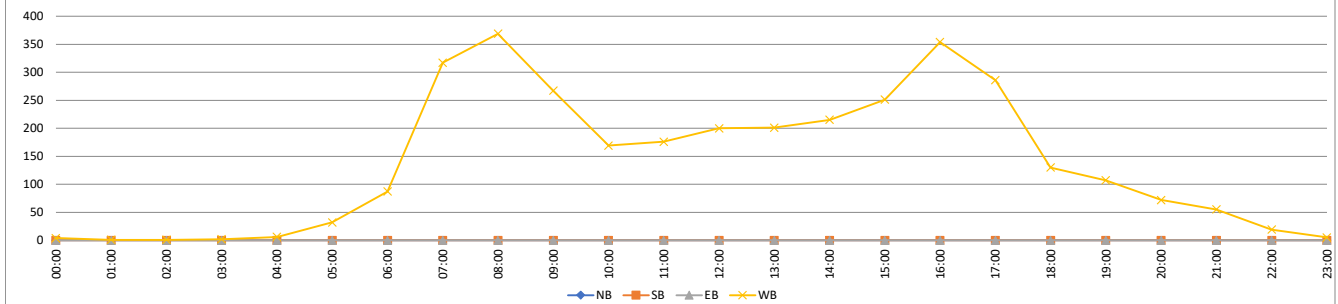
NS/EW Streets:	SR 625/Greenwood Rd				SR 625/Greenwood Rd				Winns Church Rd				Winns Church Rd				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	0 NL	1 NT	0 NR	0 NU	0 SL	1 ST	0 SR	0 SU	0 EL	1 ET	0 ER	0 EU	0 WL	1 WT	0 WR	0 WU	
6:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:00 AM	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	2
7:15 AM	0	0	0	0	0	1	0	0	0	3	0	0	0	1	0	0	5
7:30 AM	0	0	0	0	0	0	0	0	2	0	0	0	0	3	0	0	5
7:45 AM	0	1	0	0	0	0	0	0	0	1	0	0	0	2	0	0	4
8:00 AM	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	2
8:15 AM	0	2	0	0	0	1	0	0	0	1	1	0	0	0	1	0	6
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	1	1	0	0	0	0	1	0	0	0	0	0	3
9:00 AM	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	2
9:15 AM	0	0	0	0	0	1	0	0	0	0	0	0	0	2	0	0	3
9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45 AM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
TOTAL VOLUMES :	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
APPROACH %'s :	0.00%	83.33%	16.67%	0.00%	33.33%	66.67%	0.00%	0.00%	18.18%	63.64%	18.18%	0.00%	10.00%	80.00%	10.00%	0.00%	33
PEAK HR :	07:30 AM - 08:30 AM																TOTAL
PEAK HR VOL :	0	3	0	0	1	1	0	0	2	3	1	0	0	5	1	0	17
PEAK HR FACTOR :	0.000	0.375	0.000	0.000	0.250	0.250	0.000	0.000	0.250	0.750	0.250	0.000	0.000	0.417	0.250	0.000	0.708
	0.375				0.500				0.750				0.500				
PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	0 NL	1 NT	0 NR	0 NU	0 SL	1 ST	0 SR	0 SU	0 EL	1 ET	0 ER	0 EU	0 WL	1 WT	0 WR	0 WU	
3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2
3:15 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
3:30 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
3:45 PM	0	0	0	0	0	0	0	0	0	2	0	0	0	1	0	0	3
4:00 PM	0	0	0	0	0	1	1	0	1	0	0	0	0	0	1	0	4
4:15 PM	0	0	2	0	0	1	0	0	0	0	1	0	0	0	1	0	5
4:30 PM	1	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	3
4:45 PM	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
5:00 PM	0	0	0	0	0	4	0	0	0	0	1	0	0	0	0	0	5
5:15 PM	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	2
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
5:45 PM	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	2
6:00 PM	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	2
6:15 PM	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	2
6:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
TOTAL VOLUMES :	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
APPROACH %'s :	28.57%	42.86%	28.57%	0.00%	20.00%	70.00%	10.00%	0.00%	11.11%	55.56%	33.33%	0.00%	22.22%	55.56%	22.22%	0.00%	35
PEAK HR :	04:15 PM - 05:15 PM																TOTAL
PEAK HR VOL :	2	0	2	0	0	5	0	0	0	1	2	0	1	0	1	0	14
PEAK HR FACTOR :	0.500	0.000	0.250	0.000	0.000	0.313	0.000	0.000	0.000	0.250	0.500	0.000	0.250	0.000	0.250	0.000	0.700
	0.500				0.313				0.750				0.500				

VOLUME**I-295 WB On Ramp E/O Staples Mill Rd/Rte 33**

Day: Tuesday
Date: 1/23/2024

City: Glen Allen
Project #: VA24_250002_001

DAILY TOTALS						NB				SB				EB				WB				Total		DAILY TOTALS					
						0				0				0				3,326				3,326							
15-Minutes Interval												Hourly Intervals																	
TIME	NB	SB	EB	WB	TOTAL	TIME	NB	SB	EB	WB	TOTAL	TIME	NB	SB	EB	WB	TOTAL												
0:00				1	1	12:00				45	45	00:00	01:00				4	4											
0:15				0	0	12:15				60	60	01:00	02:00				1	1											
0:30				2	2	12:30				47	47	02:00	03:00				1	1											
0:45				1	1	12:45				48	48	03:00	04:00				2	2											
1:00				0	0	13:00				53	53	04:00	05:00				6	6											
1:15				0	0	13:15				46	46	05:00	06:00				32	32											
1:30				0	0	13:30				53	53	06:00	07:00				87	87											
1:45				1	1	13:45				49	49	07:00	08:00				317	317											
2:00				1	1	14:00				57	57	08:00	09:00				369	369											
2:15				0	0	14:15				70	70	09:00	10:00				267	267											
2:30				0	0	14:30				45	45	10:00	11:00				169	169											
2:45				0	0	14:45				43	43	11:00	12:00				176	176											
3:00				0	0	15:00				66	66	12:00	13:00				200	200											
3:15				0	0	15:15				56	56	13:00	14:00				201	201											
3:30				1	1	15:30				60	60	14:00	15:00				215	215											
3:45				1	1	15:45				69	69	15:00	16:00				251	251											
4:00				1	1	16:00				103	103	16:00	17:00				354	354											
4:15				1	1	16:15				89	89	17:00	18:00				286	286											
4:30				0	0	16:30				78	78	18:00	19:00				130	130											
4:45				4	4	16:45				84	84	19:00	20:00				107	107											
5:00				3	3	17:00				85	85	20:00	21:00				72	72											
5:15				10	10	17:15				80	80	21:00	22:00				55	55											
5:30				7	7	17:30				67	67	22:00	23:00				19	19											
5:45				12	12	17:45				54	54	23:00	00:00				5	5											
6:00				9	9	18:00				40	40	STATISTICS																	
6:15				13	13	18:15				41	41																		
6:30				22	22	18:30				24	24	Peak Period Volume Peak Hour Peak Volume Peak Hour Factor	00:00 to 12:00			1431	1431												
6:45				43	43	18:45				25	25																		
7:00				63	63	19:00				27	27																		
7:15				84	84	19:15				24	24																		
7:30				86	86	19:30				30	30	Peak Period Volume Peak Hour Peak Volume Peak Hour Factor	12:00 to 00:00			1895	1895												
7:45				84	84	19:45				26	26																		
8:00				77	77	20:00				22	22																		
8:15				100	100	20:15				16	16																		
8:30				86	86	20:30				13	13	Peak Period Volume Peak Hour Peak Volume Peak Hour Factor	07:00 to 09:00			686	686												
8:45				106	106	20:45				21	21																		
9:00				84	84	21:00				20	20																		
9:15				70	70	21:15				17	17																		
9:30				53	53	21:30				10	10	Peak Period Volume Peak Hour Peak Volume Peak Hour Factor	16:00 to 18:00			8:00	8:00												
9:45				60	60	21:45				8	8																		
10:00				37	37	22:00				4	4																		
10:15				48	48	22:15				4	4																		
10:30				50	50	22:30				8	8	Peak Period Volume Peak Hour Peak Volume Peak Hour Factor				369	369												
10:45				34	34	22:45				3	3																		
11:00				31	31	23:00				3	3																		
11:15				53	53	23:15				1	1																		
11:30				51	51	23:30				0	0	Peak Period Volume Peak Hour Peak Volume Peak Hour Factor				16:00	16:00												
11:45				41	41	23:45				1	1																		
TOTALS	0	0	0	1431	1431	TOTALS	0	0	0	1895	1895																		
SPLIT %	0%	0%	0%	100%	43%	SPLIT %	0%	0%	0%	100%	57%																		



VOLUME**I-295 WB On Ramp E/O Staples Mill Rd/Rte 33**

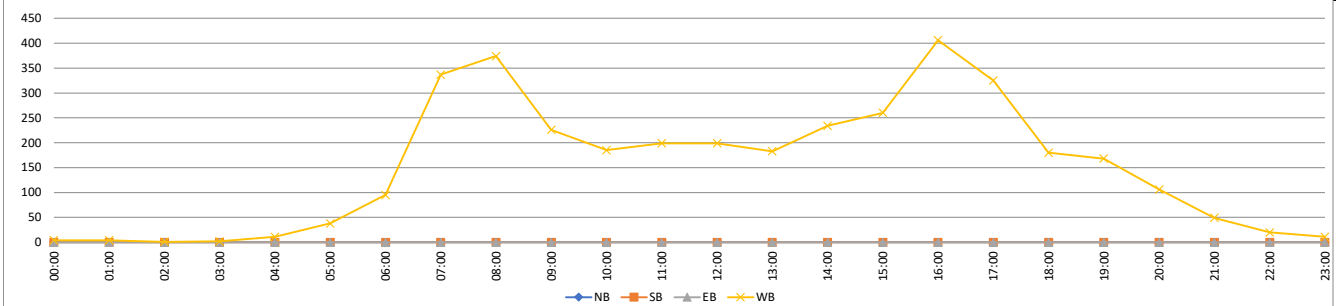
Day: Wednesday

Date: 1/24/2024

City: Glen Allen

Project #: VA24_250002_001

DAILY TOTALS						NB				SB				EB				WB				Total		DAILY TOTALS					
						0				0				0				3,617				3,617							
15-Minutes Interval												Hourly Intervals																	
TIME	NB	SB	EB	WB	TOTAL	TIME	NB	SB	EB	WB	TOTAL	TIME	NB	SB	EB	WB	TOTAL												
0:00				0	0	12:00				62	62	00:00	01:00				4	4											
0:15				1	1	12:15				54	54	01:00	02:00				4	4											
0:30				3	3	12:30				48	48	02:00	03:00				1	1											
0:45				0	0	12:45				35	35	03:00	04:00				2	2											
1:00				1	1	13:00				62	62	04:00	05:00				11	11											
1:15				0	0	13:15				49	49	05:00	06:00				38	38											
1:30				2	2	13:30				36	36	06:00	07:00				95	95											
1:45				1	1	13:45				36	36	07:00	08:00				337	337											
2:00				1	1	14:00				51	51	08:00	09:00				374	374											
2:15				0	0	14:15				68	68	09:00	10:00				226	226											
2:30				0	0	14:30				52	52	10:00	11:00				185	185											
2:45				0	0	14:45				63	63	11:00	12:00				199	199											
3:00				0	0	15:00				57	57	12:00	13:00				199	199											
3:15				0	0	15:15				60	60	13:00	14:00				183	183											
3:30				1	1	15:30				61	61	14:00	15:00				234	234											
3:45				1	1	15:45				82	82	15:00	16:00				260	260											
4:00				0	0	16:00				103	103	16:00	17:00				406	406											
4:15				2	2	16:15				117	117	17:00	18:00				325	325											
4:30				3	3	16:30				99	99	18:00	19:00				180	180											
4:45				6	6	16:45				87	87	19:00	20:00				168	168											
5:00				4	4	17:00				93	93	20:00	21:00				106	106											
5:15				6	6	17:15				77	77	21:00	22:00				49	49											
5:30				14	14	17:30				76	76	22:00	23:00				20	20											
5:45				14	14	17:45				79	79	23:00	00:00				11	11											
6:00				11	11	18:00				49	49	STATISTICS																	
6:15				16	16	18:15				52	52																		
6:30				19	19	18:30				35	35	Peak Period Volume Peak Hour Peak Volume Peak Hour Factor	00:00	to	12:00	1476	1476												
6:45				49	49	18:45				44	44																		
7:00				63	63	19:00				41	41																		
7:15				96	96	19:15				24	24																		
7:30				81	81	19:30				36	36	Peak Period Volume Peak Hour Peak Volume Peak Hour Factor	12:00	to	00:00	2141	2141												
7:45				97	97	19:45				67	67																		
8:00				90	90	20:00				49	49																		
8:15				100	100	20:15				24	24																		
8:30				101	101	20:30				16	16	Peak Period Volume Peak Hour Peak Volume Peak Hour Factor	07:00	to	09:00	711	711												
8:45				83	83	20:45				17	17																		
9:00				88	88	21:00				6	6																		
9:15				51	51	21:15				8	8																		
9:30				44	44	21:30				22	22	Peak Period Volume Peak Hour Peak Volume Peak Hour Factor	16:00	to	18:00	16:00	16:00												
9:45				43	43	21:45				13	13																		
10:00				54	54	22:00				9	9																		
10:15				42	42	22:15				3	3																		
10:30				39	39	22:30				5	5	Peak Period Volume Peak Hour Peak Volume Peak Hour Factor	07:00	to	09:00	711	711												
10:45				50	50	22:45				3	3																		
11:00				42	42	23:00				3	3																		
11:15				43	43	23:15				2	2																		
11:30				58	58	23:30				5	5	Peak Period Volume Peak Hour Peak Volume Peak Hour Factor	16:00	to	18:00	16:00	16:00												
11:45				56	56	23:45				1	1																		
TOTALS	0	0	0	1476	1476	TOTALS	0	0	0	2141	2141																		
SPLIT %	0%	0%	0%	100%	41%	SPLIT %	0%	0%	0%	100%	59%																		

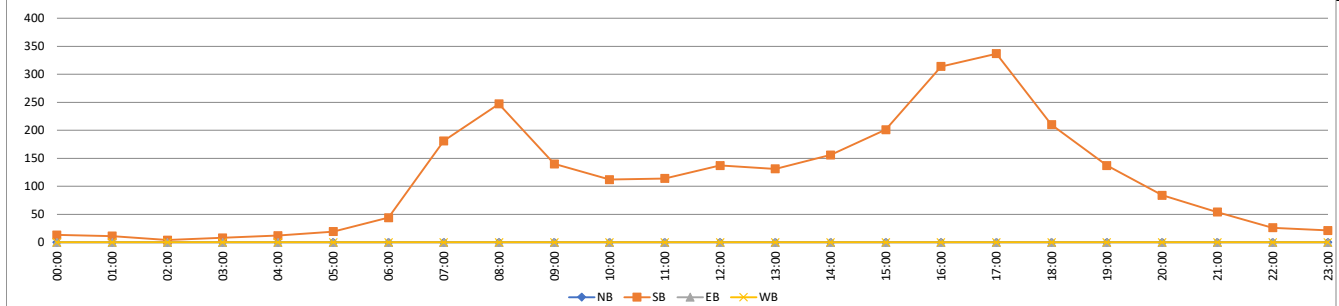


VOLUME**I-295 WB Off Ramp W/O Staples Mill Rd/Rte 33**

Day: Tuesday
Date: 1/23/2024

City: Glen Allen
Project #: VA24_250002_002

DAILY TOTALS						NB				SB				EB				WB				Total		DAILY TOTALS					
						0				2,713				0				0				2,713							
15-Minutes Interval												Hourly Intervals																	
TIME	NB	SB	EB	WB	TOTAL	TIME	NB	SB	EB	WB	TOTAL	TIME	NB	SB	EB	WB	TOTAL												
0:00		5			5	12:00		32			32	00:00	01:00	13			13												
0:15		2			2	12:15		37			37	01:00	02:00	11			11												
0:30		5			5	12:30		34			34	02:00	03:00	4			4												
0:45		1			1	12:45		34			34	03:00	04:00	8			8												
1:00		4			4	13:00		27			27	04:00	05:00	12			12												
1:15		3			3	13:15		28			28	05:00	06:00	19			19												
1:30		2			2	13:30		40			40	06:00	07:00	44			44												
1:45		2			2	13:45		36			36	07:00	08:00	181			181												
2:00		3			3	14:00		45			45	08:00	09:00	247			247												
2:15		0			0	14:15		37			37	09:00	10:00	140			140												
2:30		1			1	14:30		30			30	10:00	11:00	112			112												
2:45		0			0	14:45		44			44	11:00	12:00	114			114												
3:00		3			3	15:00		33			33	12:00	13:00	137			137												
3:15		3			3	15:15		50			50	13:00	14:00	131			131												
3:30		1			1	15:30		44			44	14:00	15:00	156			156												
3:45		1			1	15:45		74			74	15:00	16:00	201			201												
4:00		1			1	16:00		70			70	16:00	17:00	314			314												
4:15		3			3	16:15		74			74	17:00	18:00	337			337												
4:30		4			4	16:30		79			79	18:00	19:00	210			210												
4:45		4			4	16:45		91			91	19:00	20:00	137			137												
5:00		1			1	17:00		71			71	20:00	21:00	84			84												
5:15		5			5	17:15		93			93	21:00	22:00	54			54												
5:30		6			6	17:30		83			83	22:00	23:00	26			26												
5:45		7			7	17:45		90			90	23:00	00:00	21			21												
6:00		7			7	18:00		65			65	STATISTICS																	
6:15		9			9	18:15		48			48		NB	SB	EB	WB	TOTAL												
6:30		10			10	18:30		48			48	Peak Period	00:00	to	12:00														
6:45		18			18	18:45		49			49	Volume		905			905												
7:00		26			26	19:00		35			35	Peak Hour		7:45			7:45												
7:15		29			29	19:15		41			41	Peak Volume		260			260												
7:30		56			56	19:30		31			31	Peak Hour Factor		0.915			0.915												
7:45		70			70	19:45		30			30	Peak Period	12:00	to	00:00														
8:00		60			60	20:00		33			33	Volume		1808			1808												
8:15		59			59	20:15		20			20	Peak Hour		16:45			16:45												
8:30		71			71	20:30		21			21	Peak Volume		338			338												
8:45		57			57	20:45		10			10	Peak Hour Factor		0.909			0.909												
9:00		39			39	21:00		23			23	Peak Period	07:00	to	09:00														
9:15		34			34	21:15		15			15	Volume		428			428												
9:30		36			36	21:30		8			8	Peak Hour		7:45			7:45												
9:45		31			31	21:45		8			8	Peak Volume		260			260												
10:00		27			27	22:00		11			11	Peak Hour Factor		0.915			0.915												
10:15		36			36	22:15		7			7	Peak Period	16:00	to	18:00														
10:30		24			24	22:30		5			5	Volume		651			651												
10:45		25			25	22:45		3			3	Peak Hour		16:45			16:45												
11:00		26			26	23:00		6			6	Peak Volume		338			338												
11:15		26			26	23:15		6			6	Peak Hour Factor		0.909			0.909												
11:30		27			27	23:30		5			5																		
11:45		35			35	23:45		4			4																		
TOTALS	0	905	0	0	905	TOTALS	0	1808	0	0	1808																		
SPLIT %	0%	100%	0%	0%	33%	SPLIT %	0%	100%	0%	0%	67%																		



VOLUME**I-295 WB Off Ramp W/O Staples Mill Rd/Rte 33**

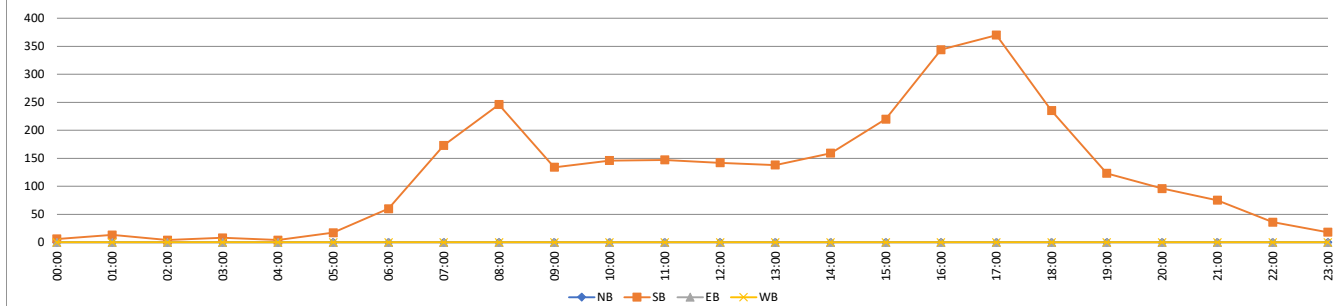
Day: Wednesday

Date: 1/24/2024

City: Glen Allen

Project #: VA24_250002_002

DAILY TOTALS						NB				SB				EB				WB				Total		DAILY TOTALS					
						0				2,914				0				0				2,914							
15-Minutes Interval												Hourly Intervals																	
TIME	NB	SB	EB	WB	TOTAL	TIME	NB	SB	EB	WB	TOTAL	TIME	NB	SB	EB	WB	TOTAL												
0:00		1			1	12:00		33			33	00:00	01:00	6			6												
0:15		5			5	12:15		41			41	01:00	02:00	13			13												
0:30		0			0	12:30		34			34	02:00	03:00	4			4												
0:45		0			0	12:45		34			34	03:00	04:00	8			8												
1:00		3			3	13:00		22			22	04:00	05:00	4			4												
1:15		5			5	13:15		42			42	05:00	06:00	17			17												
1:30		1			1	13:30		37			37	06:00	07:00	60			60												
1:45		4			4	13:45		37			37	07:00	08:00	173			173												
2:00		2			2	14:00		30			30	08:00	09:00	246			246												
2:15		0			0	14:15		41			41	09:00	10:00	134			134												
2:30		2			2	14:30		43			43	10:00	11:00	146			146												
2:45		0			0	14:45		45			45	11:00	12:00	147			147												
3:00		0			0	15:00		52			52	12:00	13:00	142			142												
3:15		2			2	15:15		50			50	13:00	14:00	138			138												
3:30		5			5	15:30		52			52	14:00	15:00	159			159												
3:45		1			1	15:45		66			66	15:00	16:00	220			220												
4:00		1			1	16:00		76			76	16:00	17:00	344			344												
4:15		0			0	16:15		86			86	17:00	18:00	370			370												
4:30		1			1	16:30		87			87	18:00	19:00	235			235												
4:45		2			2	16:45		95			95	19:00	20:00	123			123												
5:00		1			1	17:00		85			85	20:00	21:00	96			96												
5:15		5			5	17:15		115			115	21:00	22:00	75			75												
5:30		2			2	17:30		89			89	22:00	23:00	36			36												
5:45		9			9	17:45		81			81	23:00	00:00	18			18												
6:00		13			13	18:00		67			67	STATISTICS																	
6:15		14			14	18:15		57			57		NB	SB	EB	WB	TOTAL												
6:30		16			16	18:30		58			58	Peak Period	00:00	to	12:00														
6:45		17			17	18:45		53			53	Volume		958			958												
7:00		29			29	19:00		32			32	Peak Hour		7:45			7:45												
7:15		31			31	19:15		38			38	Peak Volume		253			253												
7:30		45			45	19:30		33			33	Peak Hour Factor		0.917			0.917												
7:45		68			68	19:45		20			20	Peak Period	12:00	to	00:00														
8:00		51			51	20:00		24			24	Volume		1956			1956												
8:15		69			69	20:15		20			20	Peak Hour		16:45			16:45												
8:30		65			65	20:30		27			27	Peak Volume		384			384												
8:45		61			61	20:45		25			25	Peak Hour Factor		0.835			0.835												
9:00		30			30	21:00		17			17	Peak Period	07:00	to	09:00														
9:15		41			41	21:15		18			18	Volume		419			419												
9:30		31			31	21:30		25			25	Peak Hour		7:45			7:45												
9:45		32			32	21:45		15			15	Peak Volume		253			253												
10:00		46			46	22:00		12			12	Peak Hour Factor		0.917			0.917												
10:15		37			37	22:15		7			7	Peak Period	16:00	to	18:00														
10:30		35			35	22:30		9			9	Volume		714			714												
10:45		28			28	22:45		8			8	Peak Hour		16:45			16:45												
11:00		35			35	23:00		7			7	Peak Volume		384			384												
11:15		32			32	23:15		2			2	Peak Hour Factor		0.835			0.835												
11:30		43			43	23:30		4			4																		
11:45		37			37	23:45		5			5																		
TOTALS	0	958	0	0	958	TOTALS	0	1956	0	0	1956																		
SPLIT %	0%	100%	0%	0%	33%	SPLIT %	0%	100%	0%	0%	67%																		

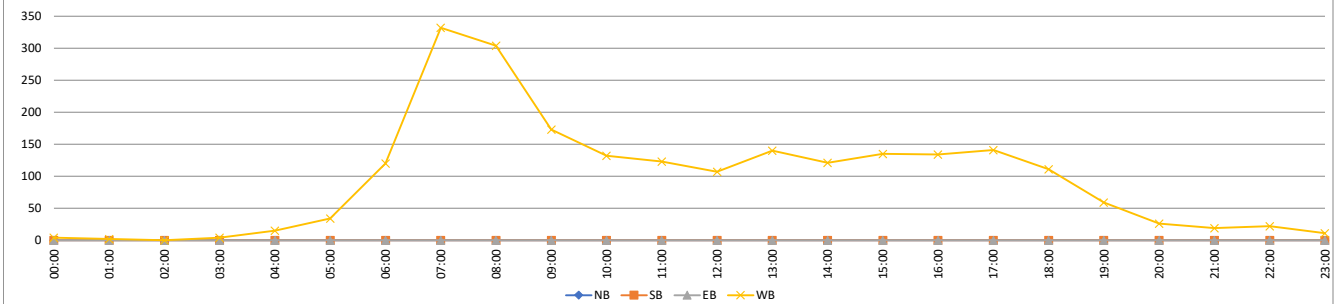


VOLUME**I-295 WB On Ramp W/O Staples Mill Rd/Rte 33**

Day: Tuesday
Date: 1/23/2024

City: Glen Allen
Project #: VA24_250002_003

DAILY TOTALS						NB				SB				EB				WB				Total		DAILY TOTALS					
						0				0				0				2,269				2,269							
15-Minutes Interval												Hourly Intervals																	
TIME	NB	SB	EB	WB	TOTAL	TIME	NB	SB	EB	WB	TOTAL	TIME	NB	SB	EB	WB	TOTAL												
0:00				1	1	12:00				31	31	00:00	01:00				4	4											
0:15				2	2	12:15				27	27	01:00	02:00				2	2											
0:30				1	1	12:30				26	26	02:00	03:00				0	0											
0:45				0	0	12:45				23	23	03:00	04:00				4	4											
1:00				1	1	13:00				24	24	04:00	05:00				15	15											
1:15				1	1	13:15				38	38	05:00	06:00				34	34											
1:30				0	0	13:30				32	32	06:00	07:00				120	120											
1:45				0	0	13:45				46	46	07:00	08:00				332	332											
2:00				0	0	14:00				24	24	08:00	09:00				304	304											
2:15				0	0	14:15				30	30	09:00	10:00				173	173											
2:30				0	0	14:30				30	30	10:00	11:00				132	132											
2:45				0	0	14:45				37	37	11:00	12:00				123	123											
3:00				1	1	15:00				23	23	12:00	13:00				107	107											
3:15				1	1	15:15				33	33	13:00	14:00				140	140											
3:30				0	0	15:30				40	40	14:00	15:00				121	121											
3:45				2	2	15:45				39	39	15:00	16:00				135	135											
4:00				1	1	16:00				32	32	16:00	17:00				134	134											
4:15				1	1	16:15				49	49	17:00	18:00				141	141											
4:30				4	4	16:30				24	24	18:00	19:00				111	111											
4:45				9	9	16:45				29	29	19:00	20:00				59	59											
5:00				4	4	17:00				45	45	20:00	21:00				26	26											
5:15				7	7	17:15				38	38	21:00	22:00				19	19											
5:30				16	16	17:30				33	33	22:00	23:00				22	22											
5:45				7	7	17:45				25	25	23:00	00:00				11	11											
6:00				13	13	18:00				32	32	STATISTICS																	
6:15				23	23	18:15				34	34																		
6:30				34	34	18:30				26	26	Peak Period Volume Peak Hour Peak Volume Peak Hour Factor	00:00 to 12:00			1243	1243												
6:45				50	50	18:45				19	19					7:15	7:15												
7:00				60	60	19:00				11	11					373	373												
7:15				91	91	19:15				15	15					0.923	0.923												
7:30				85	85	19:30				16	16	Peak Period Volume Peak Hour Peak Volume Peak Hour Factor	12:00 to 00:00			1026	1026												
7:45				96	96	19:45				17	17					15:30	15:30												
8:00				101	101	20:00				8	8					160	160												
8:15				77	77	20:15				6	6					0.816	0.816												
8:30				61	61	20:30				9	9	Peak Period Volume Peak Hour Peak Volume Peak Hour Factor	07:00 to 09:00			636	636												
8:45				65	65	20:45				3	3					7:15	7:15												
9:00				48	48	21:00				3	3					373	373												
9:15				42	42	21:15				8	8					0.923	0.923												
9:30				50	50	21:30				3	3	Peak Period Volume Peak Hour Peak Volume Peak Hour Factor	16:00 to 18:00			275	275												
9:45				33	33	21:45				5	5					16:15	16:15												
10:00				33	33	22:00				13	13					147	147												
10:15				31	31	22:15				5	5					0.750	0.750												
10:30				37	37	22:30				1	1	Peak Period Volume Peak Hour Peak Volume Peak Hour Factor																	
10:45				31	31	22:45				3	3																		
11:00				27	27	23:00				4	4																		
11:15				24	24	23:15				2	2																		
11:30				41	41	23:30				2	2	Peak Period Volume Peak Hour Peak Volume Peak Hour Factor																	
11:45				31	31	23:45				3	3																		
TOTALS	0	0	0	1243	1243	TOTALS	0	0	0	1026	1026																		
SPLIT %	0%	0%	0%	100%	55%	SPLIT %	0%	0%	0%	100%	45%																		



VOLUME**I-295 WB On Ramp W/O Staples Mill Rd/Rte 33**

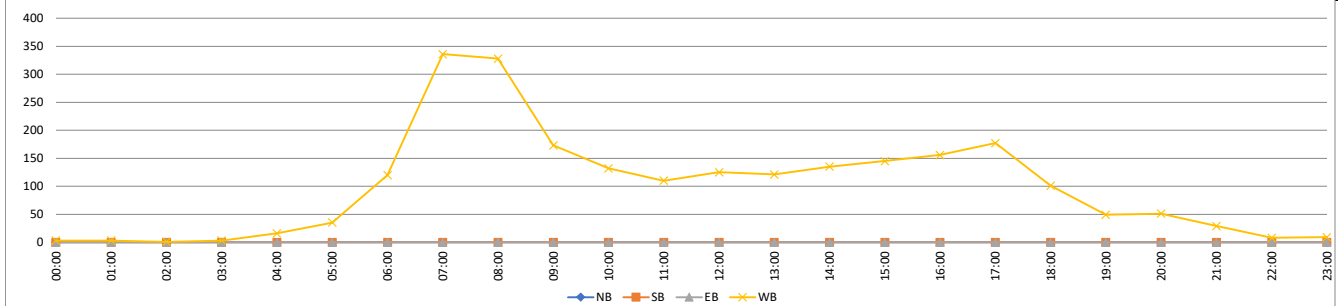
Day: Wednesday

City: Glen Allen

Date: 1/24/2024

Project #: VA24_250002_003

DAILY TOTALS						NB	SB	EB	WB	Total	DAILY TOTALS						
						0	0	0	2,366	2,366							
15-Minutes Interval												Hourly Intervals					
TIME	NB	SB	EB	WB	TOTAL	TIME	NB	SB	EB	WB	TOTAL	TIME	NB	SB	EB	WB	TOTAL
0:00				1	1	12:00				29	29	00:00	01:00			3	3
0:15				0	0	12:15				26	26	01:00	02:00			3	3
0:30				2	2	12:30				33	33	02:00	03:00			1	1
0:45				0	0	12:45				37	37	03:00	04:00			3	3
1:00				1	1	13:00				19	19	04:00	05:00			16	16
1:15				1	1	13:15				25	25	05:00	06:00			35	35
1:30				0	0	13:30				34	34	06:00	07:00			120	120
1:45				1	1	13:45				43	43	07:00	08:00			336	336
2:00				0	0	14:00				27	27	08:00	09:00			328	328
2:15				0	0	14:15				32	32	09:00	10:00			173	173
2:30				0	0	14:30				39	39	10:00	11:00			132	132
2:45				1	1	14:45				37	37	11:00	12:00			110	110
3:00				0	0	15:00				25	25	12:00	13:00			125	125
3:15				3	3	15:15				28	28	13:00	14:00			121	121
3:30				0	0	15:30				38	38	14:00	15:00			135	135
3:45				0	0	15:45				54	54	15:00	16:00			145	145
4:00				0	0	16:00				42	42	16:00	17:00			156	156
4:15				3	3	16:15				44	44	17:00	18:00			177	177
4:30				4	4	16:30				33	33	18:00	19:00			101	101
4:45				9	9	16:45				37	37	19:00	20:00			49	49
5:00				6	6	17:00				49	49	20:00	21:00			51	51
5:15				10	10	17:15				43	43	21:00	22:00			29	29
5:30				11	11	17:30				47	47	22:00	23:00			8	8
5:45				8	8	17:45				38	38	23:00	00:00			9	9
6:00				15	15	18:00				29	29	STATISTICS					
6:15				24	24	18:15				28	28		NB	SB	EB	WB	TOTAL
6:30				30	30	18:30				27	27	Peak Period	00:00 to 12:00				
6:45				51	51	18:45				17	17	Volume				1260	1260
7:00				64	64	19:00				19	19	Peak Hour				7:15	7:15
7:15				91	91	19:15				12	12	Peak Volume				376	376
7:30				86	86	19:30				10	10	Peak Hour Factor				0.904	0.904
7:45				95	95	19:45				8	8	Peak Period 12:00 to 00:00					
8:00				104	104	20:00				13	13	Volume				1106	1106
8:15				86	86	20:15				19	19	Peak Hour				15:30	15:30
8:30				77	77	20:30				10	10	Peak Volume				178	178
8:45				61	61	20:45				9	9	Peak Hour Factor				0.824	0.824
9:00				50	50	21:00				5	5	Peak Period 07:00 to 09:00					
9:15				31	31	21:15				10	10	Volume				664	664
9:30				42	42	21:30				9	9	Peak Hour				7:15	7:15
9:45				50	50	21:45				5	5	Peak Volume				376	376
10:00				30	30	22:00				2	2	Peak Hour Factor				0.904	0.904
10:15				36	36	22:15				4	4	Peak Period 16:00 to 18:00					
10:30				30	30	22:30				1	1	Volume				333	333
10:45				36	36	22:45				1	1	Peak Hour				17:00	17:00
11:00				31	31	23:00				1	1	Peak Volume				177	177
11:15				28	28	23:15				5	5	Peak Hour Factor				0.903	0.903
11:30				29	29	23:30				2	2						
11:45				22	22	23:45				1	1						
TOTALS	0	0	0	1260	1260	TOTALS	0	0	0	1106	1106						
SPLIT %	0%	0%	0%	100%	53%	SPLIT %	0%	0%	0%	100%	47%						

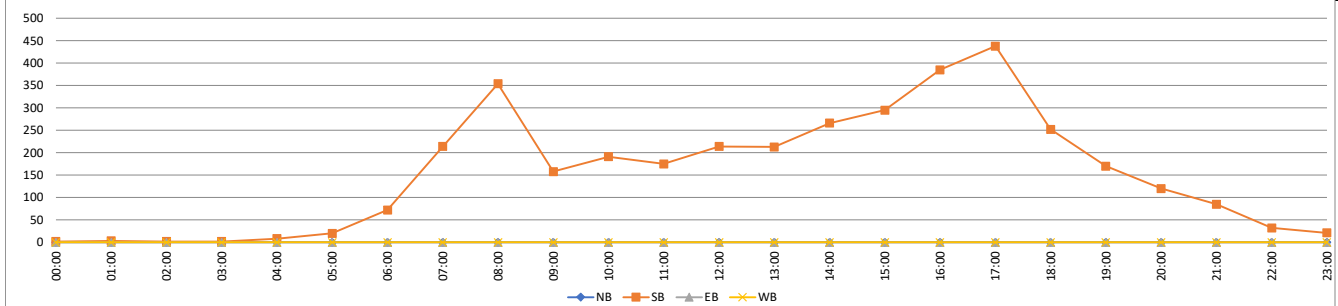


VOLUME**I-295 EB Off Ramp W/O Staples Mill Rd/Rte 33**

Day: Tuesday
Date: 1/23/2024

City: Glen Allen
Project #: VA24_250002_004

DAILY TOTALS						NB				SB				EB				WB				Total		DAILY TOTALS									
						0				3,692				0				0				3,692											
15-Minutes Interval												Hourly Intervals																					
TIME	NB		SB		EB		WB		TOTAL		TIME	NB		SB		EB		WB		TOTAL		TIME	NB		SB		EB		WB		TOTAL		
0:00			1						1		12:00			49						49		00:00	01:00			2				2			
0:15			0						0		12:15			57						57		01:00	02:00			3				3			
0:30			0						0		12:30			42						42		02:00	03:00			2				2			
0:45			1						1		12:45			66						66		03:00	04:00			2				2			
1:00			2						2		13:00			37						37		04:00	05:00			8				8			
1:15			0						0		13:15			45						45		05:00	06:00			20				20			
1:30			0						0		13:30			47						47		06:00	07:00			72				72			
1:45			1						1		13:45			84						84		07:00	08:00			214				214			
2:00			1						1		14:00			48						48		08:00	09:00			354				354			
2:15			0						0		14:15			82						82		09:00	10:00			158				158			
2:30			1						1		14:30			80						80		10:00	11:00			191				191			
2:45			0						0		14:45			56						56		11:00	12:00			175				175			
3:00			0						0		15:00			53						53		12:00	13:00			214				214			
3:15			1						1		15:15			81						81		13:00	14:00			213				213			
3:30			0						0		15:30			77						77		14:00	15:00			266				266			
3:45			1						1		15:45			84						84		15:00	16:00			295				295			
4:00			1						1		16:00			97						97		16:00	17:00			385				385			
4:15			2						2		16:15			88						88		17:00	18:00			438				438			
4:30			2						2		16:30			88						88		18:00	19:00			252				252			
4:45			3						3		16:45			112						112		19:00	20:00			170				170			
5:00			0						0		17:00			116						116		20:00	21:00			120				120			
5:15			8						8		17:15			112						112		21:00	22:00			85				85			
5:30			5						5		17:30			117						117		22:00	23:00			32				32			
5:45			7						7		17:45			93						93		23:00	00:00			21				21			
6:00			9						9		18:00			78						78		STATISTICS											
6:15			15						15		18:15			58						58													
6:30			22						22		18:30			60						60		Peak Period Volume Peak Hour Peak Volume Peak Hour Factor		00:00		to		12:00				1201	
6:45			26						26		18:45			56						56						1201		8:00				8:00	
7:00			37						37		19:00			47						47						354				354			
7:15			52						52		19:15			49						49						0.827				0.827			
7:30			56						56		19:30			39						39		Peak Period Volume Peak Hour Peak Volume Peak Hour Factor											
7:45			69						69		19:45			35						35													
8:00			73						73		20:00			29						29													
8:15			98						98		20:15			32						32													
8:30			107						107		20:30			31						31		Peak Period Volume Peak Hour Peak Volume Peak Hour Factor											
8:45			76						76		20:45			28						28													
9:00			44						44		21:00			23						23													
9:15			34						34		21:15			31						31													
9:30			39						39		21:30			17						17		Peak Period Volume Peak Hour Peak Volume Peak Hour Factor											
9:45			41						41		21:45			14						14													
10:00			50						50		22:00			8						8													
10:15			46						46		22:15			13						13													
10:30			46						46		22:30			4						4		Peak Period Volume Peak Hour Peak Volume Peak Hour Factor											
10:45			49						49		22:45			7						7													
11:00			41						41		23:00			7						7													
11:15			42						42		23:15			7						7													
11:30			44						44		23:30			5						5		Peak Period Volume Peak Hour Peak Volume Peak Hour Factor											
11:45			48						48		23:45			2						2													
TOTALS	0		1201		0		0		1201		TOTALS	0		2491		0		0		2491													
SPLIT %	0%		100%		0%		0%		33%		SPLIT %	0%		100%		0%		0%		67%													



VOLUME**I-295 EB Off Ramp W/O Staples Mill Rd/Rte 33**

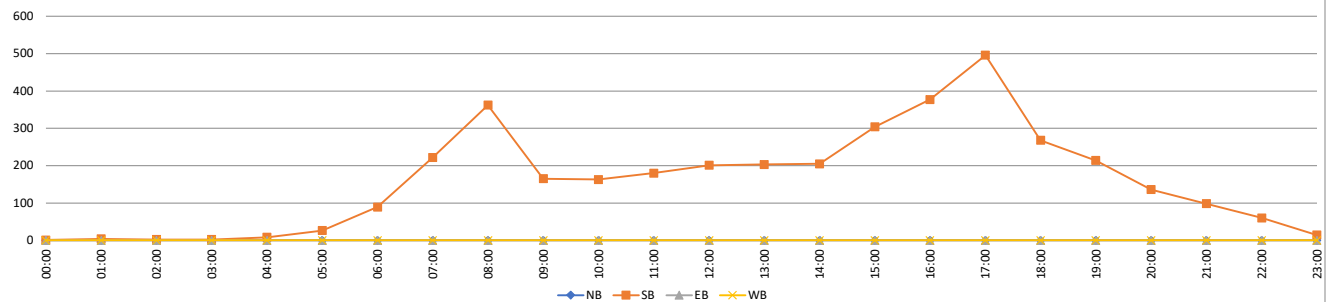
Day: Wednesday

City: Glen Allen

Date: 1/24/2024

Project #: VA24_250002_004

DAILY TOTALS						NB	SB	EB	WB	Total	DAILY TOTALS						
						0	3,800	0	0	3,800							
15-Minutes Interval												Hourly Intervals					
TIME	NB	SB	EB	WB	TOTAL	TIME	NB	SB	EB	WB	TOTAL	TIME	NB	SB	EB	WB	TOTAL
0:00		1			1	12:00		53			53	00:00	01:00	1			1
0:15		0			0	12:15		49			49	01:00	02:00	4			4
0:30		0			0	12:30		55			55	02:00	03:00	2			2
0:45		0			0	12:45		44			44	03:00	04:00	2			2
1:00		2			2	13:00		39			39	04:00	05:00	8			8
1:15		0			0	13:15		58			58	05:00	06:00	26			26
1:30		1			1	13:30		46			46	06:00	07:00	89			89
1:45		1			1	13:45		60			60	07:00	08:00	222			222
2:00		1			1	14:00		65			65	08:00	09:00	362			362
2:15		0			0	14:15		44			44	09:00	10:00	165			165
2:30		1			1	14:30		50			50	10:00	11:00	163			163
2:45		0			0	14:45		46			46	11:00	12:00	180			180
3:00		0			0	15:00		56			56	12:00	13:00	201			201
3:15		1			1	15:15		77			77	13:00	14:00	203			203
3:30		0			0	15:30		80			80	14:00	15:00	205			205
3:45		1			1	15:45		91			91	15:00	16:00	304			304
4:00		1			1	16:00		78			78	16:00	17:00	377			377
4:15		2			2	16:15		103			103	17:00	18:00	496			496
4:30		1			1	16:30		91			91	18:00	19:00	268			268
4:45		4			4	16:45		105			105	19:00	20:00	214			214
5:00		2			2	17:00		95			95	20:00	21:00	136			136
5:15		1			1	17:15		146			146	21:00	22:00	98			98
5:30		13			13	17:30		141			141	22:00	23:00	60			60
5:45		10			10	17:45		114			114	23:00	00:00	14			14
6:00		9			9	18:00		80			80	STATISTICS					
6:15		22			22	18:15		78			78		NB	SB	EB	WB	TOTAL
6:30		25			25	18:30		62			62	Peak Period	00:00	to	12:00		
6:45		33			33	18:45		48			48	Volume		1224			1224
7:00		46			46	19:00		60			60	Peak Hour		8:00			8:00
7:15		42			42	19:15		58			58	Peak Volume		362			362
7:30		63			63	19:30		53			53	Peak Hour Factor		0.815			0.815
7:45		71			71	19:45		43			43	Peak Period	12:00	to	00:00		
8:00		68			68	20:00		43			43	Volume		2576			2576
8:15		111			111	20:15		30			30	Peak Hour		17:00			17:00
8:30		105			105	20:30		35			35	Peak Volume		496			496
8:45		78			78	20:45		28			28	Peak Hour Factor		0.849			0.849
9:00		54			54	21:00		30			30	Peak Period	07:00	to	09:00		
9:15		37			37	21:15		34			34	Volume		584			584
9:30		43			43	21:30		18			18	Peak Hour		8:00			8:00
9:45		31			31	21:45		16			16	Peak Volume		362			362
10:00		32			32	22:00		14			14	Peak Hour Factor		0.815			0.815
10:15		39			39	22:15		18			18	Peak Period	16:00	to	18:00		
10:30		48			48	22:30		13			13	Volume		873			873
10:45		44			44	22:45		15			15	Peak Hour		17:00			17:00
11:00		42			42	23:00		4			4	Peak Volume		496			496
11:15		54			54	23:15		5			5	Peak Hour Factor		0.849			0.849
11:30		49			49	23:30		3			3						
11:45		35			35	23:45		2			2						
TOTALS	0	1224	0	0	1224	TOTALS	0	2576	0	0	2576						
SPLIT %	0%	100%	0%	0%	32%	SPLIT %	0%	100%	0%	0%	68%						

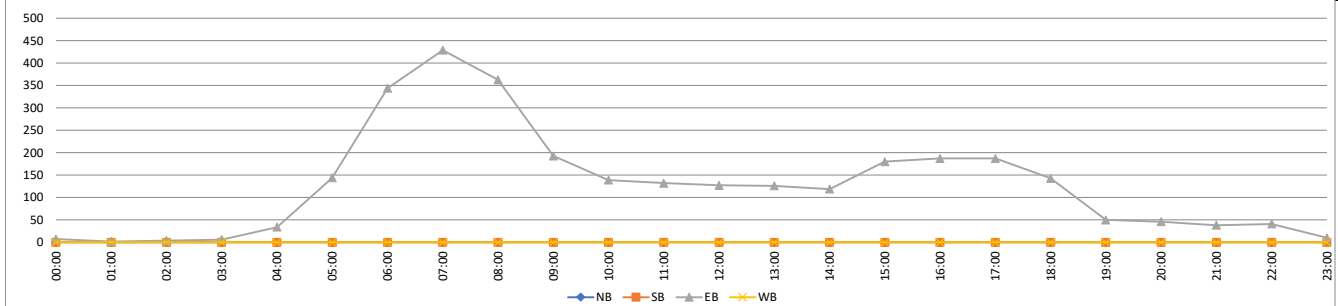


VOLUME**I-295 EB On Ramp W/O Staples Mill Rd/Rte 33**

Day: Tuesday
Date: 1/23/2024

City: Glen Allen
Project #: VA24_250002_005

DAILY TOTALS						NB				SB				EB				WB				Total		DAILY TOTALS					
						0				0				3,051				0				3,051							
15-Minutes Interval												Hourly Intervals																	
TIME	NB	SB	EB	WB	TOTAL	TIME	NB	SB	EB	WB	TOTAL	TIME	NB	SB	EB	WB	TOTAL												
0:00			2		2	12:00			27		27	00:00	01:00		7		7												
0:15			4		4	12:15			31		31	01:00	02:00		2		2												
0:30			0		0	12:30			40		40	02:00	03:00		4		4												
0:45			1		1	12:45			29		29	03:00	04:00		6		6												
1:00			0		0	13:00			25		25	04:00	05:00		34		34												
1:15			0		0	13:15			31		31	05:00	06:00		144		144												
1:30			1		1	13:30			36		36	06:00	07:00		344		344												
1:45			1		1	13:45			34		34	07:00	08:00		429		429												
2:00			0		0	14:00			26		26	08:00	09:00		363		363												
2:15			1		1	14:15			32		32	09:00	10:00		193		193												
2:30			2		2	14:30			28		28	10:00	11:00		139		139												
2:45			1		1	14:45			33		33	11:00	12:00		132		132												
3:00			1		1	15:00			51		51	12:00	13:00		127		127												
3:15			2		2	15:15			52		52	13:00	14:00		126		126												
3:30			2		2	15:30			32		32	14:00	15:00		119		119												
3:45			1		1	15:45			45		45	15:00	16:00		180		180												
4:00			5		5	16:00			47		47	16:00	17:00		187		187												
4:15			5		5	16:15			51		51	17:00	18:00		187		187												
4:30			13		13	16:30			43		43	18:00	19:00		143		143												
4:45			11		11	16:45			46		46	19:00	20:00		50		50												
5:00			26		26	17:00			49		49	20:00	21:00		46		46												
5:15			38		38	17:15			51		51	21:00	22:00		38		38												
5:30			47		47	17:30			47		47	22:00	23:00		41		41												
5:45			33		33	17:45			40		40	23:00	00:00		10		10												
6:00			58		58	18:00			56		56	STATISTICS																	
6:15			84		84	18:15			42		42		NB	SB	EB	WB	TOTAL												
6:30			105		105	18:30			20		20	Peak Period	00:00 to 12:00																
6:45			97		97	18:45			25		25	Volume			1797		1797												
7:00			94		94	19:00			14		14	Peak Hour			7:15		7:15												
7:15			115		115	19:15			14		14	Peak Volume			447		447												
7:30			117		117	19:30			12		12	Peak Hour Factor			0.955		0.955												
7:45			103		103	19:45			10		10	Peak Period	12:00 to 00:00																
8:00			112		112	20:00			13		13	Volume			1254		1254												
8:15			100		100	20:15			10		10	Peak Hour			17:15		17:15												
8:30			89		89	20:30			11		11	Peak Volume			194		194												
8:45			62		62	20:45			12		12	Peak Hour Factor			0.866		0.866												
9:00			54		54	21:00			9		9	Peak Period	07:00 to 09:00																
9:15			49		49	21:15			15		15	Volume			792		792												
9:30			50		50	21:30			8		8	Peak Hour			7:15		7:15												
9:45			40		40	21:45			6		6	Peak Volume			447		447												
10:00			40		40	22:00			29		29	Peak Hour Factor			0.955		0.955												
10:15			36		36	22:15			4		4	Peak Period	16:00 to 18:00																
10:30			28		28	22:30			5		5	Volume			374		374												
10:45			35		35	22:45			3		3	Peak Hour			16:45		16:45												
11:00			38		38	23:00			2		2	Peak Volume			193		193												
11:15			23		23	23:15			3		3	Peak Hour Factor			0.946		0.946												
11:30			41		41	23:30			4		4																		
11:45			30		30	23:45			1		1																		
TOTALS	0	0	1797	0	1797	TOTALS	0	0	1254	0	1254																		
SPLIT %	0%	0%	100%	0%	59%	SPLIT %	0%	0%	100%	0%	41%																		



VOLUME**I-295 EB On Ramp W/O Staples Mill Rd/Rte 33**

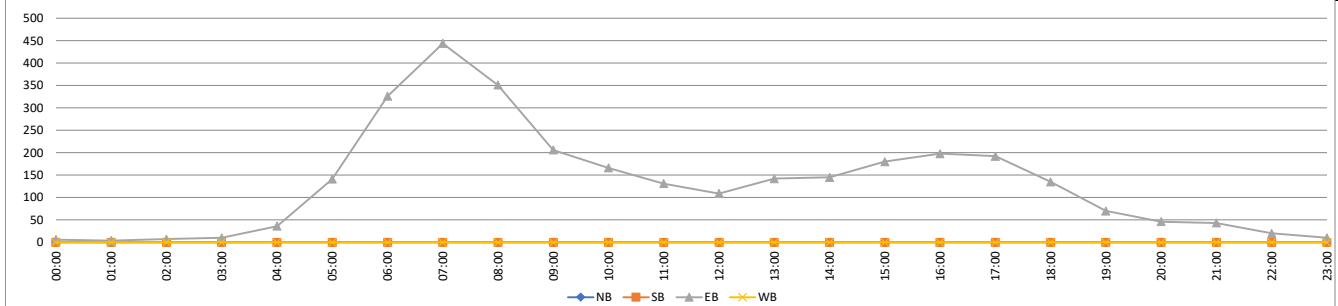
Day: Wednesday

City: Glen Allen

Date: 1/24/2024

Project #: VA24_250002_005

DAILY TOTALS						NB	SB	EB	WB	Total	DAILY TOTALS										
						0	0	3,118	0	3,118											
15-Minutes Interval												Hourly Intervals									
TIME	NB	SB	EB	WB	TOTAL	TIME	NB	SB	EB	WB	TOTAL	TIME	NB	SB	EB	WB	TOTAL				
0:00			3		3	12:00			25		25	00:00	01:00		6		6				
0:15			0		0	12:15			27		27	01:00	02:00		4		4				
0:30			3		3	12:30			34		34	02:00	03:00		7		7				
0:45			0		0	12:45			23		23	03:00	04:00		10		10				
1:00			0		0	13:00			41		41	04:00	05:00		36		36				
1:15			1		1	13:15			35		35	05:00	06:00		141		141				
1:30			2		2	13:30			37		37	06:00	07:00		326		326				
1:45			1		1	13:45			29		29	07:00	08:00		444		444				
2:00			0		0	14:00			45		45	08:00	09:00		351		351				
2:15			3		3	14:15			35		35	09:00	10:00		206		206				
2:30			3		3	14:30			31		31	10:00	11:00		166		166				
2:45			1		1	14:45			34		34	11:00	12:00		131		131				
3:00			2		2	15:00			49		49	12:00	13:00		109		109				
3:15			2		2	15:15			42		42	13:00	14:00		142		142				
3:30			4		4	15:30			43		43	14:00	15:00		145		145				
3:45			2		2	15:45			46		46	15:00	16:00		180		180				
4:00			3		3	16:00			51		51	16:00	17:00		198		198				
4:15			9		9	16:15			54		54	17:00	18:00		192		192				
4:30			8		8	16:30			44		44	18:00	19:00		135		135				
4:45			16		16	16:45			49		49	19:00	20:00		70		70				
5:00			22		22	17:00			58		58	20:00	21:00		46		46				
5:15			36		36	17:15			43		43	21:00	22:00		43		43				
5:30			47		47	17:30			50		50	22:00	23:00		20		20				
5:45			36		36	17:45			41		41	23:00	00:00		10		10				
6:00			82		82	18:00			42		42	STATISTICS									
6:15			69		69	18:15			33		33		NB	SB	EB	WB	TOTAL				
6:30			94		94	18:30			30		30	Peak Period	00:00 to 12:00								
6:45			81		81	18:45			30		30	Volume			1828		1828				
7:00			118		118	19:00			19		19	Peak Hour			7:00		7:00				
7:15			114		114	19:15			20		20	Peak Volume			444		444				
7:30			109		109	19:30			12		12	Peak Hour Factor			0.941		0.941				
7:45			103		103	19:45			19		19	Peak Period	12:00 to 00:00								
8:00			105		105	20:00			15		15	Volume			1290		1290				
8:15			82		82	20:15			10		10	Peak Hour			16:15		16:15				
8:30			107		107	20:30			8		8	Peak Volume			205		205				
8:45			57		57	20:45			13		13	Peak Hour Factor			0.884		0.884				
9:00			61		61	21:00			14		14	Peak Period	07:00 to 09:00								
9:15			53		53	21:15			8		8	Volume			795		795				
9:30			49		49	21:30			12		12	Peak Hour			7:00		7:00				
9:45			43		43	21:45			9		9	Peak Volume			444		444				
10:00			31		31	22:00			6		6	Peak Hour Factor			0.941		0.941				
10:15			46		46	22:15			4		4	Peak Period	16:00 to 18:00								
10:30			40		40	22:30			2		2	Volume			390		390				
10:45			49		49	22:45			8		8	Peak Hour			16:15		16:15				
11:00			32		32	23:00			2		2	Peak Volume			205		205				
11:15			28		28	23:15			4		4	Peak Hour Factor			0.884		0.884				
11:30			40		40	23:30			1		1										
11:45			31		31	23:45			3		3										
TOTALS	0	0	1828	0	1828	TOTALS	0	0	1290	0	1290										
SPLIT %	0%	0%	100%	0%	59%	SPLIT %	0%	0%	100%	0%	41%										

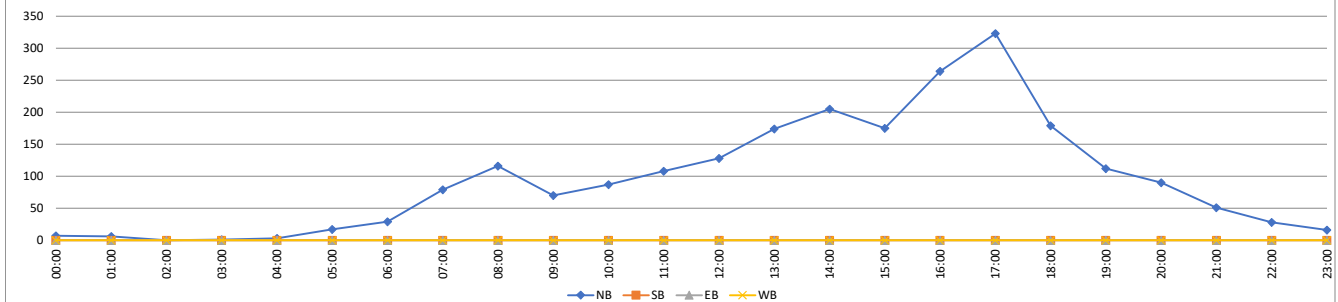


VOLUME**I-295 EB Off Ramp E/O Staples Mill Rd/Rte 33**

Day: Tuesday
Date: 1/23/2024

City: Glen Allen
Project #: VA24_250002_006

DAILY TOTALS						NB				SB				EB				WB				Total		DAILY TOTALS					
						2,268				0				0				0				2,268							
15-Minutes Interval												Hourly Intervals																	
TIME	NB	SB	EB	WB	TOTAL	TIME	NB	SB	EB	WB	TOTAL	TIME	NB	SB	EB	WB	TOTAL												
0:00	4				4	12:00	34				34	00:00	01:00	7			7												
0:15	0				0	12:15	29				29	01:00	02:00	6			6												
0:30	0				0	12:30	39				39	02:00	03:00	0			0												
0:45	3				3	12:45	26				26	03:00	04:00	1			1												
1:00	2				2	13:00	40				40	04:00	05:00	3			3												
1:15	2				2	13:15	27				27	05:00	06:00	17			17												
1:30	0				0	13:30	34				34	06:00	07:00	29			29												
1:45	2				2	13:45	73				73	07:00	08:00	79			79												
2:00	0				0	14:00	71				71	08:00	09:00	116			116												
2:15	0				0	14:15	59				59	09:00	10:00	70			70												
2:30	0				0	14:30	38				38	10:00	11:00	87			87												
2:45	0				0	14:45	37				37	11:00	12:00	108			108												
3:00	1				1	15:00	49				49	12:00	13:00	128			128												
3:15	0				0	15:15	43				43	13:00	14:00	174			174												
3:30	0				0	15:30	41				41	14:00	15:00	205			205												
3:45	0				0	15:45	42				42	15:00	16:00	175			175												
4:00	0				0	16:00	66				66	16:00	17:00	264			264												
4:15	2				2	16:15	72				72	17:00	18:00	323			323												
4:30	0				0	16:30	71				71	18:00	19:00	179			179												
4:45	1				1	16:45	55				55	19:00	20:00	112			112												
5:00	3				3	17:00	97				97	20:00	21:00	90			90												
5:15	3				3	17:15	97				97	21:00	22:00	51			51												
5:30	3				3	17:30	72				72	22:00	23:00	28			28												
5:45	8				8	17:45	57				57	23:00	00:00	16			16												
6:00	4				4	18:00	59				59	STATISTICS																	
6:15	7				7	18:15	47				47		NB	SB	EB	WB	TOTAL												
6:30	10				10	18:30	49				49	Peak Period	00:00		to	12:00													
6:45	8				8	18:45	24				24	Volume	523					523											
7:00	13				13	19:00	32				32	Peak Hour	7:45					7:45											
7:15	19				19	19:15	35				35	Peak Volume	118					118											
7:30	18				18	19:30	27				27	Peak Hour Factor	0.797					0.797											
7:45	29				29	19:45	18				18																		
8:00	19				19	20:00	13				13	Peak Period	12:00		to	00:00													
8:15	37				37	20:15	28				28	Volume	1745					1745											
8:30	33				33	20:30	26				26	Peak Hour	17:00					17:00											
8:45	27				27	20:45	23				23	Peak Volume	323					323											
9:00	17				17	21:00	13				13	Peak Hour Factor	0.832					0.832											
9:15	19				19	21:15	17				17																		
9:30	18				18	21:30	10				10	Peak Period	07:00		to	09:00													
9:45	16				16	21:45	11				11	Volume	195					195											
10:00	26				26	22:00	11				11	Peak Hour	7:45					7:45											
10:15	20				20	22:15	8				8	Peak Volume	118					118											
10:30	23				23	22:30	5				5	Peak Hour Factor	0.797					0.797											
10:45	18				18	22:45	4				4																		
11:00	26				26	23:00	6				6	Peak Period	16:00		to	18:00													
11:15	23				23	23:15	5				5	Volume	587					587											
11:30	28				28	23:30	3				3	Peak Hour	17:00					17:00											
11:45	31				31	23:45	2				2	Peak Volume	323					323											
TOTALS	523	0	0	0	523	TOTALS	1745	0	0	0	1745	Peak Hour Factor	0.832					0.832											
SPLIT %	100%	0%	0%	0%	23%	SPLIT %	100%	0%	0%	0%	77%																		



VOLUME**I-295 EB Off Ramp E/O Staples Mill Rd/Rte 33**

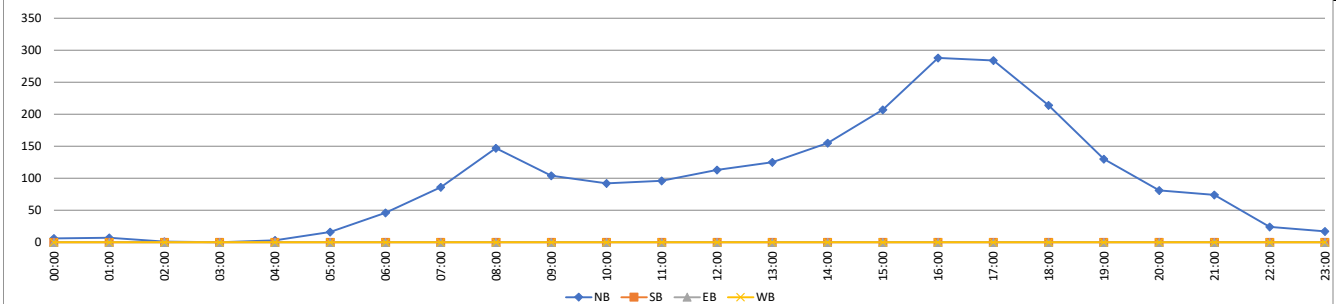
Day: Wednesday

City: Glen Allen

Date: 1/24/2024

Project #: VA24_250002_006

DAILY TOTALS						NB				SB				EB				WB				Total		DAILY TOTALS					
						2,316				0				0				0				2,316							
15-Minutes Interval												Hourly Intervals																	
TIME	NB	SB	EB	WB	TOTAL	TIME	NB	SB	EB	WB	TOTAL	TIME	NB	SB	EB	WB	TOTAL												
0:00	2				2	12:00	33				33	00:00	01:00	6			6												
0:15	2				2	12:15	24				24	01:00	02:00	7			7												
0:30	1				1	12:30	31				31	02:00	03:00	1			1												
0:45	1				1	12:45	25				25	03:00	04:00	0			0												
1:00	2				2	13:00	29				29	04:00	05:00	3			3												
1:15	1				1	13:15	28				28	05:00	06:00	16			16												
1:30	3				3	13:30	29				29	06:00	07:00	46			46												
1:45	1				1	13:45	39				39	07:00	08:00	86			86												
2:00	0				0	14:00	40				40	08:00	09:00	147			147												
2:15	0				0	14:15	46				46	09:00	10:00	104			104												
2:30	0				0	14:30	36				36	10:00	11:00	92			92												
2:45	1				1	14:45	33				33	11:00	12:00	96			96												
3:00	0				0	15:00	44				44	12:00	13:00	113			113												
3:15	0				0	15:15	42				42	13:00	14:00	125			125												
3:30	0				0	15:30	52				52	14:00	15:00	155			155												
3:45	0				0	15:45	69				69	15:00	16:00	207			207												
4:00	0				0	16:00	74				74	16:00	17:00	288			288												
4:15	1				1	16:15	64				64	17:00	18:00	284			284												
4:30	2				2	16:30	71				71	18:00	19:00	214			214												
4:45	0				0	16:45	79				79	19:00	20:00	130			130												
5:00	6				6	17:00	71				71	20:00	21:00	81			81												
5:15	2				2	17:15	93				93	21:00	22:00	74			74												
5:30	5				5	17:30	73				73	22:00	23:00	24			24												
5:45	3				3	17:45	47				47	23:00	00:00	17			17												
6:00	7				7	18:00	67				67	STATISTICS																	
6:15	4				4	18:15	58				58																		
6:30	17				17	18:30	58				58	Peak Period Volume Peak Hour Peak Volume Peak Hour Factor	00:00 to 12:00				604 8:00 147 0.896												
6:45	18				18	18:45	31				31																		
7:00	9				9	19:00	38				38																		
7:15	23				23	19:15	36				36																		
7:30	23				23	19:30	28				28																		
7:45	31				31	19:45	28				28	Peak Period Volume Peak Hour Peak Volume Peak Hour Factor	12:00 to 00:00				1712 16:45 316 0.849												
8:00	33				33	20:00	29				29																		
8:15	41				41	20:15	17				17																		
8:30	39				39	20:30	21				21																		
8:45	34				34	20:45	14				14																		
9:00	29				29	21:00	19				19	Peak Period Volume Peak Hour Peak Volume Peak Hour Factor	07:00 to 09:00				233 8:00 147 0.896												
9:15	29				29	21:15	23				23																		
9:30	16				16	21:30	15				15																		
9:45	30				30	21:45	17				17																		
10:00	23				23	22:00	6				6																		
10:15	21				21	22:15	10				10	Peak Period Volume Peak Hour Peak Volume Peak Hour Factor	16:00 to 18:00				572 16:45 316 0.849												
10:30	20				20	22:30	3				3																		
10:45	28				28	22:45	5				5																		
11:00	26				26	23:00	4				4																		
11:15	18				18	23:15	6				6																		
11:30	23				23	23:30	6				6	Peak Volume Peak Hour Factor	316 0.849				316 0.849												
11:45	29				29	23:45	1				1																		
TOTALS	604	0	0	0	604	TOTALS	1712	0	0	0	1712																		
SPLIT %	100%	0%	0%	0%	26%	SPLIT %	100%	0%	0%	0%	74%																		



VOLUME**I-295 WB Off Ramp to NB Rte 33/Staples Mill Rd E/O Route 33/Staples Mill Rd**

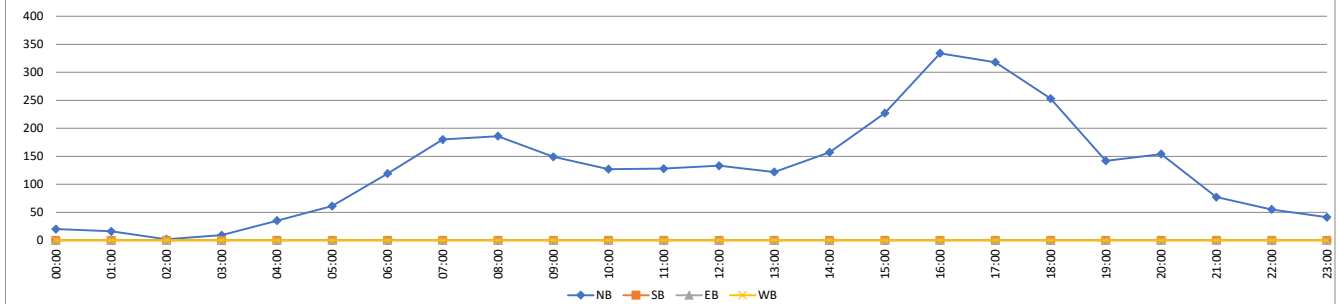
Day: Wednesday

City: Glen Allen

Date: 9/13/2023

Project #: VA23_250033_009

DAILY TOTALS						NB				SB				EB				WB				Total		DAILY TOTALS					
						3,045				0				0				0				3,045							
15-Minutes Interval												Hourly Intervals																	
TIME	NB	SB	EB	WB	TOTAL	TIME	NB	SB	EB	WB	TOTAL	TIME	NB	SB	EB	WB	TOTAL												
00:00	6	0			6	12:00	35	0			35	00:00	01:00	20	0		20												
00:15	8	0			8	12:15	31	0			31	01:00	02:00	16	0		16												
00:30	3	0			3	12:30	34	0			34	02:00	03:00	2	0		2												
00:45	3	0			3	12:45	33	0			33	03:00	04:00	9	0		9												
01:00	9	0			9	13:00	28	0			28	04:00	05:00	35	0		35												
01:15	2	0			2	13:15	27	0			27	05:00	06:00	61	0		61												
01:30	2	0			2	13:30	35	0			35	06:00	07:00	119	0		119												
01:45	3	0			3	13:45	32	0			32	07:00	08:00	180	0		180												
02:00	0	0			0	14:00	38	0			38	08:00	09:00	186	0		186												
02:15	2	0			2	14:15	42	0			42	09:00	10:00	149	0		149												
02:30	0	0			0	14:30	39	0			39	10:00	11:00	127	0		127												
02:45	0	0			0	14:45	38	0			38	11:00	12:00	128	0		128												
03:00	0	0			0	15:00	49	0			49	12:00	13:00	133	0		133												
03:15	3	0			3	15:15	52	0			52	13:00	14:00	122	0		122												
03:30	1	0			1	15:30	53	0			53	14:00	15:00	157	0		157												
03:45	5	0			5	15:45	73	0			73	15:00	16:00	227	0		227												
04:00	7	0			7	16:00	83	0			83	16:00	17:00	334	0		334												
04:15	9	0			9	16:15	74	0			74	17:00	18:00	318	0		318												
04:30	7	0			7	16:30	84	0			84	18:00	19:00	253	0		253												
04:45	12	0			12	16:45	93	0			93	19:00	20:00	142	0		142												
05:00	17	0			17	17:00	78	0			78	20:00	21:00	154	0		154												
05:15	7	0			7	17:15	82	0			82	21:00	22:00	77	0		77												
05:30	12	0			12	17:30	81	0			81	22:00	23:00	55	0		55												
05:45	25	0			25	17:45	77	0			77	23:00	00:00	41	0		41												
06:00	20	0			20	18:00	69	0			69	STATISTICS																	
06:15	23	0			23	18:15	66	0			66		NB	SB	EB	WB	TOTAL												
06:30	37	0			37	18:30	59	0			59	Peak Period	00:00		to		12:00												
06:45	39	0			39	18:45	59	0			59	Volume	1032				1032												
07:00	40	0			40	19:00	35	0			35	Peak Hour	8:15				8:15												
07:15	41	0			41	19:15	37	0			37	Peak Volume	192				192												
07:30	51	0			51	19:30	28	0			28	Peak Hour Factor	0.941				0.941												
07:45	48	0			48	19:45	42	0			42																		
08:00	41	0			41	20:00	30	0			30	Peak Period	12:00		to		00:00												
08:15	49	0			49	20:15	38	0			38	Volume	2013				2013												
08:30	51	0			51	20:30	39	0			39	Peak Hour	16:30				16:30												
08:45	45	0			45	20:45	47	0			47	Peak Volume	337				337												
09:00	47	0			47	21:00	27	0			27	Peak Hour Factor	0.906				0.906												
09:15	40	0			40	21:15	21	0			21																		
09:30	34	0			34	21:30	14	0			14	Peak Period	07:00		to		09:00												
09:45	28	0			28	21:45	15	0			15	Volume	366				366												
10:00	30	0			30	22:00	15	0			15	Peak Hour	7:30				7:30												
10:15	39	0			39	22:15	11	0			11	Peak Volume	189				189												
10:30	26	0			26	22:30	13	0			13	Peak Hour Factor	0.926				0.926												
10:45	32	0			32	22:45	16	0			16																		
11:00	32	0			32	23:00	7	0			7	Peak Period	16:00		to		18:00												
11:15	28	0			28	23:15	16	0			16	Volume	652				652												
11:30	32	0			32	23:30	11	0			11	Peak Hour	16:30				16:30												
11:45	36	0			36	23:45	7	0			7	Peak Volume	337				337												
TOTALS	1032	0	0	0	1032	TOTALS	2013	0	0	0	2013	Peak Hour Factor	0.906				0.906												
SPLIT %	100%	0%	0%	0%	34%	SPLIT %	100%	0%	0%	0%	66%																		

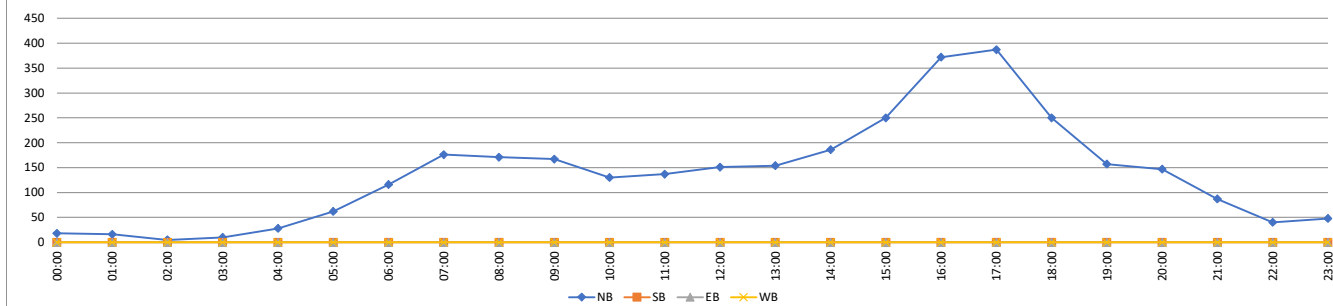


VOLUME**I-295 WB Off Ramp to NB Rte 33/Staples Mill Rd E/O Route 33/Staples Mill Rd**

Day: Thursday
Date: 9/14/2023

City: Glen Allen
Project #: VA23_250033_009

DAILY TOTALS						NB	SB	EB	WB	Total	DAILY TOTALS							
						3,265	0	0	0	3,265								
15-Minutes Interval												Hourly Intervals						
TIME	NB	SB	EB	WB	TOTAL	TIME	NB	SB	EB	WB	TOTAL	TIME	NB	SB	EB	WB	TOTAL	
00:00	7	0			7	12:00	25	0			25	00:00	01:00	18	0			18
00:15	7	0			7	12:15	26	0			26	01:00	02:00	16	0			16
00:30	2	0			2	12:30	49	0			49	02:00	03:00	5	0			5
00:45	2	0			2	12:45	51	0			51	03:00	04:00	10	0			10
01:00	4	0			4	13:00	45	0			45	04:00	05:00	28	0			28
01:15	6	0			6	13:15	34	0			34	05:00	06:00	62	0			62
01:30	5	0			5	13:30	43	0			43	06:00	07:00	116	0			116
01:45	1	0			1	13:45	32	0			32	07:00	08:00	176	0			176
02:00	1	0			1	14:00	44	0			44	08:00	09:00	171	0			171
02:15	1	0			1	14:15	41	0			41	09:00	10:00	167	0			167
02:30	3	0			3	14:30	48	0			48	10:00	11:00	130	0			130
02:45	0	0			0	14:45	53	0			53	11:00	12:00	137	0			137
03:00	4	0			4	15:00	57	0			57	12:00	13:00	151	0			151
03:15	3	0			3	15:15	40	0			40	13:00	14:00	154	0			154
03:30	1	0			1	15:30	81	0			81	14:00	15:00	186	0			186
03:45	2	0			2	15:45	72	0			72	15:00	16:00	250	0			250
04:00	5	0			5	16:00	87	0			87	16:00	17:00	372	0			372
04:15	6	0			6	16:15	100	0			100	17:00	18:00	387	0			387
04:30	7	0			7	16:30	85	0			85	18:00	19:00	250	0			250
04:45	10	0			10	16:45	100	0			100	19:00	20:00	157	0			157
05:00	18	0			18	17:00	101	0			101	20:00	21:00	147	0			147
05:15	10	0			10	17:15	106	0			106	21:00	22:00	87	0			87
05:30	14	0			14	17:30	99	0			99	22:00	23:00	40	0			40
05:45	20	0			20	17:45	81	0			81	23:00	00:00	48	0			48
06:00	19	0			19	18:00	88	0			88	STATISTICS						
06:15	23	0			23	18:15	52	0			52							
06:30	40	0			40	18:30	59	0			59	Peak Period Volume Peak Hour Peak Volume Peak Hour Factor	00:00 to 12:00					
06:45	34	0			34	18:45	51	0			51		1036	7:15				1036
07:00	44	0			44	19:00	41	0			41		7:15	7:15				7:15
07:15	37	0			37	19:15	40	0			40		186	186				186
07:30	52	0			52	19:30	40	0			40		0.861	0.861				0.861
07:45	43	0			43	19:45	36	0			36	Peak Period Volume Peak Hour Peak Volume Peak Hour Factor	12:00 to 00:00					
08:00	54	0			54	20:00	40	0			40		2229	2229				2229
08:15	33	0			33	20:15	44	0			44		16:45	16:45				16:45
08:30	44	0			44	20:30	33	0			33		406	406				406
08:45	40	0			40	20:45	30	0			30		0.958	0.958				0.958
09:00	41	0			41	21:00	22	0			22	Peak Period Volume Peak Hour Peak Volume Peak Hour Factor	07:00 to 09:00					
09:15	46	0			46	21:15	21	0			21		347	347				347
09:30	45	0			45	21:30	32	0			32		7:15	7:15				7:15
09:45	35	0			35	21:45	12	0			12		186	186				186
10:00	24	0			24	22:00	14	0			14		0.861	0.861				0.861
10:15	39	0			39	22:15	8	0			8	Peak Period Volume Peak Hour Peak Volume Peak Hour Factor	16:00 to 18:00					
10:30	29	0			29	22:30	8	0			8		759	759				759
10:45	38	0			38	22:45	10	0			10		16:45	16:45				16:45
11:00	39	0			39	23:00	11	0			11		406	406				406
11:15	26	0			26	23:15	10	0			10		0.958	0.958				0.958
11:30	31	0			31	23:30	15	0			15							
11:45	41	0			41	23:45	12	0			12							
TOTALS	1036	0	0	0	1036	TOTALS	2229	0	0	0	2229							
SPLIT %	100%	0%	0%	0%	32%	SPLIT %	100%	0%	0%	0%	68%							



VOLUME**Rte 33/Staples Mill Rd NB Off Ramp to EB I-295 E/O Route 33/Staples Mill Rd**

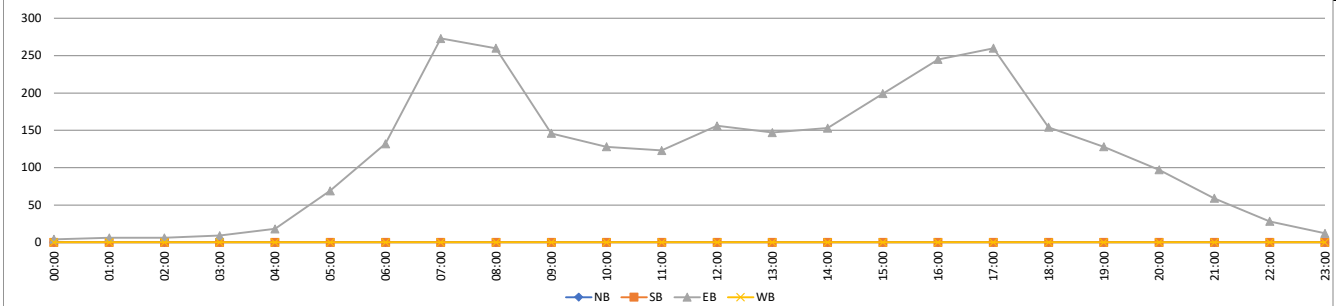
Day: Wednesday

City: Glen Allen

Date: 9/13/2023

Project #: VA23_250033_010

DAILY TOTALS						NB	SB	EB	WB	Total	DAILY TOTALS											
						0	0	2,812	0	2,812												
15-Minutes Interval												Hourly Intervals										
TIME	NB	SB	EB	WB	TOTAL	TIME	NB	SB	EB	WB	TOTAL	TIME	NB	SB	EB	WB	TOTAL					
00:00			1	0	1	12:00			44	0	44	00:00	01:00			4	0	4				
00:15			1	0	1	12:15			41	0	41	01:00	02:00			6	0	6				
00:30			1	0	1	12:30			31	0	31	02:00	03:00			6	0	6				
00:45			1	0	1	12:45			40	0	40	03:00	04:00			9	0	9				
01:00			4	0	4	13:00			34	0	34	04:00	05:00			18	0	18				
01:15			0	0	0	13:15			36	0	36	05:00	06:00			69	0	69				
01:30			1	0	1	13:30			43	0	43	06:00	07:00			132	0	132				
01:45			1	0	1	13:45			34	0	34	07:00	08:00			273	0	273				
02:00			2	0	2	14:00			43	0	43	08:00	09:00			260	0	260				
02:15			1	0	1	14:15			28	0	28	09:00	10:00			146	0	146				
02:30			2	0	2	14:30			41	0	41	10:00	11:00			128	0	128				
02:45			1	0	1	14:45			41	0	41	11:00	12:00			123	0	123				
03:00			0	0	0	15:00			35	0	35	12:00	13:00			156	0	156				
03:15			4	0	4	15:15			53	0	53	13:00	14:00			147	0	147				
03:30			1	0	1	15:30			56	0	56	14:00	15:00			153	0	153				
03:45			4	0	4	15:45			55	0	55	15:00	16:00			199	0	199				
04:00			5	0	5	16:00			62	0	62	16:00	17:00			245	0	245				
04:15			1	0	1	16:15			69	0	69	17:00	18:00			260	0	260				
04:30			5	0	5	16:30			68	0	68	18:00	19:00			154	0	154				
04:45			7	0	7	16:45			46	0	46	19:00	20:00			128	0	128				
05:00			9	0	9	17:00			68	0	68	20:00	21:00			97	0	97				
05:15			19	0	19	17:15			70	0	70	21:00	22:00			59	0	59				
05:30			19	0	19	17:30			58	0	58	22:00	23:00			28	0	28				
05:45			22	0	22	17:45			64	0	64	23:00	00:00			12	0	12				
06:00			27	0	27	18:00			46	0	46	STATISTICS										
06:15			25	0	25	18:15			35	0	35		NB	SB	EB	WB	TOTAL					
06:30			37	0	37	18:30			36	0	36	Peak Period Volume Peak Hour Peak Volume Peak Hour Factor	00:00 to 12:00									
06:45			43	0	43	18:45			37	0	37				1174							
07:00			49	0	49	19:00			36	0	36				7:30							
07:15			68	0	68	19:15			25	0	25				298							
07:30			82	0	82	19:30			33	0	33	Peak Hour Factor			0.909							
07:45			74	0	74	19:45			34	0	34	Peak Period	12:00 to 00:00									
08:00			69	0	69	20:00			33	0	33	Volume			1638							
08:15			73	0	73	20:15			20	0	20	Peak Hour			17:00							
08:30			56	0	56	20:30			25	0	25	Peak Volume			260							
08:45			62	0	62	20:45			19	0	19	Peak Hour Factor			0.929							
09:00			44	0	44	21:00			25	0	25	Peak Period	07:00 to 09:00									
09:15			36	0	36	21:15			11	0	11	Volume			533							
09:30			39	0	39	21:30			12	0	12	Peak Hour			7:30							
09:45			27	0	27	21:45			11	0	11	Peak Volume			298							
10:00			27	0	27	22:00			14	0	14	Peak Hour Factor			0.909							
10:15			25	0	25	22:15			5	0	5	Peak Period	16:00 to 18:00									
10:30			38	0	38	22:30			4	0	4	Volume			505							
10:45			38	0	38	22:45			5	0	5	Peak Hour			17:00							
11:00			35	0	35	23:00			5	0	5	Peak Volume			260							
11:15			28	0	28	23:15			2	0	2	Peak Hour Factor			0.929							
11:30			29	0	29	23:30			4	0	4											
11:45			31	0	31	23:45			1	0	1											
TOTALS	0	0	1174	0	1174	TOTALS	0	0	1638	0	1638											
SPLIT %	0%	0%	100%	0%	42%	SPLIT %	0%	0%	100%	0%	58%											

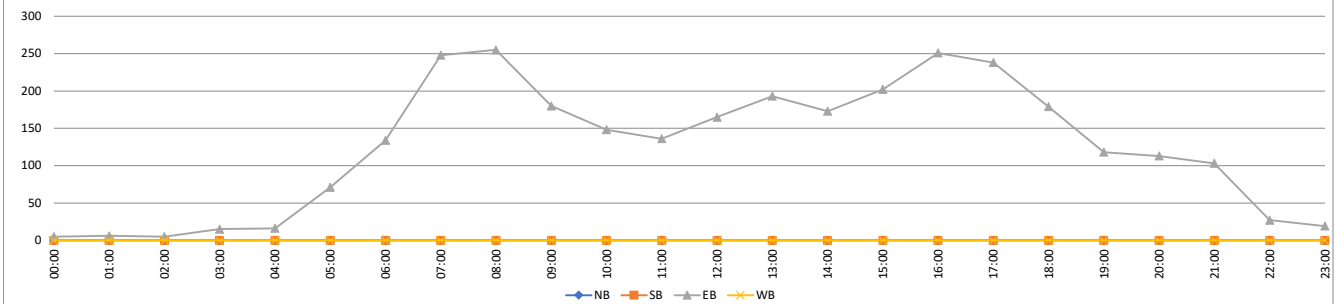


VOLUME**Rte 33/Staples Mill Rd NB Off Ramp to EB I-295 E/O Route 33/Staples Mill Rd**

Day: Thursday
Date: 9/14/2023

City: Glen Allen
Project #: VA23_250033_010

DAILY TOTALS						NB	SB	EB	WB	Total	DAILY TOTALS						
						0	0	3,000	0	3,000							
15-Minutes Interval												Hourly Intervals					
TIME	NB	SB	EB	WB	TOTAL	TIME	NB	SB	EB	WB	TOTAL	TIME	NB	SB	EB	WB	TOTAL
00:00			2	0	2	12:00			38	0	38	00:00	01:00		5	0	5
00:15			2	0	2	12:15			40	0	40	01:00	02:00		6	0	6
00:30			1	0	1	12:30			39	0	39	02:00	03:00		5	0	5
00:45			0	0	0	12:45			48	0	48	03:00	04:00		15	0	15
01:00			3	0	3	13:00			41	0	41	04:00	05:00		16	0	16
01:15			1	0	1	13:15			46	0	46	05:00	06:00		71	0	71
01:30			1	0	1	13:30			60	0	60	06:00	07:00		134	0	134
01:45			1	0	1	13:45			46	0	46	07:00	08:00		248	0	248
02:00			0	0	0	14:00			37	0	37	08:00	09:00		255	0	255
02:15			1	0	1	14:15			46	0	46	09:00	10:00		180	0	180
02:30			1	0	1	14:30			45	0	45	10:00	11:00		148	0	148
02:45			3	0	3	14:45			45	0	45	11:00	12:00		136	0	136
03:00			1	0	1	15:00			53	0	53	12:00	13:00		165	0	165
03:15			1	0	1	15:15			46	0	46	13:00	14:00		193	0	193
03:30			7	0	7	15:30			55	0	55	14:00	15:00		173	0	173
03:45			6	0	6	15:45			48	0	48	15:00	16:00		202	0	202
04:00			3	0	3	16:00			59	0	59	16:00	17:00		251	0	251
04:15			5	0	5	16:15			65	0	65	17:00	18:00		238	0	238
04:30			3	0	3	16:30			60	0	60	18:00	19:00		179	0	179
04:45			5	0	5	16:45			67	0	67	19:00	20:00		118	0	118
05:00			12	0	12	17:00			61	0	61	20:00	21:00		113	0	113
05:15			15	0	15	17:15			54	0	54	21:00	22:00		103	0	103
05:30			19	0	19	17:30			54	0	54	22:00	23:00		27	0	27
05:45			25	0	25	17:45			69	0	69	23:00	00:00		19	0	19
06:00			20	0	20	18:00			61	0	61	STATISTICS					
06:15			33	0	33	18:15			42	0	42						
06:30			41	0	41	18:30			40	0	40	Peak Period Volume Peak Hour Peak Volume Peak Hour Factor	00:00	to	12:00		
06:45			40	0	40	18:45			36	0	36			1219	1219		
07:00			41	0	41	19:00			29	0	29			7:15	7:15		
07:15			66	0	66	19:15			34	0	34			264	264		
07:30			79	0	79	19:30			27	0	27			0.835	0.835		
07:45			62	0	62	19:45			28	0	28	Peak Period Volume Peak Hour Peak Volume Peak Hour Factor	12:00	to	00:00		
08:00			57	0	57	20:00			39	0	39			1781	1781		
08:15			61	0	61	20:15			36	0	36			16:15	16:15		
08:30			81	0	81	20:30			17	0	17			253	253		
08:45			56	0	56	20:45			21	0	21			0.944	0.944		
09:00			31	0	31	21:00			32	0	32	Peak Period Volume Peak Hour Peak Volume Peak Hour Factor	07:00	to	09:00		
09:15			68	0	68	21:15			36	0	36			503	503		
09:30			33	0	33	21:30			20	0	20			7:15	7:15		
09:45			48	0	48	21:45			15	0	15			264	264		
10:00			39	0	39	22:00			7	0	7			0.835	0.835		
10:15			34	0	34	22:15			6	0	6	Peak Period Volume Peak Hour Peak Volume Peak Hour Factor	16:00	to	18:00		
10:30			39	0	39	22:30			9	0	9			489	489		
10:45			36	0	36	22:45			5	0	5			16:15	16:15		
11:00			30	0	30	23:00			8	0	8			253	253		
11:15			34	0	34	23:15			3	0	3			0.944	0.944		
11:30			32	0	32	23:30			7	0	7						
11:45			40	0	40	23:45			1	0	1						
TOTALS	0	0	1219	0	1219	TOTALS	0	0	1781	0	1781						
SPLIT %	0%	0%	100%	0%	41%	SPLIT %	0%	0%	100%	0%	59%						



Appendix D: Synchro 11™ Outputs

Construction Peak

2025 Existing Conditions – AM Peak

Queues

2025 Existing Construction Conditions

1: Route 33 & Old Mountain Road/Hunton Park Boulevard

AM Peak Hour



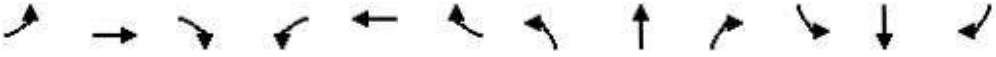
Lane Group	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	77	78	12	3	346	32	4	716
v/c Ratio	0.26	0.26	0.03	0.01	0.24	0.04	0.01	0.48
Control Delay (s/veh)	21.9	22.0	0.1	7.5	11.2	0.1	7.3	13.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	21.9	22.0	0.1	7.5	11.2	0.1	7.3	13.1
Queue Length 50th (ft)	16	16	0	1	27	0	1	64
Queue Length 95th (ft)	56	56	0	3	68	0	3	140
Internal Link Dist (ft)		602			695			1222
Turn Bay Length (ft)	215		530	175			350	
Base Capacity (vph)	988	988	1010	548	3105	1429	854	3195
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.08	0.08	0.01	0.01	0.11	0.02	0.00	0.22
Intersection Summary								

HCM Signalized Intersection Capacity Analysis

2025 Existing Construction Conditions

1: Route 33 & Old Mountain Road/Hunton Park Boulevard

AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕		↗	↖	↗	↗	↕	↗	↗	↕	↕
Traffic Volume (vph)	0	0	0	115	0	9	2	256	24	3	530	0
Future Volume (vph)	0	0	0	115	0	9	2	256	24	3	530	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				7.5	7.5	7.5	9.8	9.8	9.8	9.8	9.8	
Lane Util. Factor				0.95	0.95	1.00	1.00	0.95	1.00	1.00	0.95	
Frt				1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	
Flt Protected				0.95	0.95	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)				1698	1698	1615	1203	3406	1553	1805	3505	
Flt Permitted				0.95	0.95	1.00	0.38	1.00	1.00	0.54	1.00	
Satd. Flow (perm)				1698	1698	1615	481	3406	1553	1034	3505	
Peak-hour factor, PHF	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74
Adj. Flow (vph)	0	0	0	155	0	12	3	346	32	4	716	0
RTOR Reduction (vph)	0	0	0	0	0	10	0	0	20	0	0	0
Lane Group Flow (vph)	0	0	0	77	78	2	3	346	12	4	716	0
Heavy Vehicles (%)	0%	0%	0%	1%	0%	0%	50%	6%	4%	0%	3%	0%
Turn Type				Split	NA	Perm	D.P+P	NA	Perm	D.P+P	NA	
Protected Phases		4		3	3		5	2		1	6	
Permitted Phases	4					3	6		2	2		
Actuated Green, G (s)				8.8	8.8	8.8	22.1	21.3	21.3	22.1	21.3	
Effective Green, g (s)				8.8	8.8	8.8	22.1	21.3	21.3	22.1	21.3	
Actuated g/C Ratio				0.15	0.15	0.15	0.38	0.37	0.37	0.38	0.37	
Clearance Time (s)				7.5	7.5	7.5	9.8	9.8	9.8	9.8	9.8	
Vehicle Extension (s)				3.0	3.0	3.0	3.0	4.0	4.0	3.0	4.0	
Lane Grp Cap (vph)				257	257	245	193	1250	570	404	1287	
v/s Ratio Prot				0.05	c0.05		c0.00	0.10		0.00	c0.20	
v/s Ratio Perm						0.00	0.01		0.01	0.00		
v/c Ratio				0.30	0.30	0.01	0.02	0.28	0.02	0.01	0.56	
Uniform Delay, d1				21.9	21.9	20.9	11.1	12.9	11.7	11.1	14.6	
Progression Factor				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2				0.7	0.7	0.0	0.0	0.2	0.0	0.0	0.6	
Delay (s)				22.5	22.5	20.9	11.2	13.1	11.7	11.1	15.2	
Level of Service				C	C	C	B	B	B	B	B	
Approach Delay (s/veh)		0.0			22.4			13.0			15.2	
Approach LOS		A			C			B			B	
Intersection Summary												
HCM 2000 Control Delay (s/veh)			15.5									
HCM 2000 Volume to Capacity ratio			0.61									
Actuated Cycle Length (s)			58.0									
Intersection Capacity Utilization			34.1%									
Analysis Period (min)			15									
c Critical Lane Group												

Intersection						
Int Delay, s/veh	0.1					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	1	5	0	217	526	0
Future Vol, veh/h	1	5	0	217	526	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	72	72	72	72	72	72
Heavy Vehicles, %	0	0	0	8	3	0
Mvmt Flow	1	7	0	301	731	0
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	1032	731	731	0	-	0
Stage 1	731	-	-	-	-	-
Stage 2	301	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	260	425	883	-	-	-
Stage 1	480	-	-	-	-	-
Stage 2	755	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	260	425	883	-	-	-
Mov Cap-2 Maneuver	260	-	-	-	-	-
Stage 1	480	-	-	-	-	-
Stage 2	755	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s/v	14.6	0		0		
HCM LOS	B					
Minor Lane/Major Mvmt	NBL	NBTEBLn1	SBT	SBR		
Capacity (veh/h)	883	-	384	-	-	
HCM Lane V/C Ratio	-	-	0.022	-	-	
HCM Control Delay (s/veh)	0	-	14.6	-	-	
HCM Lane LOS	A	-	B	-	-	
HCM 95th %tile Q (veh)	0	-	0.1	-	-	

Intersection						
Int Delay, s/veh	0.6					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	W	W	W	W	W	W
Traffic Vol, veh/h	20	2	198	3	1	470
Future Vol, veh/h	20	2	198	3	1	470
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	70	70	70	70	70	70
Heavy Vehicles, %	0	0	8	0	0	3
Mvmt Flow	29	3	283	4	1	671
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	958	285	0	0	287	0
Stage 1	285	-	-	-	-	-
Stage 2	673	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	288	759	-	-	1287	-
Stage 1	768	-	-	-	-	-
Stage 2	511	-	-	-	-	-
Platoon blocked, %			-	-	-	-
Mov Cap-1 Maneuver	288	759	-	-	1287	-
Mov Cap-2 Maneuver	288	-	-	-	-	-
Stage 1	768	-	-	-	-	-
Stage 2	510	-	-	-	-	-
Approach	WB	NB	SB			
HCM Control Delay, s/v	18.2	0	0			
HCM LOS	C					
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT		
Capacity (veh/h)	-	-	305	1287	-	
HCM Lane V/C Ratio	-	-	0.103	0.001	-	
HCM Control Delay (s/veh)	-	-	18.2	7.8	0	
HCM Lane LOS	-	-	C	A	A	
HCM 95th %tile Q (veh)	-	-	0.3	0	-	

Intersection												
Int Delay, s/veh	5.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	6	1	11	13	1	3	2	7	5	15	2
Future Vol, veh/h	0	6	1	11	13	1	3	2	7	5	15	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	83	83	83	83	83	83	83	83	83	83	83	83
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	0	7	1	13	16	1	4	2	8	6	18	2
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	17	0	0	8	0	0	61	51	8	56	51	17
Stage 1	-	-	-	-	-	-	8	8	-	43	43	-
Stage 2	-	-	-	-	-	-	53	43	-	13	8	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1613	-	-	1625	-	-	939	844	1080	946	844	1068
Stage 1	-	-	-	-	-	-	1019	893	-	976	863	-
Stage 2	-	-	-	-	-	-	965	863	-	1013	893	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1613	-	-	1625	-	-	916	837	1080	931	837	1068
Mov Cap-2 Maneuver	-	-	-	-	-	-	916	837	-	931	837	-
Stage 1	-	-	-	-	-	-	1019	893	-	976	856	-
Stage 2	-	-	-	-	-	-	935	856	-	1002	893	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s/v	0			3.2			8.7			9.2		
HCM LOS							A			A		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	988	1613	-	-	1625	-	-	874				
HCM Lane V/C Ratio	0.015	-	-	-	0.008	-	-	0.03				
HCM Control Delay (s/veh)	8.7	0	-	-	7.2	0	-	9.2				
HCM Lane LOS	A	A	-	-	A	A	-	A				
HCM 95th %tile Q (veh)	0	0	-	-	0	-	-	0.1				

Construction Peak

2025 Existing Conditions – PM Peak

Queues

2025 Existing Construction Conditions

1: Route 33 & Old Mountain Road/Hunton Park Boulevard

PM Peak Hour



Lane Group	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	4	71	71	11	6	627	190	15	472
v/c Ratio	0.01	0.25	0.25	0.03	0.01	0.35	0.21	0.03	0.27
Control Delay (s/veh)	0.0	25.8	25.8	0.1	9.3	13.3	3.8	9.5	12.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	0.0	25.8	25.8	0.1	9.3	13.3	3.8	9.5	12.6
Queue Length 50th (ft)	0	14	14	0	1	53	0	2	38
Queue Length 95th (ft)	0	81	81	0	7	202	44	13	148
Internal Link Dist (ft)	354		602			695			1222
Turn Bay Length (ft)		215		530	175			350	
Base Capacity (vph)	1016	997	997	867	875	3125	1444	803	3095
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.00	0.07	0.07	0.01	0.01	0.20	0.13	0.02	0.15
Intersection Summary									

HCM Signalized Intersection Capacity Analysis

2025 Existing Construction Conditions

1: Route 33 & Old Mountain Road/Hunton Park Boulevard

PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕		↗	↖	↗	↗	↕	↗	↗	↕	↕
Traffic Volume (vph)	0	0	4	132	0	10	6	583	177	14	439	0
Future Volume (vph)	0	0	4	132	0	10	6	583	177	14	439	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		7.0		7.5	7.5	7.5	9.8	9.8	9.8	9.8	9.8	
Lane Util. Factor		1.00		0.95	0.95	1.00	1.00	0.95	1.00	1.00	0.95	
Frt		0.87		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	
Flt Protected		1.00		0.95	0.95	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1644		1681	1681	1346	1805	3471	1583	1687	3438	
Flt Permitted		1.00		0.95	0.95	1.00	0.48	1.00	1.00	0.41	1.00	
Satd. Flow (perm)		1644		1681	1681	1346	915	3471	1583	735	3438	
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	0	0	4	142	0	11	6	627	190	15	472	0
RTOR Reduction (vph)	0	4	0	0	0	10	0	0	121	0	0	0
Lane Group Flow (vph)	0	0	0	71	71	1	6	627	69	15	472	0
Heavy Vehicles (%)	0%	0%	0%	2%	0%	20%	0%	4%	2%	7%	5%	0%
Turn Type		NA		Split	NA	Perm	D.P+P	NA	Perm	D.P+P	NA	
Protected Phases		4		3	3		5	2		1	6	
Permitted Phases	4					3	6		2	2		
Actuated Green, G (s)		0.7		7.3	7.3	7.3	25.0	24.2	24.2	25.0	24.3	
Effective Green, g (s)		0.7		7.3	7.3	7.3	25.0	24.2	24.2	25.0	24.3	
Actuated g/C Ratio		0.01		0.11	0.11	0.11	0.37	0.36	0.36	0.37	0.36	
Clearance Time (s)		7.0		7.5	7.5	7.5	9.8	9.8	9.8	9.8	9.8	
Vehicle Extension (s)		3.0		3.0	3.0	3.0	3.0	4.0	4.0	3.0	4.0	
Lane Grp Cap (vph)		17		182	182	146	350	1251	570	285	1245	
v/s Ratio Prot		c0.00		c0.04	0.04		0.00	c0.18		c0.00	0.14	
v/s Ratio Perm						0.00	0.01		0.04	0.02		
v/c Ratio		0.00		0.39	0.39	0.01	0.02	0.50	0.12	0.05	0.38	
Uniform Delay, d1		32.9		27.8	27.8	26.7	13.3	16.7	14.3	13.3	15.8	
Progression Factor		1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		0.1		1.4	1.4	0.0	0.0	0.4	0.1	0.1	0.3	
Delay (s)		32.9		29.2	29.2	26.7	13.3	17.2	14.5	13.4	16.1	
Level of Service		C		C	C	C	B	B	B	B	B	
Approach Delay (s/veh)		32.9			29.0			16.5			16.0	
Approach LOS		C			C			B			B	
Intersection Summary												
HCM 2000 Control Delay (s/veh)			17.7				HCM 2000 Level of Service			B		
HCM 2000 Volume to Capacity ratio			0.45									
Actuated Cycle Length (s)			67.1				Sum of lost time (s)			34.1		
Intersection Capacity Utilization			46.4%				ICU Level of Service			A		
Analysis Period (min)			15									
c Critical Lane Group												

Intersection

Int Delay, s/veh 0.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	W			1	1	
Traffic Vol, veh/h	4	9	12	564	422	1
Future Vol, veh/h	4	9	12	564	422	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	89	89	89	89	89	89
Heavy Vehicles, %	25	0	8	5	6	0
Mvmt Flow	4	10	13	634	474	1

Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	1135	475	475
Stage 1	475	-	-
Stage 2	660	-	-
Critical Hdwy	6.65	6.2	4.18
Critical Hdwy Stg 1	5.65	-	-
Critical Hdwy Stg 2	5.65	-	-
Follow-up Hdwy	3.725	3.3	2.272
Pot Cap-1 Maneuver	202	594	1056
Stage 1	580	-	-
Stage 2	473	-	-
Platoon blocked, %			
Mov Cap-1 Maneuver	198	594	1056
Mov Cap-2 Maneuver	198	-	-
Stage 1	569	-	-
Stage 2	473	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v15.2		0.2	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBTEBLn1	SBT	SBR
Capacity (veh/h)	1056	-	368	-
HCM Lane V/C Ratio	0.013	-	0.04	-
HCM Control Delay (s/veh)	8.5	0	15.2	-
HCM Lane LOS	A	A	C	-
HCM 95th %tile Q (veh)	0	-	0.1	-

Intersection						
Int Delay, s/veh	0.9					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	W	W	W	W	W	W
Traffic Vol, veh/h	30	9	526	46	13	385
Future Vol, veh/h	30	9	526	46	13	385
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	10	0	6	2	8	4
Mvmt Flow	33	10	578	51	14	423
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	1055	604	0	0	629	0
Stage 1	604	-	-	-	-	-
Stage 2	451	-	-	-	-	-
Critical Hdwy	6.5	6.2	-	-	4.18	-
Critical Hdwy Stg 1	5.5	-	-	-	-	-
Critical Hdwy Stg 2	5.5	-	-	-	-	-
Follow-up Hdwy	3.59	3.3	-	-	2.272	-
Pot Cap-1 Maneuver	241	502	-	-	925	-
Stage 1	531	-	-	-	-	-
Stage 2	625	-	-	-	-	-
Platoon blocked, %			-	-	-	-
Mov Cap-1 Maneuver	236	502	-	-	925	-
Mov Cap-2 Maneuver	236	-	-	-	-	-
Stage 1	531	-	-	-	-	-
Stage 2	613	-	-	-	-	-
Approach	WB	NB	SB			
HCM Control Delay, s/v20.9		0	0.3			
HCM LOS	C					
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT		
Capacity (veh/h)	-	-	269	925	-	
HCM Lane V/C Ratio	-	-	0.159	0.015	-	
HCM Control Delay (s/veh)	-	-	20.9	9	0	
HCM Lane LOS	-	-	C	A	A	
HCM 95th %tile Q (veh)	-	-	0.6	0	-	

Intersection												
Int Delay, s/veh	4.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	7	38	8	7	29	14	4	19	16	9	17	2
Future Vol, veh/h	7	38	8	7	29	14	4	19	16	9	17	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	83	83	83	83	83	83	83	83	83	83	83	83
Heavy Vehicles, %	0	11	0	0	10	0	0	0	0	0	0	0
Mvmt Flow	8	46	10	8	35	17	5	23	19	11	20	2

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	52	0	0	56	0	0	138	135	51	148	132	44
Stage 1	-	-	-	-	-	-	67	67	-	60	60	-
Stage 2	-	-	-	-	-	-	71	68	-	88	72	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1567	-	-	1562	-	-	837	760	1023	825	762	1032
Stage 1	-	-	-	-	-	-	948	843	-	957	849	-
Stage 2	-	-	-	-	-	-	944	842	-	925	839	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1567	-	-	1562	-	-	812	752	1023	785	754	1032
Mov Cap-2 Maneuver	-	-	-	-	-	-	812	752	-	785	754	-
Stage 1	-	-	-	-	-	-	943	839	-	952	845	-
Stage 2	-	-	-	-	-	-	914	838	-	878	835	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	1	1	9.5	9.8
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	851	1567	-	-	1562	-	-	779
HCM Lane V/C Ratio	0.055	0.005	-	-	0.005	-	-	0.043
HCM Control Delay (s/veh)	9.5	7.3	0	-	7.3	0	-	9.8
HCM Lane LOS	A	A	A	-	A	A	-	A
HCM 95th %tile Q (veh)	0.2	0	-	-	0	-	-	0.1

Construction Peak

2034 No-Build Conditions – AM Peak

Queues

2034 No-Build Construction Conditions

1: Route 33 & Old Mountain Road/Hunton Park Boulevard

AM Peak Hour



Lane Group	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	68	69	11	2	304	28	3	630
v/c Ratio	0.23	0.23	0.03	0.01	0.18	0.03	0.00	0.36
Control Delay (s/veh)	20.7	20.7	0.1	7.5	10.8	0.1	7.3	11.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	20.7	20.7	0.1	7.5	10.8	0.1	7.3	11.7
Queue Length 50th (ft)	13	13	0	0	23	0	1	53
Queue Length 95th (ft)	60	61	0	3	74	0	3	154
Internal Link Dist (ft)		602			695			1222
Turn Bay Length (ft)	215		530	175			350	
Base Capacity (vph)	1075	1075	1084	600	3209	1472	931	3302
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.06	0.06	0.01	0.00	0.09	0.02	0.00	0.19
Intersection Summary								

HCM Signalized Intersection Capacity Analysis

1: Route 33 & Old Mountain Road/Hunton Park Boulevard

2034 No-Build Construction Conditions

AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	126	0	10	2	280	26	3	580	0
Future Volume (vph)	0	0	0	126	0	10	2	280	26	3	580	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				7.5	7.5	7.5	9.8	9.8	9.8	9.8	9.8	
Lane Util. Factor				0.95	0.95	1.00	1.00	0.95	1.00	1.00	0.95	
Frt				1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	
Flt Protected				0.95	0.95	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)				1698	1698	1615	1203	3406	1553	1805	3505	
Flt Permitted				0.95	0.95	1.00	0.41	1.00	1.00	0.57	1.00	
Satd. Flow (perm)				1698	1698	1615	523	3406	1553	1076	3505	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	137	0	11	2	304	28	3	630	0
RTOR Reduction (vph)	0	0	0	0	0	10	0	0	17	0	0	0
Lane Group Flow (vph)	0	0	0	68	69	1	2	304	11	3	630	0
Heavy Vehicles (%)	0%	0%	0%	1%	0%	0%	50%	6%	4%	0%	3%	0%
Turn Type				Split	NA	Perm	D.P+P	NA	Perm	D.P+P	NA	
Protected Phases		4		3	3		5	2		1	6	
Permitted Phases	4					3	6		2	2		
Actuated Green, G (s)				6.7	6.7	6.7	21.7	20.9	20.9	21.7	20.9	
Effective Green, g (s)				6.7	6.7	6.7	21.7	20.9	20.9	21.7	20.9	
Actuated g/C Ratio				0.12	0.12	0.12	0.39	0.38	0.38	0.39	0.38	
Clearance Time (s)				7.5	7.5	7.5	9.8	9.8	9.8	9.8	9.8	
Vehicle Extension (s)				3.0	3.0	3.0	3.0	4.0	4.0	3.0	4.0	
Lane Grp Cap (vph)				204	204	194	214	1282	584	431	1319	
v/s Ratio Prot				0.04	c0.04		c0.00	0.09		0.00	c0.18	
v/s Ratio Perm						0.00	0.00		0.01	0.00		
v/c Ratio				0.33	0.34	0.01	0.01	0.24	0.02	0.01	0.48	
Uniform Delay, d1				22.4	22.4	21.5	10.3	11.8	10.9	10.3	13.2	
Progression Factor				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2				1.0	1.0	0.0	0.0	0.1	0.0	0.0	0.4	
Delay (s)				23.3	23.4	21.5	10.3	12.0	10.9	10.3	13.5	
Level of Service				C	C	C	B	B	B	B	B	
Approach Delay (s/veh)		0.0			23.2			11.9			13.5	
Approach LOS		A			C			B			B	
Intersection Summary												
HCM 2000 Control Delay (s/veh)			14.3		HCM 2000 Level of Service					B		
HCM 2000 Volume to Capacity ratio			0.57									
Actuated Cycle Length (s)			55.5		Sum of lost time (s)					34.1		
Intersection Capacity Utilization			35.4%		ICU Level of Service					A		
Analysis Period (min)			15									
c Critical Lane Group												

Intersection						
Int Delay, s/veh	0.1					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	1	5	0	237	575	0
Future Vol, veh/h	1	5	0	237	575	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	8	3	0
Mvmt Flow	1	5	0	258	625	0

Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	883	625	625	0	-	0
Stage 1	625	-	-	-	-	-
Stage 2	258	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	319	488	966	-	-	-
Stage 1	537	-	-	-	-	-
Stage 2	790	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	319	488	966	-	-	-
Mov Cap-2 Maneuver	319	-	-	-	-	-
Stage 1	537	-	-	-	-	-
Stage 2	790	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	13.2	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	966	-	448	-	-
HCM Lane V/C Ratio	-	-	0.015	-	-
HCM Control Delay (s/veh)	0	-	13.2	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q (veh)	0	-	0	-	-

Intersection						
Int Delay, s/veh	0.5					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	22	2	217	3	1	514
Future Vol, veh/h	22	2	217	3	1	514
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	8	0	0	3
Mvmt Flow	24	2	236	3	1	559

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	799 238	0	0 239 0
Stage 1	238	-	- - -
Stage 2	561	-	- - -
Critical Hdwy	6.4 6.2	-	- 4.1 -
Critical Hdwy Stg 1	5.4	-	- - -
Critical Hdwy Stg 2	5.4	-	- - -
Follow-up Hdwy	3.5 3.3	-	- 2.2 -
Pot Cap-1 Maneuver	357 806	-	- 1340 -
Stage 1	806	-	- - -
Stage 2	575	-	- - -
Platoon blocked, %		-	- -
Mov Cap-1 Maneuver	357 806	-	- 1340 -
Mov Cap-2 Maneuver	357	-	- - -
Stage 1	806	-	- - -
Stage 2	574	-	- - -

Approach	WB	NB	SB
HCM Control Delay, s/v	15.3	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	- 374	1340	-
HCM Lane V/C Ratio	-	- 0.07	0.001	-
HCM Control Delay (s/veh)	-	- 15.3	7.7	0
HCM Lane LOS	-	- C	A	A
HCM 95th %tile Q (veh)	-	- 0.2	0	-

HCM 6th TWSC
4: Greenwood Road & Winns Church Road

2034 No-Build Construction Conditions
AM Peak Hour

Intersection												
Int Delay, s/veh	5.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	7	1	12	14	1	3	2	8	5	16	2
Future Vol, veh/h	0	7	1	12	14	1	3	2	8	5	16	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	0	8	1	13	15	1	3	2	9	5	17	2
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	16	0	0	9	0	0	60	51	9	56	51	16
Stage 1	-	-	-	-	-	-	9	9	-	42	42	-
Stage 2	-	-	-	-	-	-	51	42	-	14	9	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1615	-	-	1624	-	-	941	844	1079	946	844	1069
Stage 1	-	-	-	-	-	-	1017	892	-	978	864	-
Stage 2	-	-	-	-	-	-	967	864	-	1011	892	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1615	-	-	1624	-	-	918	837	1079	931	837	1069
Mov Cap-2 Maneuver	-	-	-	-	-	-	918	837	-	931	837	-
Stage 1	-	-	-	-	-	-	1017	892	-	978	857	-
Stage 2	-	-	-	-	-	-	938	857	-	1000	892	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s/v	0			3.2			8.7			9.2		
HCM LOS							A			A		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	995	1615	-	-	1624	-	-	873				
HCM Lane V/C Ratio	0.014	-	-	-	0.008	-	-	0.029				
HCM Control Delay (s/veh)	8.7	0	-	-	7.2	0	-	9.2				
HCM Lane LOS	A	A	-	-	A	A	-	A				
HCM 95th %tile Q (veh)	0	0	-	-	0	-	-	0.1				

Construction Peak

2034 No-Build Conditions – PM Peak

Queues

2034 No-Build Construction Conditions

1: Route 33 & Old Mountain Road/Hunton Park Boulevard

PM Peak Hour



Lane Group	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	4	77	78	12	8	686	209	16	516
v/c Ratio	0.01	0.28	0.28	0.03	0.02	0.45	0.26	0.04	0.34
Control Delay (s/veh)	0.0	27.0	27.1	0.2	9.4	14.4	3.7	9.5	13.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	0.0	27.0	27.1	0.2	9.4	14.4	3.7	9.5	13.3
Queue Length 50th (ft)	0	16	16	0	1	61	0	2	43
Queue Length 95th (ft)	0	89	90	0	9	226	45	14	164
Internal Link Dist (ft)	354		602			695			1222
Turn Bay Length (ft)		215		530	175			350	
Base Capacity (vph)	950	910	910	805	800	3006	1399	729	2977
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.00	0.08	0.09	0.01	0.01	0.23	0.15	0.02	0.17
Intersection Summary									

HCM Signalized Intersection Capacity Analysis

2034 No-Build Construction Conditions

1: Route 33 & Old Mountain Road/Hunton Park Boulevard

PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	4	144	0	11	7	638	194	15	480	0
Future Volume (vph)	0	0	4	144	0	11	7	638	194	15	480	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		7.0		7.5	7.5	7.5	9.8	9.8	9.8	9.8	9.8	
Lane Util. Factor		1.00		0.95	0.95	1.00	1.00	0.95	1.00	1.00	0.95	
Frt		0.87		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	
Flt Protected		1.00		0.95	0.95	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1644		1681	1681	1346	1805	3471	1583	1687	3438	
Flt Permitted		1.00		0.95	0.95	1.00	0.46	1.00	1.00	0.37	1.00	
Satd. Flow (perm)		1644		1681	1681	1346	877	3471	1583	651	3438	
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	0	0	4	155	0	12	8	686	209	16	516	0
RTOR Reduction (vph)	0	4	0	0	0	10	0	0	135	0	0	0
Lane Group Flow (vph)	0	0	0	77	78	2	8	686	74	16	516	0
Heavy Vehicles (%)	0%	0%	0%	2%	0%	20%	0%	4%	2%	7%	5%	0%
Turn Type		NA		Split	NA	Perm	D.P+P	NA	Perm	D.P+P	NA	
Protected Phases		4		3	3		5	2		1	6	
Permitted Phases	4					3	6		2	2		
Actuated Green, G (s)		0.7		9.5	9.5	9.5	25.5	24.7	24.7	25.5	24.8	
Effective Green, g (s)		0.7		9.5	9.5	9.5	25.5	24.7	24.7	25.5	24.8	
Actuated g/C Ratio		0.01		0.14	0.14	0.14	0.37	0.35	0.35	0.37	0.36	
Clearance Time (s)		7.0		7.5	7.5	7.5	9.8	9.8	9.8	9.8	9.8	
Vehicle Extension (s)		3.0		3.0	3.0	3.0	3.0	4.0	4.0	3.0	4.0	
Lane Grp Cap (vph)		16		228	228	183	329	1228	560	249	1221	
v/s Ratio Prot		c0.00		0.05	c0.05		0.00	c0.20		c0.00	0.15	
v/s Ratio Perm						0.00	0.01		0.05	0.02		
v/c Ratio		0.00		0.34	0.34	0.01	0.02	0.56	0.13	0.06	0.42	
Uniform Delay, d1		34.2		27.3	27.3	26.1	14.1	18.2	15.3	14.2	17.1	
Progression Factor		1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		0.1		0.9	0.9	0.0	0.0	0.7	0.1	0.1	0.3	
Delay (s)		34.3		28.2	28.2	26.1	14.2	18.8	15.4	14.3	17.4	
Level of Service		C		C	C	C	B	B	B	B	B	
Approach Delay (s/veh)		34.3			28.1			18.0			17.3	
Approach LOS		C			C			B			B	
Intersection Summary												
HCM 2000 Control Delay (s/veh)			18.9				HCM 2000 Level of Service			B		
HCM 2000 Volume to Capacity ratio			0.48									
Actuated Cycle Length (s)			69.8				Sum of lost time (s)			34.1		
Intersection Capacity Utilization			47.9%				ICU Level of Service			A		
Analysis Period (min)			15									
c Critical Lane Group												

Intersection						
Int Delay, s/veh	0.3					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	4	10	13	617	462	1
Future Vol, veh/h	4	10	13	617	462	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	25	0	8	5	6	0
Mvmt Flow	4	11	14	671	502	1
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	1202	503	503	0	-	0
Stage 1	503	-	-	-	-	-
Stage 2	699	-	-	-	-	-
Critical Hdwy	6.65	6.2	4.18	-	-	-
Critical Hdwy Stg 1	5.65	-	-	-	-	-
Critical Hdwy Stg 2	5.65	-	-	-	-	-
Follow-up Hdwy	3.725	3.3	2.272	-	-	-
Pot Cap-1 Maneuver	183	573	1031	-	-	-
Stage 1	563	-	-	-	-	-
Stage 2	453	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	179	573	1031	-	-	-
Mov Cap-2 Maneuver	179	-	-	-	-	-
Stage 1	551	-	-	-	-	-
Stage 2	453	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s/v	15.7	0.2		0		
HCM LOS	C					
Minor Lane/Major Mvmt	NBL	NBTEBLn1	SBT	SBR		
Capacity (veh/h)	1031	-	352	-	-	
HCM Lane V/C Ratio	0.014	-	0.043	-	-	
HCM Control Delay (s/veh)	8.5	0	15.7	-	-	
HCM Lane LOS	A	A	C	-	-	
HCM 95th %tile Q (veh)	0	-	0.1	-	-	

Intersection						
Int Delay, s/veh	1					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	W	W	T	T	T	T
Traffic Vol, veh/h	33	10	575	50	14	421
Future Vol, veh/h	33	10	575	50	14	421
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	10	0	6	2	8	4
Mvmt Flow	36	11	625	54	15	458
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	1140	652	0	0	679	0
Stage 1	652	-	-	-	-	-
Stage 2	488	-	-	-	-	-
Critical Hdwy	6.5	6.2	-	-	4.18	-
Critical Hdwy Stg 1	5.5	-	-	-	-	-
Critical Hdwy Stg 2	5.5	-	-	-	-	-
Follow-up Hdwy	3.59	3.3	-	-	2.272	-
Pot Cap-1 Maneuver	214	471	-	-	886	-
Stage 1	504	-	-	-	-	-
Stage 2	601	-	-	-	-	-
Platoon blocked, %			-	-	-	-
Mov Cap-1 Maneuver	209	471	-	-	886	-
Mov Cap-2 Maneuver	209	-	-	-	-	-
Stage 1	504	-	-	-	-	-
Stage 2	587	-	-	-	-	-
Approach	WB	NB	SB			
HCM Control Delay, s/v23.6		0	0.3			
HCM LOS	C					
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT		
Capacity (veh/h)	-	-	240	886	-	
HCM Lane V/C Ratio	-	-	0.195	0.017	-	
HCM Control Delay (s/veh)	-	-	23.6	9.1	0	
HCM Lane LOS	-	-	C	A	A	
HCM 95th %tile Q (veh)	-	-	0.7	0.1	-	

Intersection												
Int Delay, s/veh	4.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	8	42	9	8	32	15	4	21	17	10	19	2
Future Vol, veh/h	8	42	9	8	32	15	4	21	17	10	19	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	11	0	0	10	0	0	0	0	0	0	0
Mvmt Flow	9	46	10	9	35	16	4	23	18	11	21	2
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	51	0	0	56	0	0	142	138	51	151	135	43
Stage 1	-	-	-	-	-	-	69	69	-	61	61	-
Stage 2	-	-	-	-	-	-	73	69	-	90	74	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1568	-	-	1562	-	-	832	757	1023	821	760	1033
Stage 1	-	-	-	-	-	-	946	841	-	955	848	-
Stage 2	-	-	-	-	-	-	942	841	-	922	837	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1568	-	-	1562	-	-	805	748	1023	780	751	1033
Mov Cap-2 Maneuver	-	-	-	-	-	-	805	748	-	780	751	-
Stage 1	-	-	-	-	-	-	940	836	-	949	843	-
Stage 2	-	-	-	-	-	-	911	836	-	875	832	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s/v	1			1.1			9.5			9.9		
HCM LOS							A			A		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	846	1568	-	-	1562	-	-	774				
HCM Lane V/C Ratio	0.054	0.006	-	-	0.006	-	-	0.044				
HCM Control Delay (s/veh)	9.5	7.3	0	-	7.3	0	-	9.9				
HCM Lane LOS	A	A	A	-	A	A	-	A				
HCM 95th %tile Q (veh)	0.2	0	-	-	0	-	-	0.1				

Construction Peak

2034 Build Conditions – AM Peak

Queues

2034 Build Construction Conditions

1: Route 33 & Old Mountain Road/Hunton Park Boulevard

AM Peak Hour



Lane Group	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	68	69	11	2	657	28	3	670
v/c Ratio	0.23	0.23	0.03	0.01	0.38	0.03	0.01	0.37
Control Delay (s/veh)	21.3	21.3	0.1	7.0	11.8	0.1	7.3	11.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	21.3	21.3	0.1	7.0	11.8	0.1	7.3	11.7
Queue Length 50th (ft)	13	14	0	0	56	0	1	57
Queue Length 95th (ft)	63	63	0	3	163	0	3	165
Internal Link Dist (ft)		602			695			613
Turn Bay Length (ft)	215		530	175			350	
Base Capacity (vph)	1059	1059	1070	591	3191	1465	889	3284
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.06	0.07	0.01	0.00	0.21	0.02	0.00	0.20
Intersection Summary								

HCM Signalized Intersection Capacity Analysis

1: Route 33 & Old Mountain Road/Hunton Park Boulevard

2034 Build Construction Conditions

AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔		↔	↔	↔	↔	↕	↔	↔	↕	↔
Traffic Volume (vph)	0	0	0	126	0	10	2	604	26	3	616	0
Future Volume (vph)	0	0	0	126	0	10	2	604	26	3	616	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				7.5	7.5	7.5	9.8	9.8	9.8	9.8	9.8	
Lane Util. Factor				0.95	0.95	1.00	1.00	0.95	1.00	1.00	0.95	
Frt				1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	
Flt Protected				0.95	0.95	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)				1698	1698	1615	1203	3406	1553	1805	3505	
Flt Permitted				0.95	0.95	1.00	0.40	1.00	1.00	0.40	1.00	
Satd. Flow (perm)				1698	1698	1615	503	3406	1553	764	3505	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	137	0	11	2	657	28	3	670	0
RTOR Reduction (vph)	0	0	0	0	0	10	0	0	17	0	0	0
Lane Group Flow (vph)	0	0	0	68	69	1	2	657	11	3	670	0
Heavy Vehicles (%)	0%	0%	0%	1%	0%	0%	50%	6%	4%	0%	3%	0%
Turn Type				Split	NA	Perm	D.P+P	NA	Perm	D.P+P	NA	
Protected Phases		4		3	3		5	2		1	6	
Permitted Phases	4					3	6		2	2		
Actuated Green, G (s)				6.8	6.8	6.8	22.5	21.7	21.7	22.5	21.7	
Effective Green, g (s)				6.8	6.8	6.8	22.5	21.7	21.7	22.5	21.7	
Actuated g/C Ratio				0.12	0.12	0.12	0.40	0.38	0.38	0.40	0.38	
Clearance Time (s)				7.5	7.5	7.5	9.8	9.8	9.8	9.8	9.8	
Vehicle Extension (s)				3.0	3.0	3.0	3.0	4.0	4.0	3.0	4.0	
Lane Grp Cap (vph)				204	204	194	210	1310	597	319	1348	
v/s Ratio Prot				0.04	c0.04		c0.00	c0.19		0.00	0.19	
v/s Ratio Perm						0.00	0.00		0.01	0.00		
v/c Ratio				0.33	0.34	0.01	0.01	0.50	0.02	0.01	0.50	
Uniform Delay, d1				22.7	22.7	21.8	10.2	13.2	10.7	10.2	13.2	
Progression Factor				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2				1.0	1.0	0.0	0.0	0.4	0.0	0.0	0.4	
Delay (s)				23.7	23.7	21.8	10.2	13.6	10.8	10.2	13.6	
Level of Service				C	C	C	B	B	B	B	B	
Approach Delay (s/veh)		0.0			23.6			13.5			13.6	
Approach LOS		A			C			B			B	
Intersection Summary												
HCM 2000 Control Delay (s/veh)			14.5									
HCM 2000 Volume to Capacity ratio			0.59									
Actuated Cycle Length (s)			56.4									
Intersection Capacity Utilization			36.4%									
Analysis Period (min)			15									
c Critical Lane Group												

Intersection						
Int Delay, s/veh	0.1					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	1	5	0	241	611	0
Future Vol, veh/h	1	5	0	241	611	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	8	3	0
Mvmt Flow	1	5	0	262	664	0

Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	926	664	664	0	-	0
Stage 1	664	-	-	-	-	-
Stage 2	262	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	301	464	935	-	-	-
Stage 1	516	-	-	-	-	-
Stage 2	786	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	301	464	935	-	-	-
Mov Cap-2 Maneuver	301	-	-	-	-	-
Stage 1	516	-	-	-	-	-
Stage 2	786	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	13.6	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	935	-	426	-	-
HCM Lane V/C Ratio	-	-	0.015	-	-
HCM Control Delay (s/veh)	0	-	13.6	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q (veh)	0	-	0	-	-

Intersection						
Int Delay, s/veh	0.5					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	22	2	221	3	1	550
Future Vol, veh/h	22	2	221	3	1	550
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	8	0	0	3
Mvmt Flow	24	2	240	3	1	598

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	842	242	0	0	243	0
Stage 1	242	-	-	-	-	-
Stage 2	600	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	337	802	-	-	1335	-
Stage 1	803	-	-	-	-	-
Stage 2	552	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	337	802	-	-	1335	-
Mov Cap-2 Maneuver	337	-	-	-	-	-
Stage 1	803	-	-	-	-	-
Stage 2	551	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v	16	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	354	1335
HCM Lane V/C Ratio	-	-	0.074	0.001
HCM Control Delay (s/veh)	-	-	16	7.7
HCM Lane LOS	-	-	C	A
HCM 95th %tile Q (veh)	-	-	0.2	0

HCM 6th TWSC
4: Greenwood Road & Winns Church Road

2034 Build Construction Conditions
AM Peak Hour

Intersection												
Int Delay, s/veh	5.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	7	1	12	14	1	3	2	8	5	16	2
Future Vol, veh/h	0	7	1	12	14	1	3	2	8	5	16	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	0	8	1	13	15	1	3	2	9	5	17	2
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	16	0	0	9	0	0	60	51	9	56	51	16
Stage 1	-	-	-	-	-	-	9	9	-	42	42	-
Stage 2	-	-	-	-	-	-	51	42	-	14	9	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1615	-	-	1624	-	-	941	844	1079	946	844	1069
Stage 1	-	-	-	-	-	-	1017	892	-	978	864	-
Stage 2	-	-	-	-	-	-	967	864	-	1011	892	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1615	-	-	1624	-	-	918	837	1079	931	837	1069
Mov Cap-2 Maneuver	-	-	-	-	-	-	918	837	-	931	837	-
Stage 1	-	-	-	-	-	-	1017	892	-	978	857	-
Stage 2	-	-	-	-	-	-	938	857	-	1000	892	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s/v	0			3.2			8.7			9.2		
HCM LOS							A			A		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	995	1615	-	-	1624	-	-	873				
HCM Lane V/C Ratio	0.014	-	-	-	0.008	-	-	0.029				
HCM Control Delay (s/veh)	8.7	0	-	-	7.2	0	-	9.2				
HCM Lane LOS	A	A	-	-	A	A	-	A				
HCM 95th %tile Q (veh)	0	0	-	-	0	-	-	0.1				

Intersection								
Int Delay, s/veh	0.9							
Movement	WBL	WBR	NBU	NBT	NBR	SBU	SBL	SBT
Lane Configurations								
Traffic Vol, veh/h	36	4	0	588	0	36	0	581
Future Vol, veh/h	36	4	0	588	0	36	0	581
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	None	-	-	None	-	-	None
Storage Length	0	-	230	-	-	-	245	-
Veh in Median Storage, #	1	-	-	0	-	-	-	0
Grade, %	0	-	-	0	-	-	-	0
Peak Hour Factor	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2
Mvmt Flow	39	4	0	639	0	39	0	632

Major/Minor	Minor1	Major1		Major2				
Conflicting Flow All	1033	320	632	0	-	639	-	-
Stage 1	639	-	-	-	-	-	-	-
Stage 2	394	-	-	-	-	-	-	-
Critical Hdwy	6.84	6.94	6.44	-	-	6.44	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.52	-	-	2.52	-	-
Pot Cap-1 Maneuver	228	676	571	-	0	565	0	-
Stage 1	488	-	-	-	0	-	0	-
Stage 2	650	-	-	-	0	-	0	-
Platoon blocked, %				-				-
Mov Cap-1 Maneuver	212	676	571	-	-	562	-	-
Mov Cap-2 Maneuver	342	-	-	-	-	-	-	-
Stage 1	488	-	-	-	-	-	-	-
Stage 2	605	-	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v	16.4	0	0.7
HCM LOS	C		

Minor Lane/Major Mvmt	NBU	NBTWBLn1	SBU	SBT
Capacity (veh/h)	571	-	360	562
HCM Lane V/C Ratio	-	-	0.121	0.07
HCM Control Delay (s/veh)	0	-	16.4	11.9
HCM Lane LOS	A	-	C	B
HCM 95th %tile Q (veh)	0	-	0.4	0.2

Construction Peak

2034 Build Conditions – PM Peak

Queues

2034 Build Construction Conditions

1: Route 33 & Old Mountain Road/Hunton Park Boulevard

PM Peak Hour



Lane Group	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	4	77	78	12	8	725	209	16	865
v/c Ratio	0.01	0.28	0.29	0.03	0.02	0.45	0.25	0.04	0.55
Control Delay (s/veh)	0.0	28.9	29.0	0.2	9.0	13.9	3.5	9.1	14.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	0.0	28.9	29.0	0.2	9.0	13.9	3.5	9.1	14.9
Queue Length 50th (ft)	0	18	18	0	1	66	1	2	84
Queue Length 95th (ft)	0	94	95	0	9	239	45	14	294
Internal Link Dist (ft)	354		602			695			613
Turn Bay Length (ft)		215		530	175			350	
Base Capacity (vph)	895	866	866	774	730	2957	1379	701	2929
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.00	0.09	0.09	0.02	0.01	0.25	0.15	0.02	0.30

Intersection Summary

HCM Signalized Intersection Capacity Analysis

1: Route 33 & Old Mountain Road/Hunton Park Boulevard

2034 Build Construction Conditions

PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	4	144	0	11	7	674	194	15	804	0
Future Volume (vph)	0	0	4	144	0	11	7	674	194	15	804	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		7.0		7.5	7.5	7.5	9.8	9.8	9.8	9.8	9.8	
Lane Util. Factor		1.00		0.95	0.95	1.00	1.00	0.95	1.00	1.00	0.95	
Frt		0.87		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	
Flt Protected		1.00		0.95	0.95	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1644		1681	1681	1346	1805	3471	1583	1687	3438	
Flt Permitted		1.00		0.95	0.95	1.00	0.26	1.00	1.00	0.34	1.00	
Satd. Flow (perm)		1644		1681	1681	1346	498	3471	1583	609	3438	
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	0	0	4	155	0	12	8	725	209	16	865	0
RTOR Reduction (vph)	0	4	0	0	0	10	0	0	129	0	0	0
Lane Group Flow (vph)	0	0	0	77	78	2	8	725	80	16	865	0
Heavy Vehicles (%)	0%	0%	0%	2%	0%	20%	0%	4%	2%	7%	5%	0%
Turn Type		NA		Split	NA	Perm	D.P+P	NA	Perm	D.P+P	NA	
Protected Phases		4		3	3		5	2		1	6	
Permitted Phases	4					3	6		2	2		
Actuated Green, G (s)		0.7		9.7	9.7	9.7	28.1	27.3	27.3	28.1	27.4	
Effective Green, g (s)		0.7		9.7	9.7	9.7	28.1	27.3	27.3	28.1	27.4	
Actuated g/C Ratio		0.01		0.13	0.13	0.13	0.39	0.38	0.38	0.39	0.38	
Clearance Time (s)		7.0		7.5	7.5	7.5	9.8	9.8	9.8	9.8	9.8	
Vehicle Extension (s)		3.0		3.0	3.0	3.0	3.0	4.0	4.0	3.0	4.0	
Lane Grp Cap (vph)		15		224	224	179	205	1305	595	247	1297	
v/s Ratio Prot		c0.00		0.05	c0.05		0.00	0.21		c0.00	c0.25	
v/s Ratio Perm						0.00	0.01		0.05	0.02		
v/c Ratio		0.00		0.34	0.35	0.01	0.04	0.56	0.14	0.06	0.67	
Uniform Delay, d1		35.6		28.6	28.6	27.3	13.9	17.9	14.9	13.8	18.8	
Progression Factor		1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		0.1		0.9	0.9	0.0	0.1	0.6	0.1	0.1	1.4	
Delay (s)		35.7		29.5	29.5	27.3	14.0	18.5	15.0	13.9	20.2	
Level of Service		D		C	C	C	B	B	B	B	C	
Approach Delay (s/veh)		35.7			29.3			17.7			20.1	
Approach LOS		D			C			B			C	
Intersection Summary												
HCM 2000 Control Delay (s/veh)			19.8									
HCM 2000 Volume to Capacity ratio			0.56									
Actuated Cycle Length (s)			72.6									
Intersection Capacity Utilization			48.9%									
Analysis Period (min)			15									
c Critical Lane Group												

Intersection						
Int Delay, s/veh	0.3					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	4	10	13	653	466	1
Future Vol, veh/h	4	10	13	653	466	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	25	0	8	5	6	0
Mvmt Flow	4	11	14	710	507	1
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	1246	508	508	0	-	0
Stage 1	508	-	-	-	-	-
Stage 2	738	-	-	-	-	-
Critical Hdwy	6.65	6.2	4.18	-	-	-
Critical Hdwy Stg 1	5.65	-	-	-	-	-
Critical Hdwy Stg 2	5.65	-	-	-	-	-
Follow-up Hdwy	3.725	3.3	2.272	-	-	-
Pot Cap-1 Maneuver	172	569	1027	-	-	-
Stage 1	560	-	-	-	-	-
Stage 2	434	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	168	569	1027	-	-	-
Mov Cap-2 Maneuver	168	-	-	-	-	-
Stage 1	547	-	-	-	-	-
Stage 2	434	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s/v	16.2	0.2		0		
HCM LOS	C					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1027	-	338	-	-	
HCM Lane V/C Ratio	0.014	-	0.045	-	-	
HCM Control Delay (s/veh)	8.6	0	16.2	-	-	
HCM Lane LOS	A	A	C	-	-	
HCM 95th %tile Q (veh)	0	-	0.1	-	-	

Intersection						
Int Delay, s/veh	1.1					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	33	10	611	50	14	425
Future Vol, veh/h	33	10	611	50	14	425
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	10	0	6	2	8	4
Mvmt Flow	36	11	664	54	15	462
Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1183	691	0	0	718	0
Stage 1	691	-	-	-	-	-
Stage 2	492	-	-	-	-	-
Critical Hdwy	6.5	6.2	-	-	4.18	-
Critical Hdwy Stg 1	5.5	-	-	-	-	-
Critical Hdwy Stg 2	5.5	-	-	-	-	-
Follow-up Hdwy	3.59	3.3	-	-	2.272	-
Pot Cap-1 Maneuver	202	448	-	-	856	-
Stage 1	483	-	-	-	-	-
Stage 2	598	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	197	448	-	-	856	-
Mov Cap-2 Maneuver	197	-	-	-	-	-
Stage 1	483	-	-	-	-	-
Stage 2	584	-	-	-	-	-
Approach	WB		NB		SB	
HCM Control Delay, s/v	24.9		0		0.3	
HCM LOS	C					
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT		
Capacity (veh/h)	-	-	227	856	-	
HCM Lane V/C Ratio	-	-	0.206	0.018	-	
HCM Control Delay (s/veh)	-	-	24.9	9.3	0	
HCM Lane LOS	-	-	C	A	A	
HCM 95th %tile Q (veh)	-	-	0.8	0.1	-	

HCM 6th TWSC
4: Greenwood Road & Winns Church Road

2034 Build Construction Conditions
PM Peak Hour

Intersection												
Int Delay, s/veh	4.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	8	42	9	8	32	15	4	21	17	10	19	2
Future Vol, veh/h	8	42	9	8	32	15	4	21	17	10	19	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	11	0	0	10	0	0	0	0	0	0	0
Mvmt Flow	9	46	10	9	35	16	4	23	18	11	21	2
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	51	0	0	56	0	0	142	138	51	151	135	43
Stage 1	-	-	-	-	-	-	69	69	-	61	61	-
Stage 2	-	-	-	-	-	-	73	69	-	90	74	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1568	-	-	1562	-	-	832	757	1023	821	760	1033
Stage 1	-	-	-	-	-	-	946	841	-	955	848	-
Stage 2	-	-	-	-	-	-	942	841	-	922	837	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1568	-	-	1562	-	-	805	748	1023	780	751	1033
Mov Cap-2 Maneuver	-	-	-	-	-	-	805	748	-	780	751	-
Stage 1	-	-	-	-	-	-	940	836	-	949	843	-
Stage 2	-	-	-	-	-	-	911	836	-	875	832	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s/v	1			1.1			9.5			9.9		
HCM LOS							A			A		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	846	1568	-	-	1562	-	-	774				
HCM Lane V/C Ratio	0.054	0.006	-	-	0.006	-	-	0.044				
HCM Control Delay (s/veh)	9.5	7.3	0	-	7.3	0	-	9.9				
HCM Lane LOS	A	A	A	-	A	A	-	A				
HCM 95th %tile Q (veh)	0.2	0	-	-	0	-	-	0.1				

Intersection								
Int Delay, s/veh	24.7							
Movement	WBL	WBR	NBU	NBT	NBR	SBU	SBL	SBT
Lane Configurations								
Traffic Vol, veh/h	324	36	0	676	0	4	0	476
Future Vol, veh/h	324	36	0	676	0	4	0	476
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	None	-	-	None	-	-	None
Storage Length	0	-	230	-	-	-	245	-
Veh in Median Storage, #	1	-	-	0	-	-	-	0
Grade, %	0	-	-	0	-	-	-	0
Peak Hour Factor	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2
Mvmt Flow	352	39	0	735	0	4	0	517
Major/Minor	Minor1	Major1		Major2				
Conflicting Flow All	1002	368	517	0	-	735	-	-
Stage 1	735	-	-	-	-	-	-	-
Stage 2	267	-	-	-	-	-	-	-
Critical Hdwy	6.84	6.94	6.44	-	-	6.44	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.52	-	-	2.52	-	-
Pot Cap-1 Maneuver	~ 239	629	675	-	0	491	0	-
Stage 1	435	-	-	-	0	-	0	-
Stage 2	754	-	-	-	0	-	0	-
Platoon blocked, %				-				-
Mov Cap-1 Maneuver	~ 237	629	675	-	-	463	-	-
Mov Cap-2 Maneuver	~ 347	-	-	-	-	-	-	-
Stage 1	435	-	-	-	-	-	-	-
Stage 2	747	-	-	-	-	-	-	-
Approach	WB	NB		SB				
HCM Control Delay, s/v	104	0		0.1				
HCM LOS	F							
Minor Lane/Major Mvmt	NBU	NBTWBLn1		SBU	SBT			
Capacity (veh/h)	675	-		363	463			
HCM Lane V/C Ratio	-	-		1.078	0.009			
HCM Control Delay (s/veh)	0	-		104	12.8			
HCM Lane LOS	A	-		F	B			
HCM 95th %tile Q (veh)	0	-		14	0			
Notes								
~: Volume exceeds capacity		\$: Delay exceeds 300s			+: Computation Not Defined		*: All major volume in platoon	

2025 Existing Conditions – AM Peak

Queues

2025 Existing Conditions

1: Route 33 & Old Mountain Road/Hunton Park Boulevard

AM Peak Hour



Lane Group	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	195	195	22	5	432	88	8	967
v/c Ratio	0.51	0.51	0.04	0.01	0.28	0.11	0.02	0.62
Control Delay (s/veh)	30.4	30.4	0.2	8.8	12.7	0.6	8.7	16.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	30.4	30.4	0.2	8.8	12.7	0.6	8.7	16.5
Queue Length 50th (ft)	64	64	0	1	46	0	1	126
Queue Length 95th (ft)	192	192	0	6	128	4	8	319
Internal Link Dist (ft)		602			695			1222
Turn Bay Length (ft)	215		530	175			350	
Base Capacity (vph)	754	754	823	655	2581	1211	742	2630
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.26	0.26	0.03	0.01	0.17	0.07	0.01	0.37

Intersection Summary

HCM Signalized Intersection Capacity Analysis

1: Route 33 & Old Mountain Road/Hunton Park Boulevard

2025 Existing Conditions
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔		↔	↔	↔	↔	↕	↔	↔	↕	↔
Traffic Volume (vph)	0	0	0	363	0	20	5	402	82	7	899	0
Future Volume (vph)	0	0	0	363	0	20	5	402	82	7	899	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				7.5	7.5	7.5	9.8	9.8	9.8	9.8	9.8	
Lane Util. Factor				0.95	0.95	1.00	1.00	0.95	1.00	1.00	0.95	
Frt				1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	
Flt Protected				0.95	0.95	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)				1665	1665	1615	1805	3343	1524	1805	3406	
Flt Permitted				0.95	0.95	1.00	0.23	1.00	1.00	0.50	1.00	
Satd. Flow (perm)				1665	1665	1615	429	3343	1524	951	3406	
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	0	0	0	390	0	22	5	432	88	8	967	0
RTOR Reduction (vph)	0	0	0	0	0	17	0	0	52	0	0	0
Lane Group Flow (vph)	0	0	0	195	195	5	5	432	36	8	967	0
Heavy Vehicles (%)	0%	0%	0%	3%	0%	0%	0%	8%	6%	0%	6%	0%
Turn Type				Split	NA	Perm	D.P+P	NA	Perm	D.P+P	NA	
Protected Phases		4		3	3		5	2		1	6	
Permitted Phases	4					3	6		2	2		
Actuated Green, G (s)				15.3	15.3	15.3	31.2	30.4	30.4	31.2	30.4	
Effective Green, g (s)				15.3	15.3	15.3	31.2	30.4	30.4	31.2	30.4	
Actuated g/C Ratio				0.21	0.21	0.21	0.42	0.41	0.41	0.42	0.41	
Clearance Time (s)				7.5	7.5	7.5	9.8	9.8	9.8	9.8	9.8	
Vehicle Extension (s)				3.0	3.0	3.0	3.0	4.0	4.0	3.0	4.0	
Lane Grp Cap (vph)				346	346	335	196	1380	629	412	1406	
v/s Ratio Prot				c0.12	0.12		c0.00	0.13		0.00	c0.28	
v/s Ratio Perm						0.00	0.01		0.02	0.01		
v/c Ratio				0.56	0.56	0.01	0.03	0.31	0.06	0.02	0.69	
Uniform Delay, d1				26.2	26.2	23.2	12.6	14.6	13.0	12.3	17.7	
Progression Factor				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2				2.1	2.1	0.0	0.1	0.2	0.1	0.0	1.5	
Delay (s)				28.3	28.3	23.2	12.7	14.7	13.0	12.3	19.2	
Level of Service				C	C	C	B	B	B	B	B	
Approach Delay (s/veh)		0.0			28.0			14.4			19.2	
Approach LOS		A			C			B			B	
Intersection Summary												
HCM 2000 Control Delay (s/veh)			19.8									
HCM 2000 Volume to Capacity ratio			0.75									
Actuated Cycle Length (s)			73.6									
Intersection Capacity Utilization			49.3%									
Analysis Period (min)			15									
c Critical Lane Group												

HCM 6th TWSC
2: Route 33 & Gladfelter Road

2025 Existing Conditions
AM Peak Hour

Intersection						
Int Delay, s/veh	0.2					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	2	7	4	373	877	3
Future Vol, veh/h	2	7	4	373	877	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	0	14	0	8	6	33
Mvmt Flow	2	7	4	397	933	3

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	1340	935	936	0	-	0
Stage 1	935	-	-	-	-	-
Stage 2	405	-	-	-	-	-
Critical Hdwy	6.4	6.34	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.426	2.2	-	-	-
Pot Cap-1 Maneuver	170	306	740	-	-	-
Stage 1	385	-	-	-	-	-
Stage 2	678	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	169	306	740	-	-	-
Mov Cap-2 Maneuver	169	-	-	-	-	-
Stage 1	382	-	-	-	-	-
Stage 2	678	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	19.4	0.1	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	740	-	259	-	-
HCM Lane V/C Ratio	0.006	-	0.037	-	-
HCM Control Delay (s/veh)	9.9	0	19.4	-	-
HCM Lane LOS	A	A	C	-	-
HCM 95th %tile Q (veh)	0	-	0.1	-	-

HCM 6th TWSC
3: Route 33 & Winns Church Road

2025 Existing Conditions
AM Peak Hour

Intersection						
Int Delay, s/veh	1.9					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	59	8	330	34	10	811
Future Vol, veh/h	59	8	330	34	10	811
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	2	50	7	15	10	6
Mvmt Flow	65	9	363	37	11	891

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	1295	382	0
Stage 1	382	-	-
Stage 2	913	-	-
Critical Hdwy	6.42	6.7	-
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3.518	3.75	-
Pot Cap-1 Maneuver	179	572	-
Stage 1	690	-	-
Stage 2	391	-	-
Platoon blocked, %			
Mov Cap-1 Maneuver	175	572	-
Mov Cap-2 Maneuver	175	-	-
Stage 1	690	-	-
Stage 2	383	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v	35.2	0	0.1
HCM LOS	E		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	191	1117
HCM Lane V/C Ratio	-	-	0.385	0.01
HCM Control Delay (s/veh)	-	-	35.2	8.3
HCM Lane LOS	-	-	E	A
HCM 95th %tile Q (veh)	-	-	1.7	0

HCM 6th TWSC
4: Greenwood Road & Winns Church Road

2025 Existing Conditions
AM Peak Hour

Intersection												
Int Delay, s/veh	4.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	3	39	3	11	45	3	4	7	11	15	21	7
Future Vol, veh/h	3	39	3	11	45	3	4	7	11	15	21	7
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	67	13	0	0	13	0	0	14	0	7	5	0
Mvmt Flow	3	41	3	11	47	3	4	7	11	16	22	7
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	50	0	0	44	0	0	134	121	43	129	121	49
Stage 1	-	-	-	-	-	-	49	49	-	71	71	-
Stage 2	-	-	-	-	-	-	85	72	-	58	50	-
Critical Hdwy	4.77	-	-	4.1	-	-	7.1	6.64	6.2	7.17	6.55	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.64	-	6.17	5.55	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.64	-	6.17	5.55	-
Follow-up Hdwy	2.803	-	-	2.2	-	-	3.5	4.126	3.3	3.563	4.045	3.3
Pot Cap-1 Maneuver	1226	-	-	1577	-	-	842	748	1033	832	764	1025
Stage 1	-	-	-	-	-	-	969	831	-	926	830	-
Stage 2	-	-	-	-	-	-	928	812	-	941	847	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1226	-	-	1577	-	-	812	741	1033	810	756	1025
Mov Cap-2 Maneuver	-	-	-	-	-	-	812	741	-	810	756	-
Stage 1	-	-	-	-	-	-	966	829	-	923	824	-
Stage 2	-	-	-	-	-	-	891	806	-	920	844	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s/v	0.5			1.4			9.2			9.7		
HCM LOS							A			A		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	879	1226	-	-	1577	-	-	809				
HCM Lane V/C Ratio	0.026	0.003	-	-	0.007	-	-	0.055				
HCM Control Delay (s/veh)	9.2	7.9	0	-	7.3	0	-	9.7				
HCM Lane LOS	A	A	A	-	A	A	-	A				
HCM 95th %tile Q (veh)	0.1	0	-	-	0	-	-	0.2				

2025 Existing Conditions – PM Peak

Queues

2025 Existing Conditions

1: Route 33 & Old Mountain Road/Hunton Park Boulevard

PM Peak Hour



Lane Group	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	96	96	21	10	988	324	13	571
v/c Ratio	0.37	0.37	0.05	0.02	0.53	0.34	0.04	0.31
Control Delay (s/veh)	32.4	32.4	0.3	6.2	12.1	4.2	6.3	9.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	32.4	32.4	0.3	6.2	12.1	4.2	6.3	9.9
Queue Length 50th (ft)	29	29	0	2	104	14	2	52
Queue Length 95th (ft)	107	107	0	7	263	73	8	138
Internal Link Dist (ft)		602			695			1222
Turn Bay Length (ft)	215		530	175			350	
Base Capacity (vph)	746	746	823	703	2748	1294	641	2722
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.13	0.13	0.03	0.01	0.36	0.25	0.02	0.21
Intersection Summary								

HCM Signalized Intersection Capacity Analysis

1: Route 33 & Old Mountain Road/Hunton Park Boulevard

2025 Existing Conditions
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔		↔	↔	↔	↔	↕	↔	↔	↕	↕
Traffic Volume (vph)	0	0	0	171	0	19	9	879	288	12	508	0
Future Volume (vph)	0	0	0	171	0	19	9	879	288	12	508	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				7.5	7.5	7.5	9.8	9.8	9.8	9.8	9.8	
Lane Util. Factor				0.95	0.95	1.00	1.00	0.95	1.00	1.00	0.95	
Frt				1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	
Flt Protected				0.95	0.95	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)				1649	1649	1615	1626	3539	1599	1671	3505	
Flt Permitted				0.95	0.95	1.00	0.44	1.00	1.00	0.24	1.00	
Satd. Flow (perm)				1649	1649	1615	749	3539	1599	425	3505	
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	0	0	0	192	0	21	10	988	324	13	571	0
RTOR Reduction (vph)	0	0	0	0	0	18	0	0	124	0	0	0
Lane Group Flow (vph)	0	0	0	96	96	3	10	988	200	13	571	0
Heavy Vehicles (%)	0%	0%	0%	4%	0%	0%	11%	2%	1%	8%	3%	0%
Turn Type				Split	NA	Perm	D.P+P	NA	Perm	D.P+P	NA	
Protected Phases		4		3	3		5	2		1	6	
Permitted Phases	4					3	6		2	2		
Actuated Green, G (s)				10.4	10.4	10.4	35.2	34.4	34.4	35.2	34.4	
Effective Green, g (s)				10.4	10.4	10.4	35.2	34.4	34.4	35.2	34.4	
Actuated g/C Ratio				0.14	0.14	0.14	0.48	0.47	0.47	0.48	0.47	
Clearance Time (s)				7.5	7.5	7.5	9.8	9.8	9.8	9.8	9.8	
Vehicle Extension (s)				3.0	3.0	3.0	3.0	4.0	4.0	3.0	4.0	
Lane Grp Cap (vph)				235	235	231	372	1674	756	219	1658	
v/s Ratio Prot				c0.06	0.06		0.00	c0.28		c0.00	0.16	
v/s Ratio Perm						0.00	0.01		0.13	0.03		
v/c Ratio				0.41	0.41	0.01	0.03	0.59	0.26	0.06	0.34	
Uniform Delay, d1				28.4	28.4	26.7	9.7	14.0	11.5	10.0	12.1	
Progression Factor				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2				1.2	1.2	0.0	0.0	0.7	0.3	0.1	0.2	
Delay (s)				29.5	29.5	26.8	9.8	14.7	11.8	10.1	12.2	
Level of Service				C	C	C	A	B	B	B	B	
Approach Delay (s/veh)		0.0			29.2			13.9			12.2	
Approach LOS		A			C			B			B	
Intersection Summary												
HCM 2000 Control Delay (s/veh)			15.0									
HCM 2000 Volume to Capacity ratio			0.64									
Actuated Cycle Length (s)			72.7									
Intersection Capacity Utilization			43.7%									
Analysis Period (min)			15									
c Critical Lane Group												

HCM 6th TWSC
2: Route 33 & Gladfelter Road

2025 Existing Conditions
PM Peak Hour

Intersection						
Int Delay, s/veh	0.1					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	1	5	12	829	479	2
Future Vol, veh/h	1	5	12	829	479	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	0	0	0	2	3	50
Mvmt Flow	1	5	13	864	499	2

Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	1390	500	501	0	-	0
Stage 1	500	-	-	-	-	-
Stage 2	890	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	158	575	1074	-	-	-
Stage 1	613	-	-	-	-	-
Stage 2	404	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	154	575	1074	-	-	-
Mov Cap-2 Maneuver	154	-	-	-	-	-
Stage 1	599	-	-	-	-	-
Stage 2	404	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	14.3	0.1	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1074	-	395	-	-
HCM Lane V/C Ratio	0.012	-	0.016	-	-
HCM Control Delay (s/veh)	8.4	0	14.3	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q (veh)	0	-	0	-	-

HCM 6th TWSC
3: Route 33 & Winns Church Road

2025 Existing Conditions
PM Peak Hour

Intersection							
Int Delay, s/veh	1						
Movement	WBL	WBR	NBU	NBT	NBR	SBL	SBT
Lane Configurations							
Traffic Vol, veh/h	36	6	1	775	67	10	445
Future Vol, veh/h	36	6	1	775	67	10	445
Conflicting Peds, #/hr	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free	Free
RT Channelized	-	None	-	-	None	-	None
Storage Length	0	-	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	-	-	0
Grade, %	0	-	-	0	-	-	0
Peak Hour Factor	96	96	96	96	96	96	96
Heavy Vehicles, %	3	33	0	1	3	10	4
Mvmt Flow	38	6	1	807	70	10	464
Major/Minor	Minor1	Major1		Major2			
Conflicting Flow All	1326	842	-	0	0	877	0
Stage 1	842	-	-	-	-	-	-
Stage 2	484	-	-	-	-	-	-
Critical Hdwy	6.43	6.53	-	-	-	4.2	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-	-
Follow-up Hdwy	3.527	3.597	-	-	-	2.29	-
Pot Cap-1 Maneuver	171	321	-	-	-	737	-
Stage 1	421	-	-	-	-	-	-
Stage 2	618	-	-	-	-	-	-
Platoon blocked, %				-	-		-
Mov Cap-1 Maneuver	168	321	-	-	-	737	-
Mov Cap-2 Maneuver	168	-	-	-	-	-	-
Stage 1	421	-	-	-	-	-	-
Stage 2	607	-	-	-	-	-	-
Approach	WB	NB		SB			
HCM Control Delay, s/v	31.3			0.2			
HCM LOS	D						
Minor Lane/Major Mvmt	NBT	NBRWBLn1		SBL	SBT		
Capacity (veh/h)	-	-	180	737	-		
HCM Lane V/C Ratio	-	-	0.243	0.014	-		
HCM Control Delay (s/veh)	-	-	31.3	10	0		
HCM Lane LOS	-	-	D	A	A		
HCM 95th %tile Q (veh)	-	-	0.9	0	-		

HCM 6th TWSC
4: Greenwood Road & Winns Church Road

2025 Existing Conditions
PM Peak Hour

Intersection												
Int Delay, s/veh	4.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	7	45	17	20	39	22	8	21	31	6	28	4
Future Vol, veh/h	7	45	17	20	39	22	8	21	31	6	28	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	0	2	12	5	0	5	25	0	7	0	18	0
Mvmt Flow	8	48	18	22	42	24	9	23	33	6	30	4
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	66	0	0	66	0	0	188	183	57	199	180	54
Stage 1	-	-	-	-	-	-	73	73	-	98	98	-
Stage 2	-	-	-	-	-	-	115	110	-	101	82	-
Critical Hdwy	4.1	-	-	4.15	-	-	7.35	6.5	6.27	7.1	6.68	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.35	5.5	-	6.1	5.68	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.35	5.5	-	6.1	5.68	-
Follow-up Hdwy	2.2	-	-	2.245	-	-	3.725	4	3.363	3.5	4.162	3.3
Pot Cap-1 Maneuver	1549	-	-	1517	-	-	724	715	995	764	686	1019
Stage 1	-	-	-	-	-	-	882	838	-	913	784	-
Stage 2	-	-	-	-	-	-	837	808	-	910	797	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1549	-	-	1517	-	-	686	701	995	709	672	1019
Mov Cap-2 Maneuver	-	-	-	-	-	-	686	701	-	709	672	-
Stage 1	-	-	-	-	-	-	878	834	-	908	772	-
Stage 2	-	-	-	-	-	-	789	796	-	851	793	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s/v	0.7			1.8			9.7			10.4		
HCM LOS							A			B		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	824	1549	-	-	1517	-	-	703				
HCM Lane V/C Ratio	0.078	0.005	-	-	0.014	-	-	0.058				
HCM Control Delay (s/veh)	9.7	7.3	0	-	7.4	0	-	10.4				
HCM Lane LOS	A	A	A	-	A	A	-	B				
HCM 95th %tile Q (veh)	0.3	0	-	-	0	-	-	0.2				

2034 No-Build Conditions – AM Peak

Queues

2034 No-Build Conditions

1: Route 33 & Old Mountain Road/Hunton Park Boulevard

AM Peak Hour



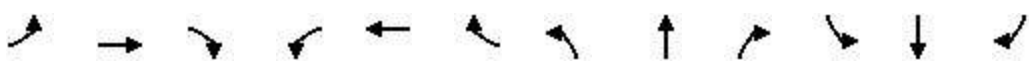
Lane Group	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	213	214	24	5	473	97	9	1057
v/c Ratio	0.59	0.59	0.05	0.02	0.28	0.11	0.02	0.61
Control Delay (s/veh)	35.3	35.4	0.2	8.8	12.3	0.9	8.8	16.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	35.3	35.4	0.2	8.8	12.3	0.9	8.8	16.2
Queue Length 50th (ft)	86	87	0	1	54	0	2	150
Queue Length 95th (ft)	215	216	0	6	144	7	9	369
Internal Link Dist (ft)		602			695			1222
Turn Bay Length (ft)	215		530	175			350	
Base Capacity (vph)	644	644	727	599	2216	1061	741	2258
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.33	0.33	0.03	0.01	0.21	0.09	0.01	0.47
Intersection Summary								

HCM Signalized Intersection Capacity Analysis

1: Route 33 & Old Mountain Road/Hunton Park Boulevard

2034 No-Build Conditions

AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔		↔	↔	↔	↔	↕	↔	↔	↕	↕
Traffic Volume (vph)	0	0	0	397	0	22	5	440	90	8	983	0
Future Volume (vph)	0	0	0	397	0	22	5	440	90	8	983	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				7.5	7.5	7.5	9.8	9.8	9.8	9.8	9.8	
Lane Util. Factor				0.95	0.95	1.00	1.00	0.95	1.00	1.00	0.95	
Frt				1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	
Flt Protected				0.95	0.95	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)				1665	1665	1615	1805	3343	1524	1805	3406	
Flt Permitted				0.95	0.95	1.00	0.20	1.00	1.00	0.48	1.00	
Satd. Flow (perm)				1665	1665	1615	381	3343	1524	914	3406	
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	0	0	0	427	0	24	5	473	97	9	1057	0
RTOR Reduction (vph)	0	0	0	0	0	19	0	0	52	0	0	0
Lane Group Flow (vph)	0	0	0	213	214	5	5	473	45	9	1057	0
Heavy Vehicles (%)	0%	0%	0%	3%	0%	0%	0%	8%	6%	0%	6%	0%
Turn Type				Split	NA	Perm	D.P+P	NA	Perm	D.P+P	NA	
Protected Phases		4		3	3		5	2		1	6	
Permitted Phases	4					3	6		2	2		
Actuated Green, G (s)				16.5	16.5	16.5	39.5	38.6	38.6	39.5	38.7	
Effective Green, g (s)				16.5	16.5	16.5	39.5	38.6	38.6	39.5	38.7	
Actuated g/C Ratio				0.20	0.20	0.20	0.48	0.46	0.46	0.48	0.47	
Clearance Time (s)				7.5	7.5	7.5	9.8	9.8	9.8	9.8	9.8	
Vehicle Extension (s)				3.0	3.0	3.0	3.0	4.0	4.0	3.0	4.0	
Lane Grp Cap (vph)				330	330	320	194	1552	707	444	1586	
v/s Ratio Prot				0.13	c0.13		c0.00	0.14		0.00	c0.31	
v/s Ratio Perm						0.00	0.01		0.03	0.01		
v/c Ratio				0.65	0.65	0.01	0.03	0.30	0.06	0.02	0.67	
Uniform Delay, d1				30.6	30.6	26.8	12.1	13.9	12.3	11.5	17.2	
Progression Factor				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2				4.3	4.3	0.0	0.1	0.2	0.1	0.0	1.2	
Delay (s)				34.9	35.0	26.8	12.1	14.0	12.3	11.5	18.4	
Level of Service				C	C	C	B	B	B	B	B	
Approach Delay (s/veh)		0.0			34.5			13.7			18.3	
Approach LOS		A			C			B			B	
Intersection Summary												
HCM 2000 Control Delay (s/veh)			20.5									
HCM 2000 Volume to Capacity ratio			0.74									
Actuated Cycle Length (s)			83.1									
Intersection Capacity Utilization			52.6%									
Analysis Period (min)			15									
c Critical Lane Group												

Intersection						
Int Delay, s/veh	0.2					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	2	8	4	408	959	3
Future Vol, veh/h	2	8	4	408	959	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	0	14	0	8	6	33
Mvmt Flow	2	9	4	434	1020	3

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	1464	1022	1023	0	-	0
Stage 1	1022	-	-	-	-	-
Stage 2	442	-	-	-	-	-
Critical Hdwy	6.4	6.34	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.426	2.2	-	-	-
Pot Cap-1 Maneuver	143	272	686	-	-	-
Stage 1	350	-	-	-	-	-
Stage 2	652	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	142	272	686	-	-	-
Mov Cap-2 Maneuver	142	-	-	-	-	-
Stage 1	347	-	-	-	-	-
Stage 2	652	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	21.4	0.1	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	686	-	230	-	-
HCM Lane V/C Ratio	0.006	-	0.046	-	-
HCM Control Delay (s/veh)	10.3	0	21.4	-	-
HCM Lane LOS	B	A	C	-	-
HCM 95th %tile Q (veh)	0	-	0.1	-	-

Intersection						
Int Delay, s/veh	2.5					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	65	9	361	37	11	887
Future Vol, veh/h	65	9	361	37	11	887
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	50	7	15	10	6
Mvmt Flow	71	10	392	40	12	964

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	1400 412	0	0 432 0
Stage 1	412 -	-	- - -
Stage 2	988 -	-	- - -
Critical Hdwy	6.42 6.7	-	- 4.2 -
Critical Hdwy Stg 1	5.42 -	-	- - -
Critical Hdwy Stg 2	5.42 -	-	- - -
Follow-up Hdwy	3.518 3.75	-	- 2.29 -
Pot Cap-1 Maneuver	155 548	-	- 1086 -
Stage 1	669 -	-	- - -
Stage 2	361 -	-	- - -
Platoon blocked, %		-	- -
Mov Cap-1 Maneuver	151 548	-	- 1086 -
Mov Cap-2 Maneuver	151 -	-	- - -
Stage 1	669 -	-	- - -
Stage 2	352 -	-	- - -

Approach	WB	NB	SB
HCM Control Delay, s/v	45.5	0	0.1
HCM LOS	E		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	- 166	1086	-
HCM Lane V/C Ratio	-	- 0.485	0.011	-
HCM Control Delay (s/veh)	-	- 45.5	8.4	0
HCM Lane LOS	-	- E	A	A
HCM 95th %tile Q (veh)	-	- 2.3	0	-

Intersection												
Int Delay, s/veh	4.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	3	43	3	12	49	3	4	8	12	16	23	8
Future Vol, veh/h	3	43	3	12	49	3	4	8	12	16	23	8
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	67	13	0	0	13	0	0	14	0	7	5	0
Mvmt Flow	3	45	3	13	51	3	4	8	13	17	24	8
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	54	0	0	48	0	0	148	133	47	142	133	53
Stage 1	-	-	-	-	-	-	53	53	-	79	79	-
Stage 2	-	-	-	-	-	-	95	80	-	63	54	-
Critical Hdwy	4.77	-	-	4.1	-	-	7.1	6.64	6.2	7.17	6.55	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.64	-	6.17	5.55	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.64	-	6.17	5.55	-
Follow-up Hdwy	2.803	-	-	2.2	-	-	3.5	4.126	3.3	3.563	4.045	3.3
Pot Cap-1 Maneuver	1221	-	-	1572	-	-	825	736	1028	816	752	1020
Stage 1	-	-	-	-	-	-	965	828	-	917	823	-
Stage 2	-	-	-	-	-	-	917	806	-	936	844	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1221	-	-	1572	-	-	791	727	1028	792	743	1020
Mov Cap-2 Maneuver	-	-	-	-	-	-	791	727	-	792	743	-
Stage 1	-	-	-	-	-	-	962	826	-	914	816	-
Stage 2	-	-	-	-	-	-	875	799	-	913	841	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s/v	0.5			1.4			9.3			9.8		
HCM LOS							A			A		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	865	1221	-	-	1572	-	-	797				
HCM Lane V/C Ratio	0.029	0.003	-	-	0.008	-	-	0.061				
HCM Control Delay (s/veh)	9.3	8	0	-	7.3	0	-	9.8				
HCM Lane LOS	A	A	A	-	A	A	-	A				
HCM 95th %tile Q (veh)	0.1	0	-	-	0	-	-	0.2				

2034 No-Build Conditions – PM Peak

1: Route 33 & Old Mountain Road/Hunton Park Boulevard

PM Peak Hour



Lane Group	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	101	102	23	11	1045	342	14	604
v/c Ratio	0.39	0.40	0.06	0.02	0.54	0.35	0.04	0.32
Control Delay (s/veh)	34.4	34.4	0.3	6.1	12.1	4.5	6.3	9.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	34.4	34.4	0.3	6.1	12.1	4.5	6.3	9.9
Queue Length 50th (ft)	34	34	0	2	114	17	2	56
Queue Length 95th (ft)	112	114	0	8	292	87	9	151
Internal Link Dist (ft)		602			695			1222
Turn Bay Length (ft)	215		530	175			350	
Base Capacity (vph)	708	708	789	696	2606	1239	618	2582
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.14	0.14	0.03	0.02	0.40	0.28	0.02	0.23
Intersection Summary								

HCM Signalized Intersection Capacity Analysis

1: Route 33 & Old Mountain Road/Hunton Park Boulevard

2034 No-Build Conditions

PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	187	0	21	10	961	315	13	556	0
Future Volume (vph)	0	0	0	187	0	21	10	961	315	13	556	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				7.5	7.5	7.5	9.8	9.8	9.8	9.8	9.8	
Lane Util. Factor				0.95	0.95	1.00	1.00	0.95	1.00	1.00	0.95	
Frt				1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	
Flt Protected				0.95	0.95	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)				1649	1649	1615	1626	3539	1599	1671	3505	
Flt Permitted				0.95	0.95	1.00	0.42	1.00	1.00	0.22	1.00	
Satd. Flow (perm)				1649	1649	1615	725	3539	1599	389	3505	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	203	0	23	11	1045	342	14	604	0
RTOR Reduction (vph)	0	0	0	0	0	20	0	0	119	0	0	0
Lane Group Flow (vph)	0	0	0	101	102	3	11	1045	223	14	604	0
Heavy Vehicles (%)	0%	0%	0%	4%	0%	0%	11%	2%	1%	8%	3%	0%
Turn Type				Split	NA	Perm	D.P+P	NA	Perm	D.P+P	NA	
Protected Phases		4		3	3		5	2		1	6	
Permitted Phases	4					3	6		2	2		
Actuated Green, G (s)				10.6	10.6	10.6	38.2	37.3	37.3	38.2	37.3	
Effective Green, g (s)				10.6	10.6	10.6	38.2	37.3	37.3	38.2	37.3	
Actuated g/C Ratio				0.14	0.14	0.14	0.50	0.49	0.49	0.50	0.49	
Clearance Time (s)				7.5	7.5	7.5	9.8	9.8	9.8	9.8	9.8	
Vehicle Extension (s)				3.0	3.0	3.0	3.0	4.0	4.0	3.0	4.0	
Lane Grp Cap (vph)				230	230	225	375	1739	785	210	1722	
v/s Ratio Prot				0.06	c0.06		0.00	c0.30		c0.00	0.17	
v/s Ratio Perm						0.00	0.01		0.14	0.03		
v/c Ratio				0.44	0.44	0.01	0.03	0.60	0.28	0.07	0.35	
Uniform Delay, d1				29.9	29.9	28.1	9.4	13.9	11.4	9.8	11.9	
Progression Factor				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2				1.3	1.4	0.0	0.0	0.7	0.3	0.1	0.2	
Delay (s)				31.3	31.3	28.2	9.5	14.6	11.7	9.9	12.0	
Level of Service				C	C	C	A	B	B	A	B	
Approach Delay (s/veh)		0.0			31.0			13.9			12.0	
Approach LOS		A			C			B			B	
Intersection Summary												
HCM 2000 Control Delay (s/veh)			15.1		HCM 2000 Level of Service					B		
HCM 2000 Volume to Capacity ratio			0.65									
Actuated Cycle Length (s)			75.9		Sum of lost time (s)					34.1		
Intersection Capacity Utilization			46.2%		ICU Level of Service					A		
Analysis Period (min)			15									
c Critical Lane Group												

Intersection						
Int Delay, s/veh	0.1					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	1	5	13	907	524	2
Future Vol, veh/h	1	5	13	907	524	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	0	0	0	2	3	50
Mvmt Flow	1	5	14	945	546	2

Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	1520	547	548	0	-	0
Stage 1	547	-	-	-	-	-
Stage 2	973	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	132	541	1032	-	-	-
Stage 1	584	-	-	-	-	-
Stage 2	370	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	128	541	1032	-	-	-
Mov Cap-2 Maneuver	128	-	-	-	-	-
Stage 1	567	-	-	-	-	-
Stage 2	370	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	15.4	0.1	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1032	-	352	-	-
HCM Lane V/C Ratio	0.013	-	0.018	-	-
HCM Control Delay (s/veh)	8.5	0	15.4	-	-
HCM Lane LOS	A	A	C	-	-
HCM 95th %tile Q (veh)	0	-	0.1	-	-

Intersection							
Int Delay, s/veh	1.3						
Movement	WBL	WBR	NBU	NBT	NBR	SBL	SBT
Lane Configurations							
Traffic Vol, veh/h	39	7	1	848	73	11	487
Future Vol, veh/h	39	7	1	848	73	11	487
Conflicting Peds, #/hr	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free	Free
RT Channelized	-	None	-	-	None	-	None
Storage Length	0	-	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	-	-	0
Grade, %	0	-	-	0	-	-	0
Peak Hour Factor	96	96	96	96	96	96	96
Heavy Vehicles, %	3	33	0	1	3	10	4
Mvmt Flow	41	7	1	883	76	11	507

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	1450	921	-	0	0	959
Stage 1	921	-	-	-	-	-
Stage 2	529	-	-	-	-	-
Critical Hdwy	6.43	6.53	-	-	-	4.2
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.597	-	-	-	2.29
Pot Cap-1 Maneuver	143	288	-	-	-	686
Stage 1	386	-	-	-	-	-
Stage 2	589	-	-	-	-	-
Platoon blocked, %			-	-	-	-
Mov Cap-1 Maneuver	140	288	-	-	-	686
Mov Cap-2 Maneuver	140	-	-	-	-	-
Stage 1	386	-	-	-	-	-
Stage 2	576	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v	39.2		0.2
HCM LOS	E		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	152	686
HCM Lane V/C Ratio	-	-	0.315	0.017
HCM Control Delay (s/veh)	-	-	39.2	10.3
HCM Lane LOS	-	-	E	B
HCM 95th %tile Q (veh)	-	-	1.3	0.1

Intersection												
Int Delay, s/veh	4.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	8	49	19	22	43	24	9	23	34	7	31	4
Future Vol, veh/h	8	49	19	22	43	24	9	23	34	7	31	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	0	2	12	5	0	5	25	0	7	0	18	0
Mvmt Flow	9	53	20	24	46	26	10	25	37	8	33	4
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	72	0	0	73	0	0	207	201	63	219	198	59
Stage 1	-	-	-	-	-	-	81	81	-	107	107	-
Stage 2	-	-	-	-	-	-	126	120	-	112	91	-
Critical Hdwy	4.1	-	-	4.15	-	-	7.35	6.5	6.27	7.1	6.68	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.35	5.5	-	6.1	5.68	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.35	5.5	-	6.1	5.68	-
Follow-up Hdwy	2.2	-	-	2.245	-	-	3.725	4	3.363	3.5	4.162	3.3
Pot Cap-1 Maneuver	1541	-	-	1508	-	-	704	699	988	741	670	1012
Stage 1	-	-	-	-	-	-	873	832	-	903	777	-
Stage 2	-	-	-	-	-	-	825	800	-	898	789	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1541	-	-	1508	-	-	662	683	988	682	655	1012
Mov Cap-2 Maneuver	-	-	-	-	-	-	662	683	-	682	655	-
Stage 1	-	-	-	-	-	-	868	827	-	898	764	-
Stage 2	-	-	-	-	-	-	772	786	-	834	784	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s/v	0.8			1.8			9.9			10.7		
HCM LOS							A			B		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	808	1541	-	-	1508	-	-	682				
HCM Lane V/C Ratio	0.088	0.006	-	-	0.016	-	-	0.066				
HCM Control Delay (s/veh)	9.9	7.3	0	-	7.4	0	-	10.7				
HCM Lane LOS	A	A	A	-	A	A	-	B				
HCM 95th %tile Q (veh)	0.3	0	-	-	0	-	-	0.2				

2034 Build Conditions – AM Peak

Queues

2034 Build Conditions

1: Route 33 & Old Mountain Road/Hunton Park Boulevard

AM Peak Hour



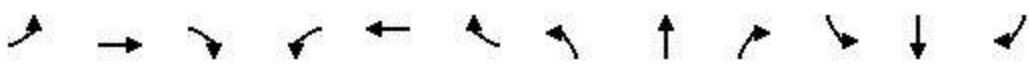
Lane Group	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	213	214	24	5	572	97	9	1139
v/c Ratio	0.65	0.65	0.05	0.02	0.30	0.11	0.02	0.59
Control Delay (s/veh)	41.3	41.5	0.2	8.6	11.9	0.9	8.5	15.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	41.3	41.5	0.2	8.6	11.9	0.9	8.5	15.5
Queue Length 50th (ft)	100	100	0	1	67	0	2	167
Queue Length 95th (ft)	215	216	0	6	176	7	9	410
Internal Link Dist (ft)		602			695			613
Turn Bay Length (ft)	215		530	175			350	
Base Capacity (vph)	566	566	660	561	1950	952	728	1987
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.38	0.38	0.04	0.01	0.29	0.10	0.01	0.57
Intersection Summary								

HCM Signalized Intersection Capacity Analysis

1: Route 33 & Old Mountain Road/Hunton Park Boulevard

2034 Build Conditions

AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔		↔	↔	↔	↔	↕	↔	↔	↕	↔
Traffic Volume (vph)	0	0	0	397	0	22	5	532	90	8	1059	0
Future Volume (vph)	0	0	0	397	0	22	5	532	90	8	1059	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				7.5	7.5	7.5	9.8	9.8	9.8	9.8	9.8	
Lane Util. Factor				0.95	0.95	1.00	1.00	0.95	1.00	1.00	0.95	
Frt				1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	
Flt Protected				0.95	0.95	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)				1665	1665	1615	1805	3343	1524	1805	3406	
Flt Permitted				0.95	0.95	1.00	0.18	1.00	1.00	0.44	1.00	
Satd. Flow (perm)				1665	1665	1615	349	3343	1524	830	3406	
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	0	0	0	427	0	24	5	572	97	9	1139	0
RTOR Reduction (vph)	0	0	0	0	0	20	0	0	47	0	0	0
Lane Group Flow (vph)	0	0	0	213	214	4	5	572	50	9	1139	0
Heavy Vehicles (%)	0%	0%	0%	3%	0%	0%	0%	8%	6%	0%	6%	0%
Turn Type				Split	NA	Perm	D.P+P	NA	Perm	D.P+P	NA	
Protected Phases		4		3	3		5	2		1	6	
Permitted Phases	4					3	6		2	2		
Actuated Green, G (s)				16.5	16.5	16.5	48.0	47.0	47.0	48.0	47.1	
Effective Green, g (s)				16.5	16.5	16.5	48.0	47.0	47.0	48.0	47.1	
Actuated g/C Ratio				0.18	0.18	0.18	0.52	0.51	0.51	0.52	0.51	
Clearance Time (s)				7.5	7.5	7.5	9.8	9.8	9.8	9.8	9.8	
Vehicle Extension (s)				3.0	3.0	3.0	3.0	4.0	4.0	3.0	4.0	
Lane Grp Cap (vph)				299	299	290	197	1715	781	445	1751	
v/s Ratio Prot				0.13	c0.13		c0.00	0.17		0.00	c0.33	
v/s Ratio Perm						0.00	0.01		0.03	0.01		
v/c Ratio				0.71	0.72	0.01	0.03	0.33	0.06	0.02	0.65	
Uniform Delay, d1				35.3	35.3	30.9	11.3	13.1	11.2	10.4	16.2	
Progression Factor				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2				7.8	7.9	0.0	0.1	0.2	0.0	0.0	1.0	
Delay (s)				43.1	43.3	30.9	11.3	13.3	11.3	10.4	17.2	
Level of Service				D	D	C	B	B	B	B	B	
Approach Delay (s/veh)		0.0			42.5			13.0			17.2	
Approach LOS		A			D			B			B	
Intersection Summary												
HCM 2000 Control Delay (s/veh)			20.9									
HCM 2000 Volume to Capacity ratio			0.74									
Actuated Cycle Length (s)			91.6							34.1		
Intersection Capacity Utilization			54.7%									
Analysis Period (min)			15									
c Critical Lane Group												

Intersection						
Int Delay, s/veh	0.2					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	2	8	4	416	969	3
Future Vol, veh/h	2	8	4	416	969	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	0	14	0	8	6	33
Mvmt Flow	2	9	4	443	1031	3

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	1484	1033	1034	0	-	0
Stage 1	1033	-	-	-	-	-
Stage 2	451	-	-	-	-	-
Critical Hdwy	6.4	6.34	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.426	2.2	-	-	-
Pot Cap-1 Maneuver	139	268	680	-	-	-
Stage 1	346	-	-	-	-	-
Stage 2	646	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	138	268	680	-	-	-
Mov Cap-2 Maneuver	138	-	-	-	-	-
Stage 1	343	-	-	-	-	-
Stage 2	646	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	21.7	0.1	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	680	-	226	-	-
HCM Lane V/C Ratio	0.006	-	0.047	-	-
HCM Control Delay (s/veh)	10.3	0	21.7	-	-
HCM Lane LOS	B	A	C	-	-
HCM 95th %tile Q (veh)	0	-	0.1	-	-

Intersection						
Int Delay, s/veh	2.6					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	65	9	369	37	11	897
Future Vol, veh/h	65	9	369	37	11	897
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	50	7	15	10	6
Mvmt Flow	71	10	401	40	12	975

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	1420	421	0
Stage 1	421	-	-
Stage 2	999	-	-
Critical Hdwy	6.42	6.7	4.2
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3.518	3.75	2.29
Pot Cap-1 Maneuver	150	542	1078
Stage 1	662	-	-
Stage 2	356	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	146	542	1078
Mov Cap-2 Maneuver	146	-	-
Stage 1	662	-	-
Stage 2	347	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v	48.3	0	0.1
HCM LOS	E		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	- 160	1078	-
HCM Lane V/C Ratio	-	- 0.503	0.011	-
HCM Control Delay (s/veh)	-	- 48.3	8.4	0
HCM Lane LOS	-	- E	A	A
HCM 95th %tile Q (veh)	-	- 2.4	0	-

Intersection												
Int Delay, s/veh	4.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	3	43	3	12	49	3	4	8	12	16	23	8
Future Vol, veh/h	3	43	3	12	49	3	4	8	12	16	23	8
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	67	13	0	0	13	0	0	14	0	7	5	0
Mvmt Flow	3	45	3	13	51	3	4	8	13	17	24	8
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	54	0	0	48	0	0	148	133	47	142	133	53
Stage 1	-	-	-	-	-	-	53	53	-	79	79	-
Stage 2	-	-	-	-	-	-	95	80	-	63	54	-
Critical Hdwy	4.77	-	-	4.1	-	-	7.1	6.64	6.2	7.17	6.55	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.64	-	6.17	5.55	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.64	-	6.17	5.55	-
Follow-up Hdwy	2.803	-	-	2.2	-	-	3.5	4.126	3.3	3.563	4.045	3.3
Pot Cap-1 Maneuver	1221	-	-	1572	-	-	825	736	1028	816	752	1020
Stage 1	-	-	-	-	-	-	965	828	-	917	823	-
Stage 2	-	-	-	-	-	-	917	806	-	936	844	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1221	-	-	1572	-	-	791	727	1028	792	743	1020
Mov Cap-2 Maneuver	-	-	-	-	-	-	791	727	-	792	743	-
Stage 1	-	-	-	-	-	-	962	826	-	914	816	-
Stage 2	-	-	-	-	-	-	875	799	-	913	841	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s/v	0.5			1.4			9.3			9.8		
HCM LOS							A			A		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	865	1221	-	-	1572	-	-	797				
HCM Lane V/C Ratio	0.029	0.003	-	-	0.008	-	-	0.061				
HCM Control Delay (s/veh)	9.3	8	0	-	7.3	0	-	9.8				
HCM Lane LOS	A	A	A	-	A	A	-	A				
HCM 95th %tile Q (veh)	0.1	0	-	-	0	-	-	0.2				

Intersection							
Int Delay, s/veh	1						
Movement	WBL	WBR	NBU	NBT	NBR	SBL	SBT
Lane Configurations							
Traffic Vol, veh/h	76	8	0	437	92	10	976
Future Vol, veh/h	76	8	0	437	92	10	976
Conflicting Peds, #/hr	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free	Free
RT Channelized	-	None	-	-	None	-	None
Storage Length	0	-	230	-	300	245	-
Veh in Median Storage, #	1	-	-	0	-	-	0
Grade, %	0	-	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2
Mvmt Flow	83	9	0	475	100	11	1061

Major/Minor	Minor1	Major1		Major2			
Conflicting Flow All	1028	238	1061	0	0	575	0
Stage 1	475	-	-	-	-	-	-
Stage 2	553	-	-	-	-	-	-
Critical Hdwy	6.84	6.94	6.44	-	-	4.14	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.52	-	-	2.22	-
Pot Cap-1 Maneuver	230	763	303	-	-	994	-
Stage 1	592	-	-	-	-	-	-
Stage 2	540	-	-	-	-	-	-
Platoon blocked, %				-	-		-
Mov Cap-1 Maneuver	227	763	303	-	-	994	-
Mov Cap-2 Maneuver	359	-	-	-	-	-	-
Stage 1	592	-	-	-	-	-	-
Stage 2	534	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v	17.5	0	0.1
HCM LOS	C		

Minor Lane/Major Mvmt	NBU	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	303	-	-	378	994
HCM Lane V/C Ratio	-	-	-	0.242	0.011
HCM Control Delay (s/veh)	0	-	-	17.5	8.7
HCM Lane LOS	A	-	-	C	A
HCM 95th %tile Q (veh)	0	-	-	0.9	0

2034 Build Conditions – PM Peak

Queues

2034 Build Conditions

1: Route 33 & Old Mountain Road/Hunton Park Boulevard

PM Peak Hour



Lane Group	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	101	102	23	11	1062	342	14	646
v/c Ratio	0.40	0.41	0.06	0.02	0.54	0.35	0.04	0.33
Control Delay (s/veh)	35.2	35.3	0.3	6.1	12.0	4.5	6.2	9.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	35.2	35.3	0.3	6.1	12.0	4.5	6.2	9.9
Queue Length 50th (ft)	36	36	0	2	117	18	2	61
Queue Length 95th (ft)	112	114	0	8	300	88	9	163
Internal Link Dist (ft)		602			695			613
Turn Bay Length (ft)	215		530	175			350	
Base Capacity (vph)	689	689	773	687	2538	1212	610	2514
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.15	0.15	0.03	0.02	0.42	0.28	0.02	0.26
Intersection Summary								

HCM Signalized Intersection Capacity Analysis

1: Route 33 & Old Mountain Road/Hunton Park Boulevard

2034 Build Conditions

PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	187	0	21	10	977	315	13	594	0
Future Volume (vph)	0	0	0	187	0	21	10	977	315	13	594	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				7.5	7.5	7.5	9.8	9.8	9.8	9.8	9.8	
Lane Util. Factor				0.95	0.95	1.00	1.00	0.95	1.00	1.00	0.95	
Frt				1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	
Flt Protected				0.95	0.95	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)				1649	1649	1615	1626	3539	1599	1671	3505	
Flt Permitted				0.95	0.95	1.00	0.41	1.00	1.00	0.22	1.00	
Satd. Flow (perm)				1649	1649	1615	696	3539	1599	381	3505	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	203	0	23	11	1062	342	14	646	0
RTOR Reduction (vph)	0	0	0	0	0	20	0	0	115	0	0	0
Lane Group Flow (vph)	0	0	0	101	102	3	11	1062	227	14	646	0
Heavy Vehicles (%)	0%	0%	0%	4%	0%	0%	11%	2%	1%	8%	3%	0%
Turn Type				Split	NA	Perm	D.P+P	NA	Perm	D.P+P	NA	
Protected Phases		4		3	3		5	2		1	6	
Permitted Phases	4					3	6		2	2		
Actuated Green, G (s)				10.6	10.6	10.6	39.7	38.8	38.8	39.7	38.8	
Effective Green, g (s)				10.6	10.6	10.6	39.7	38.8	38.8	39.7	38.8	
Actuated g/C Ratio				0.14	0.14	0.14	0.51	0.50	0.50	0.51	0.50	
Clearance Time (s)				7.5	7.5	7.5	9.8	9.8	9.8	9.8	9.8	
Vehicle Extension (s)				3.0	3.0	3.0	3.0	4.0	4.0	3.0	4.0	
Lane Grp Cap (vph)				225	225	221	367	1774	801	210	1757	
v/s Ratio Prot				0.06	c0.06		0.00	c0.30		c0.00	0.18	
v/s Ratio Perm						0.00	0.01		0.14	0.03		
v/c Ratio				0.45	0.45	0.01	0.03	0.60	0.28	0.07	0.37	
Uniform Delay, d1				30.7	30.7	28.9	9.2	13.8	11.2	9.6	11.8	
Progression Factor				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2				1.4	1.5	0.0	0.0	0.6	0.3	0.1	0.2	
Delay (s)				32.1	32.2	28.9	9.3	14.4	11.5	9.8	12.0	
Level of Service				C	C	C	A	B	B	A	B	
Approach Delay (s/veh)		0.0			31.8			13.7			11.9	
Approach LOS		A			C			B			B	
Intersection Summary												
HCM 2000 Control Delay (s/veh)			14.9		HCM 2000 Level of Service					B		
HCM 2000 Volume to Capacity ratio			0.65									
Actuated Cycle Length (s)			77.4		Sum of lost time (s)					34.1		
Intersection Capacity Utilization			46.6%		ICU Level of Service					A		
Analysis Period (min)			15									
c Critical Lane Group												

Intersection						
Int Delay, s/veh	0.1					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	1	5	13	911	526	2
Future Vol, veh/h	1	5	13	911	526	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	0	0	0	2	3	50
Mvmt Flow	1	5	14	949	548	2

Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	1526	549	550	0	-	0
Stage 1	549	-	-	-	-	-
Stage 2	977	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	131	539	1030	-	-	-
Stage 1	583	-	-	-	-	-
Stage 2	368	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	127	539	1030	-	-	-
Mov Cap-2 Maneuver	127	-	-	-	-	-
Stage 1	566	-	-	-	-	-
Stage 2	368	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	15.5	0.1	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1030	-	350	-	-
HCM Lane V/C Ratio	0.013	-	0.018	-	-
HCM Control Delay (s/veh)	8.5	0	15.5	-	-
HCM Lane LOS	A	A	C	-	-
HCM 95th %tile Q (veh)	0	-	0.1	-	-

Intersection							
Int Delay, s/veh	1.3						
Movement	WBL	WBR	NBU	NBT	NBR	SBL	SBT
Lane Configurations							
Traffic Vol, veh/h	39	7	1	852	73	11	489
Future Vol, veh/h	39	7	1	852	73	11	489
Conflicting Peds, #/hr	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free	Free
RT Channelized	-	None	-	-	None	-	None
Storage Length	0	-	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	-	-	0
Grade, %	0	-	-	0	-	-	0
Peak Hour Factor	96	96	96	96	96	96	96
Heavy Vehicles, %	3	33	0	1	3	10	4
Mvmt Flow	41	7	1	888	76	11	509

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	1457	926	-	0	0	964
Stage 1	926	-	-	-	-	-
Stage 2	531	-	-	-	-	-
Critical Hdwy	6.43	6.53	-	-	-	4.2
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.597	-	-	-	2.29
Pot Cap-1 Maneuver	142	286	-	-	-	683
Stage 1	384	-	-	-	-	-
Stage 2	588	-	-	-	-	-
Platoon blocked, %			-	-	-	-
Mov Cap-1 Maneuver	139	286	-	-	-	683
Mov Cap-2 Maneuver	139	-	-	-	-	-
Stage 1	384	-	-	-	-	-
Stage 2	575	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v	39.6		0.2
HCM LOS	E		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	151	683
HCM Lane V/C Ratio	-	-	0.317	0.017
HCM Control Delay (s/veh)	-	-	39.6	10.4
HCM Lane LOS	-	-	E	B
HCM 95th %tile Q (veh)	-	-	1.3	0.1

HCM 6th TWSC
4: Greenwood Road & Winns Church Road

2034 Build Conditions
PM Peak Hour

Intersection												
Int Delay, s/veh	4.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔			↔	
Traffic Vol, veh/h	8	49	19	22	43	24	9	23	34	7	31	4
Future Vol, veh/h	8	49	19	22	43	24	9	23	34	7	31	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	0	2	12	5	0	5	25	0	7	0	18	0
Mvmt Flow	9	53	20	24	46	26	10	25	37	8	33	4

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	72	0	0	73	0	0	207	201	63	219	198	59
Stage 1	-	-	-	-	-	-	81	81	-	107	107	-
Stage 2	-	-	-	-	-	-	126	120	-	112	91	-
Critical Hdwy	4.1	-	-	4.15	-	-	7.35	6.5	6.27	7.1	6.68	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.35	5.5	-	6.1	5.68	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.35	5.5	-	6.1	5.68	-
Follow-up Hdwy	2.2	-	-	2.245	-	-	3.725	4	3.363	3.5	4.162	3.3
Pot Cap-1 Maneuver	1541	-	-	1508	-	-	704	699	988	741	670	1012
Stage 1	-	-	-	-	-	-	873	832	-	903	777	-
Stage 2	-	-	-	-	-	-	825	800	-	898	789	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1541	-	-	1508	-	-	662	683	988	682	655	1012
Mov Cap-2 Maneuver	-	-	-	-	-	-	662	683	-	682	655	-
Stage 1	-	-	-	-	-	-	868	827	-	898	764	-
Stage 2	-	-	-	-	-	-	772	786	-	834	784	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s/v	0.8			1.8			9.9			10.7		
HCM LOS							A			B		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	808	1541	-	-	1508	-	-	682
HCM Lane V/C Ratio	0.088	0.006	-	-	0.016	-	-	0.066
HCM Control Delay (s/veh)	9.9	7.3	0	-	7.4	0	-	10.7
HCM Lane LOS	A	A	A	-	A	A	-	B
HCM 95th %tile Q (veh)	0.3	0	-	-	0	-	-	0.2

Intersection							
Int Delay, s/veh	0.6						
Movement	WBL	WBR	NBU	NBT	NBR	SBL	SBT
Lane Configurations							
Traffic Vol, veh/h	38	4	0	952	16	2	542
Future Vol, veh/h	38	4	0	952	16	2	542
Conflicting Peds, #/hr	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free	Free
RT Channelized	-	None	-	-	None	-	None
Storage Length	0	-	230	-	300	245	-
Veh in Median Storage, #	1	-	-	0	-	-	0
Grade, %	0	-	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2
Mvmt Flow	41	4	0	1035	17	2	589

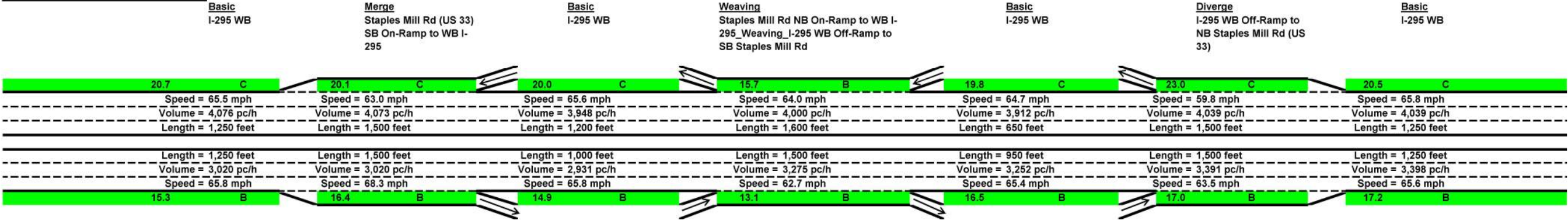
Major/Minor	Minor1	Major1		Major2			
Conflicting Flow All	1334	518	589	0	0	1052	0
Stage 1	1035	-	-	-	-	-	-
Stage 2	299	-	-	-	-	-	-
Critical Hdwy	6.84	6.94	6.44	-	-	4.14	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.52	-	-	2.22	-
Pot Cap-1 Maneuver	145	502	608	-	-	657	-
Stage 1	303	-	-	-	-	-	-
Stage 2	726	-	-	-	-	-	-
Platoon blocked, %				-	-		-
Mov Cap-1 Maneuver	145	502	608	-	-	657	-
Mov Cap-2 Maneuver	246	-	-	-	-	-	-
Stage 1	303	-	-	-	-	-	-
Stage 2	724	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v	21.9	0	0
HCM LOS	C		

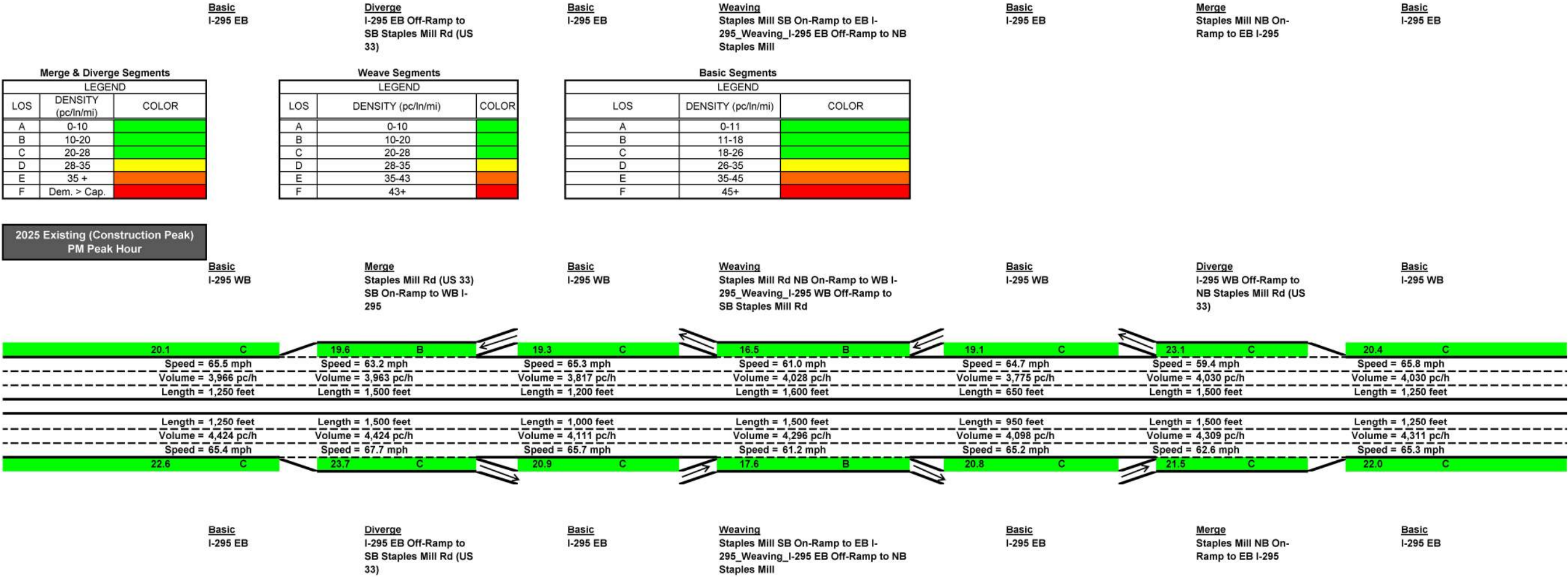
Minor Lane/Major Mvmt	NBU	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	608	-	-	259	657
HCM Lane V/C Ratio	-	-	-	0.176	0.003
HCM Control Delay (s/veh)	0	-	-	21.9	10.5
HCM Lane LOS	A	-	-	C	B
HCM 95th %tile Q (veh)	0	-	-	0.6	0

Appendix E: HCS7 Outputs

2025 Existing (Construction Peak)
AM Peak Hour



2025 Existing (Construction Peak)
PM Peak Hour



* Values are for demonstrative purposes and may not reflect actual or anticipated conditions/results

Project Information					
Construction Period Scenario					

Analyst	Kimley-Horn	Date	9/2/2025
Agency		Analysis Year	2025
Jurisdiction		Time Period Analyzed	Existing AM Peak Hour
Project Description	Mountain Road Technology Park	Unit	United States Customary

Facility Global Input	
1	1
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98	98
99	99
100	100

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45.0
Queue Discharge Capacity Drop, %	7	Total Segments	7
Total Time Periods	4	Time Period Duration, min	15
Facility Length, mi	1.70		

Facility Segment Data									
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No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic	I-295 EB	1250	3
2	Diverge	Diverge	I-295 EB Off-Ramp to SB Staples Mill Rd (US 33)	1500	3
3	Basic	Basic	I-295 EB	1000	3
4	Weaving	Weaving	Staples Mill SB On-Ramp to EB I-295_Weaving_I-295 EB Off-Ramp to NB Staples Mill	1500	4
5	Basic	Basic	I-295 EB	950	3
6	Merge	Merge	Staples Mill NB On-Ramp to EB I-295	1500	3
7	Basic	Basic	I-295 EB	1250	3

Facility Segment Data									
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Segment 1: Basic	
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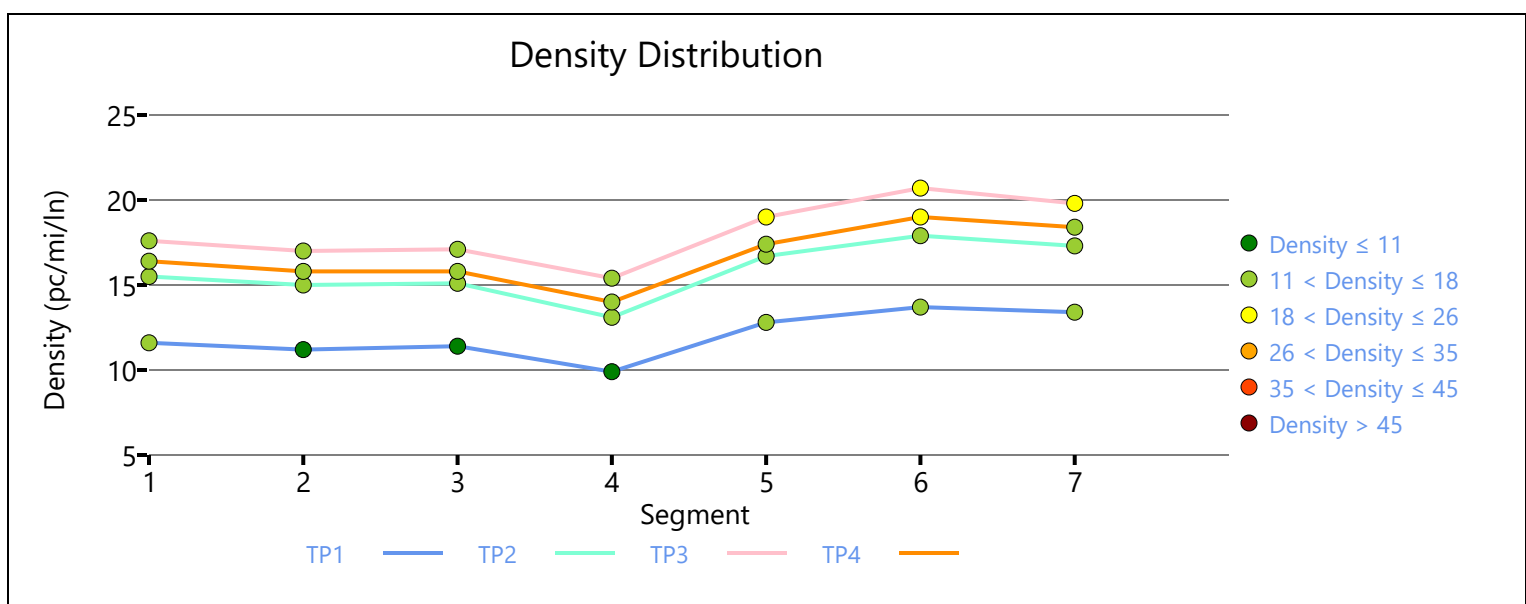
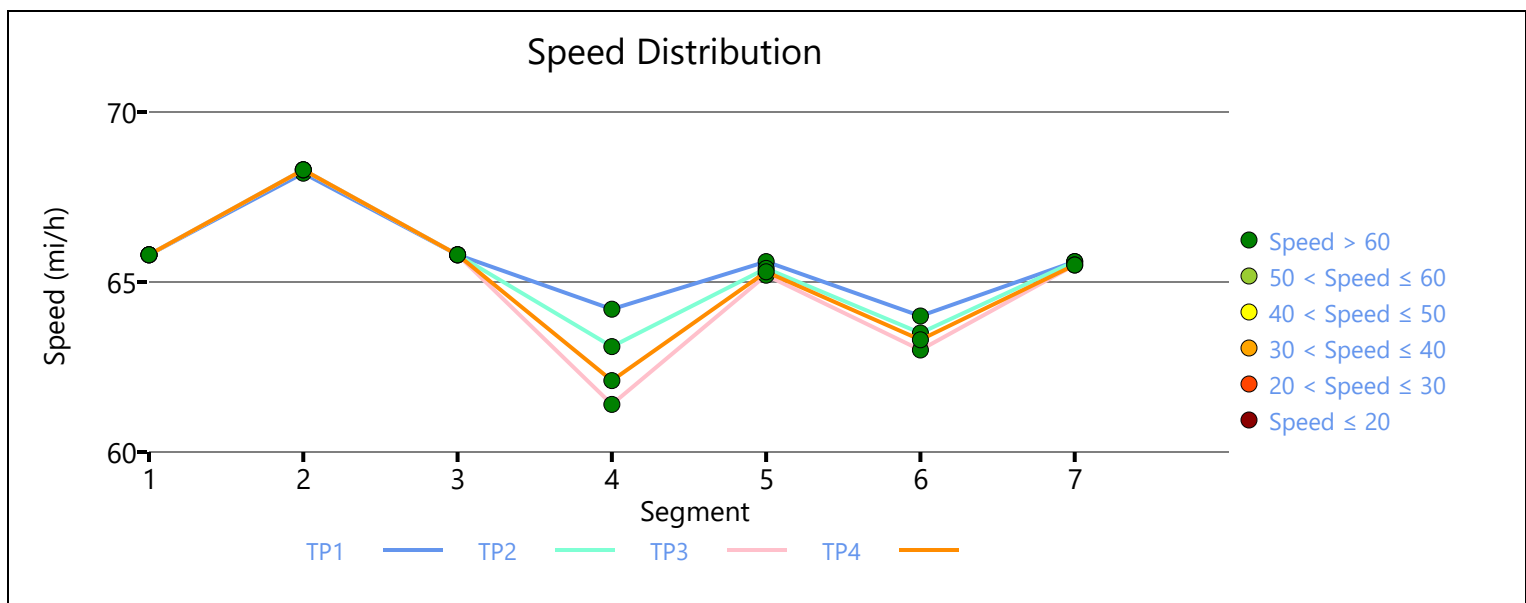
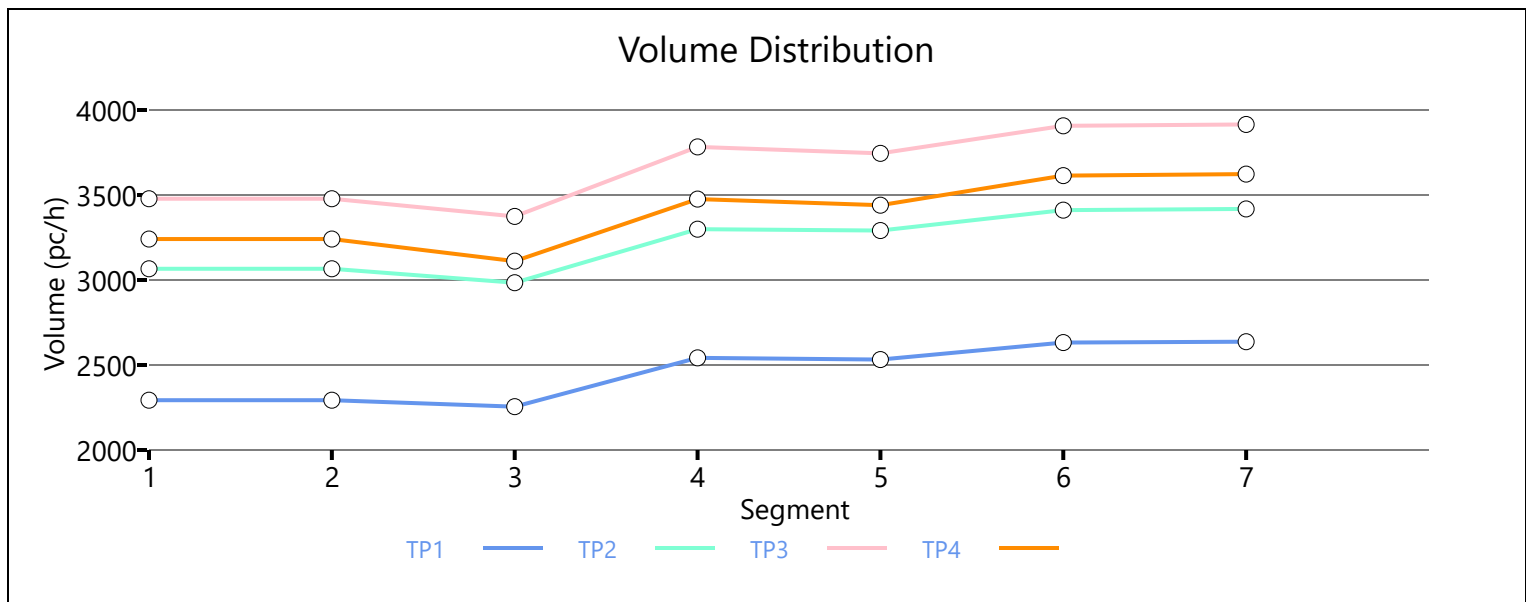
Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	1.00	0.934	2293	7074	0.32	65.8	11.6	B
2	1.00	0.934	3066	7074	0.43	65.8	15.5	B
3	1.00	0.934	3478	7074	0.49	65.8	17.6	B
4	1.00	0.934	3241	7074	0.46	65.8	16.4	B

Segment 2: Diverge									
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Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	1.00	1.00	0.934	0.980	2293	37	7200	2200	0.32	0.02	68.2	65.2	11.2	12.5	B
2	1.00	1.00	0.934	0.980	3066	79	7200	2200	0.43	0.04	68.3	65.1	15.0	16.7	B
3	1.00	1.00	0.934	0.980	3478	99	7200	2200	0.48	0.05	68.3	65.0	17.0	18.8	B
4	1.00	1.00	0.934	0.980	3241	123	7200	2200	0.45	0.06	68.3	65.0	15.8	17.7	B

Segment 3: Basic

Space Mean Speed, mi/h	65.1	Density, veh/mi/ln	14.5
Average Travel Time, min	1.60	Density, pc/mi/ln	15.5
Messages			
Comments			



HCS7 Freeway Facilities Report

Project Information Construction Period Scenario

Analyst	Kimley-Horn	Date	9/2/2025
Agency		Analysis Year	2025
Jurisdiction		Time Period Analyzed	Existing AM Peak Hour
Project Description	Mountain Road Technology Park	Unit	United States Customary

Facility Global Input

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45.0
Queue Discharge Capacity Drop, %	7	Total Segments	7
Total Time Periods	4	Time Period Duration, min	15
Facility Length, mi	1.70		

Facility Segment Data

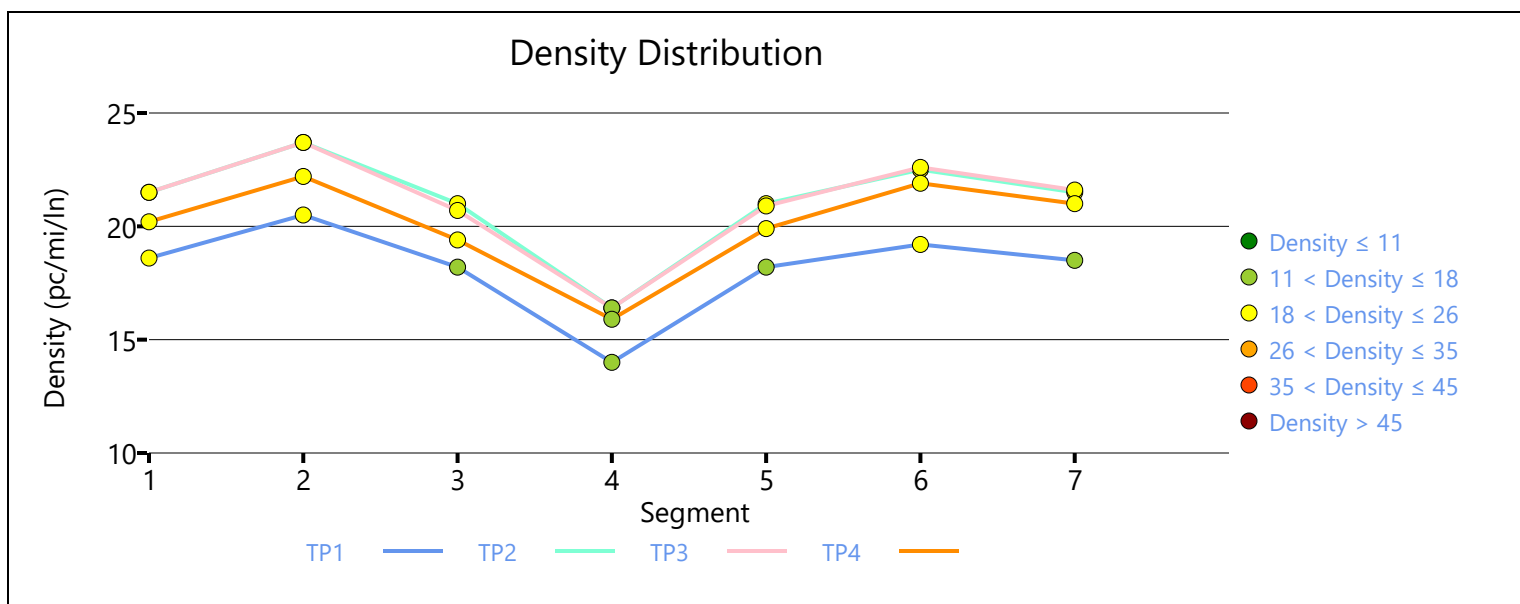
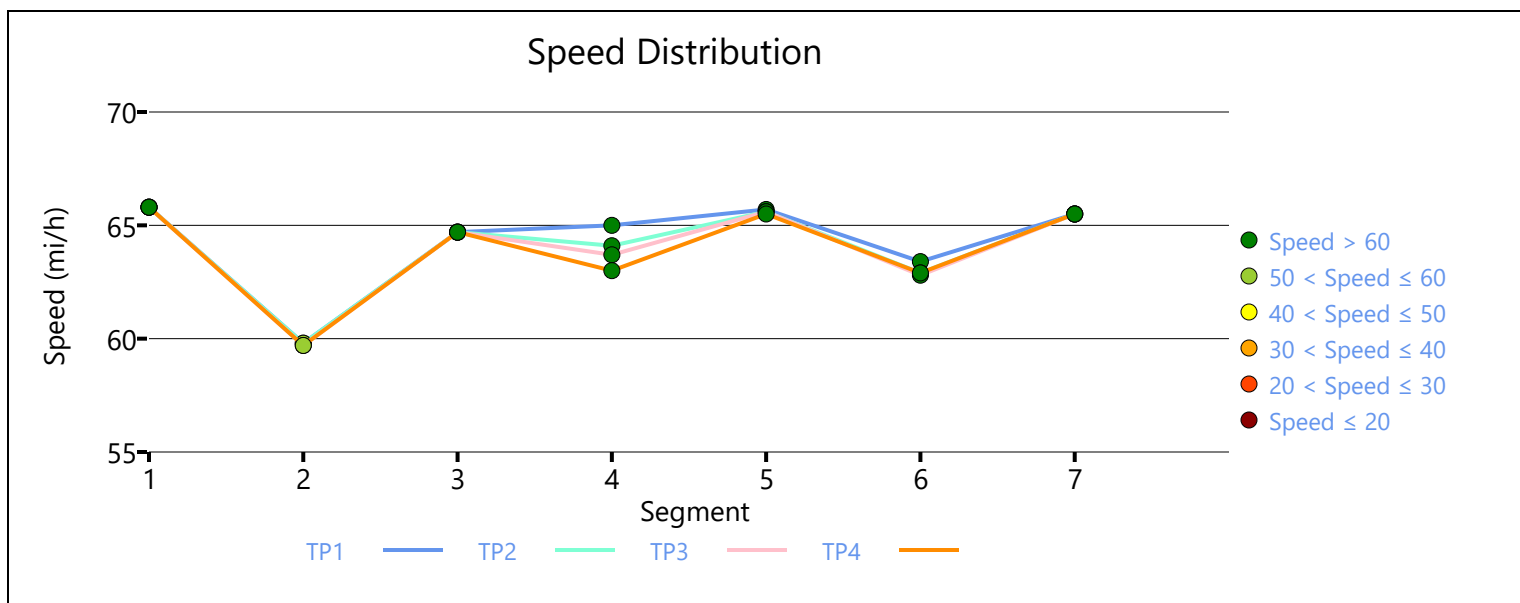
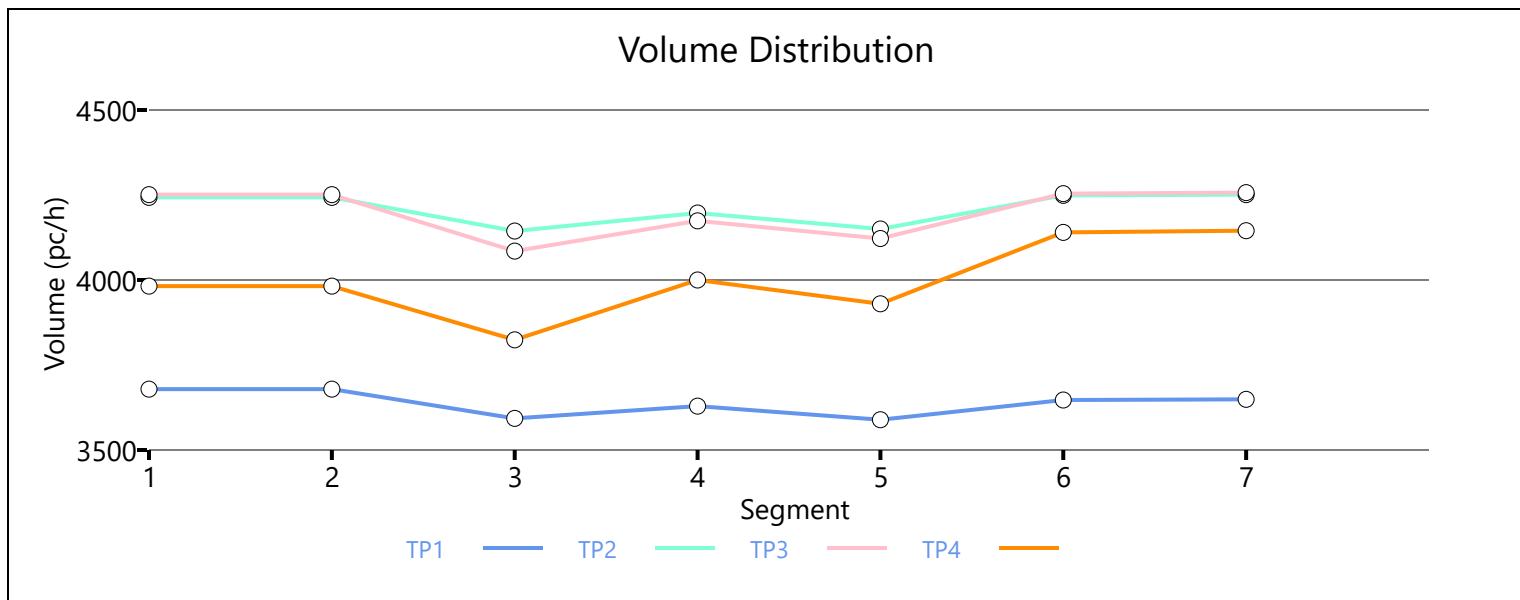
No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic	I-295 WB	1250	3
2	Diverge	Diverge	I-295 WB Off-Ramp to NB Staples Mill Rd (US 33)	1500	3
3	Basic	Basic	I-295 WB	650	3
4	Weaving	Weaving	Staples Mill Rd NB On-Ramp to WB I-295_Weaving_I-295 WB Off-Ramp to SB Staples Mill Rd	1600	4
5	Basic	Basic	I-295 WB	1200	3
6	Merge	Merge	Staples Mill Rd (US 33) SB On-Ramp to WB I-295	1500	3
7	Basic	Basic	I-295 WB	1250	3

Facility Segment Data

Segment 1: Basic															
Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
1	1.00		0.956		3679		7074		0.52		65.8		18.6		C
2	1.00		0.956		4243		7074		0.60		65.8		21.5		C
3	1.00		0.956		4251		7074		0.60		65.8		21.5		C
4	1.00		0.956		3982		7074		0.56		65.8		20.2		C
Segment 2: Diverge															
Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	1.00	1.00	0.956	0.980	3679	84	7200	1900	0.51	0.04	59.8	54.2	20.5	21.2	C
2	1.00	1.00	0.956	0.980	4243	96	7200	1900	0.59	0.05	59.8	54.1	23.7	23.9	C
3	1.00	1.00	0.956	0.980	4251	162	7200	1900	0.59	0.09	59.7	54.0	23.7	24.0	C
4	1.00	1.00	0.956	0.980	3982	154	7200	1900	0.55	0.08	59.7	54.0	22.2	22.8	C

Segment 3: Basic															
Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
1	1.00		0.956		3593		7074		0.51		64.7		18.2		C
2	1.00		0.956		4144		7074		0.59		64.7		21.0		C
3	1.00		0.956		4085		7074		0.58		64.7		20.7		C
4	1.00		0.956		3824		7074		0.54		64.7		19.4		C
Segment 4: Weaving															
Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
1	1.00		0.956		3629		8904		0.41		65.0		14.0		B
2	1.00		0.956		4197		8892		0.47		64.1		16.4		B
3	1.00		0.956		4174		8864		0.47		63.7		16.4		B
4	1.00		0.956		4000		8780		0.46		63.0		15.9		B
Segment 5: Basic															
Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
1	1.00		0.956		3589		7074		0.51		65.7		18.2		C
2	1.00		0.956		4150		7074		0.59		65.6		21.0		C
3	1.00		0.956		4122		7074		0.58		65.6		20.9		C
4	1.00		0.956		3930		7074		0.56		65.5		19.9		C
Segment 6: Merge															
Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	1.00	1.00	0.956	0.980	3647	58	7200	2000	0.51	0.03	63.4	61.5	19.2	17.9	B
2	1.00	1.00	0.956	0.980	4249	99	7200	2000	0.59	0.05	62.9	61.1	22.5	20.8	C
3	1.00	1.00	0.956	0.980	4254	132	7200	2000	0.59	0.07	62.8	61.1	22.6	20.9	C
4	1.00	1.00	0.956	0.980	4140	210	7200	2000	0.57	0.11	62.9	61.1	21.9	20.6	C
Segment 7: Basic															
Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
1	1.00		0.956		3649		7074		0.52		65.5		18.5		C
2	1.00		0.956		4251		7074		0.60		65.5		21.5		C
3	1.00		0.956		4257		7074		0.60		65.5		21.6		C
4	1.00		0.956		4145		7074		0.59		65.5		21.0		C
Facility Time Period Results															
T	Speed, mi/h			Density, pc/mi/ln			Density, veh/mi/ln			Travel Time, min			LOS		
1	64.0			17.9			17.1			1.60			B		
2	63.8			20.8			19.9			1.60			C		
3	63.7			20.8			19.9			1.60			C		
4	63.6			19.8			18.9			1.60			C		

Facility Overall Results			
Space Mean Speed, mi/h	63.8	Density, veh/mi/ln	18.9
Average Travel Time, min	1.60	Density, pc/mi/ln	19.8
Messages			
Comments			



Project Information					
Construction Period Scenario					

Analyst	Kimley-Horn	Date	9/2/2025
Agency		Analysis Year	2025
Jurisdiction		Time Period Analyzed	Existing PM Peak Hour
Project Description	Mountain Road Technology Park	Unit	United States Customary

Facility Global Input									
1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100
101	102	103	104	105	106	107	108	109	110
111	112	113	114	115	116	117	118	119	120
121	122	123	124	125	126	127	128	129	130
131	132	133	134	135	136	137	138	139	140
141	142	143	144	145	146	147	148	149	150
151	152	153	154	155	156	157	158	159	160
161	162	163	164	165	166	167	168	169	170
171	172	173	174	175	176	177	178	179	180
181	182	183	184	185	186	187	188	189	190
191	192	193	194	195	196	197	198	199	200
201	202	203	204	205	206	207	208	209	210
211	212	213	214	215	216	217	218	219	220
221	222	223	224	225	226	227	228	229	230
231	232	233	234	235	236	237	238	239	240
241	242	243	244	245	246	247	248	249	250
251	252	253	254	255	256	257	258	259	260
261	262	263	264	265	266	267	268	269	270
271	272	273	274	275	276	277	278	279	280
281	282	283	284	285	286	287	288	289	290
291	292	293	294	295	296	297	298	299	300
301	302	303	304	305	306	307	308	309	310
311	312	313	314	315	316	317	318	319	320
321	322	323	324	325	326	327	328	329	330
331	332	333	334	335	336	337	338	339	340
341	342	343	344	345	346	347	348	349	350
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361	362	363	364	365	366	367	368	369	370
371	372	373	374	375	376	377	378	379	380
381	382	383	384	385	386	387	388	389	390
391	392	393	394	395	396	397	398	399	400
401	402	403	404	405	406	407	408	409	410
411	412	413	414	415	416	417	418	419	420
421	422	423	424	425	426	427	428	429	430

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45.0
Queue Discharge Capacity Drop, %	7	Total Segments	7
Total Time Periods	4	Time Period Duration, min	15
Facility Length, mi	1.70		

Facility Segment Data									
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No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic	I-295 EB	1250	3
2	Diverge	Diverge	I-295 EB Off-Ramp to SB Staples Mill Rd (US 33)	1500	3
3	Basic	Basic	I-295 EB	1000	3
4	Weaving	Weaving	Staples Mill SB On-Ramp to EB I-295_Weaving_I-295 EB Off-Ramp to NB Staples Mill	1500	4
5	Basic	Basic	I-295 EB	950	3
6	Merge	Merge	Staples Mill NB On-Ramp to EB I-295	1500	3
7	Basic	Basic	I-295 EB	1250	3

Facility Segment Data									
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Segment 1: Basic	
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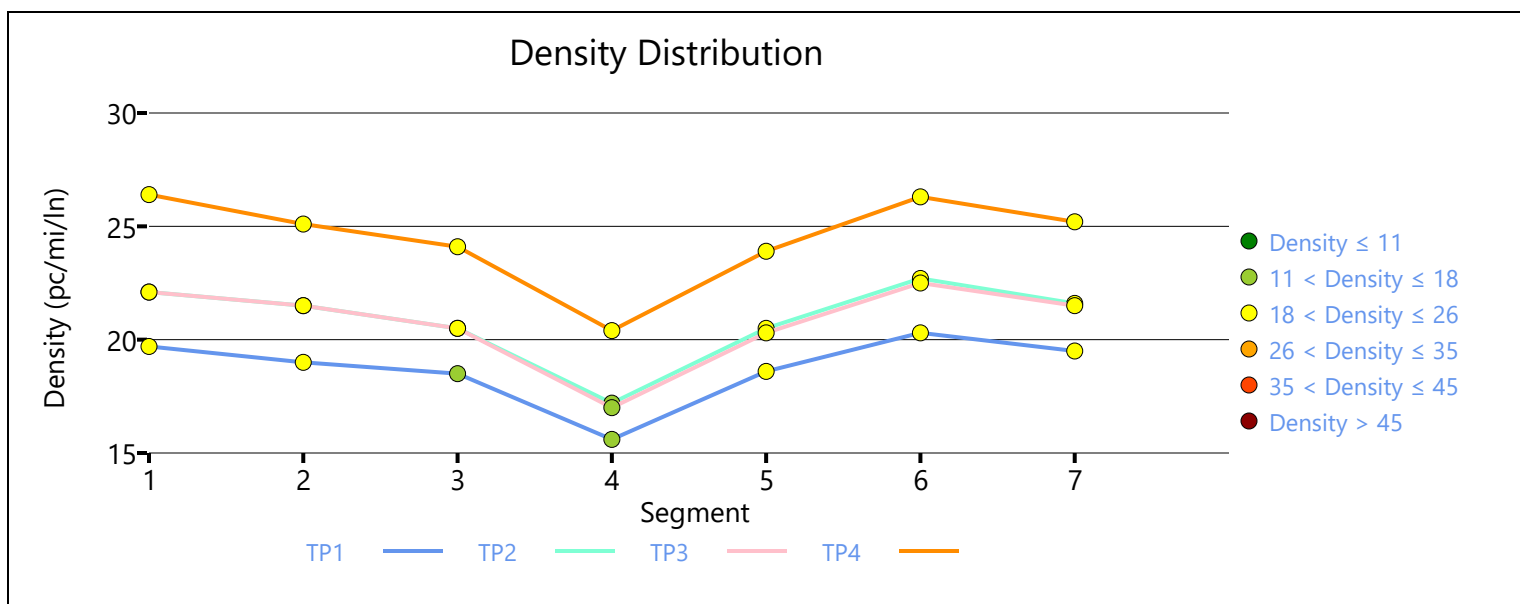
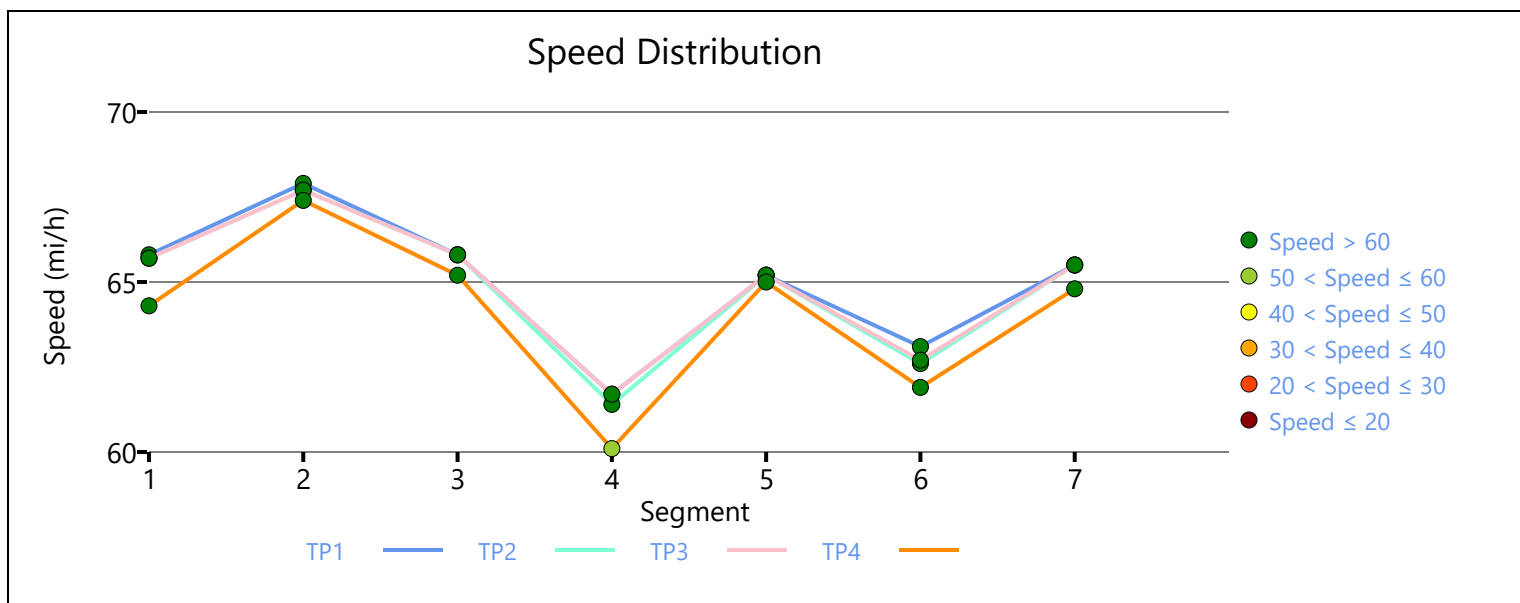
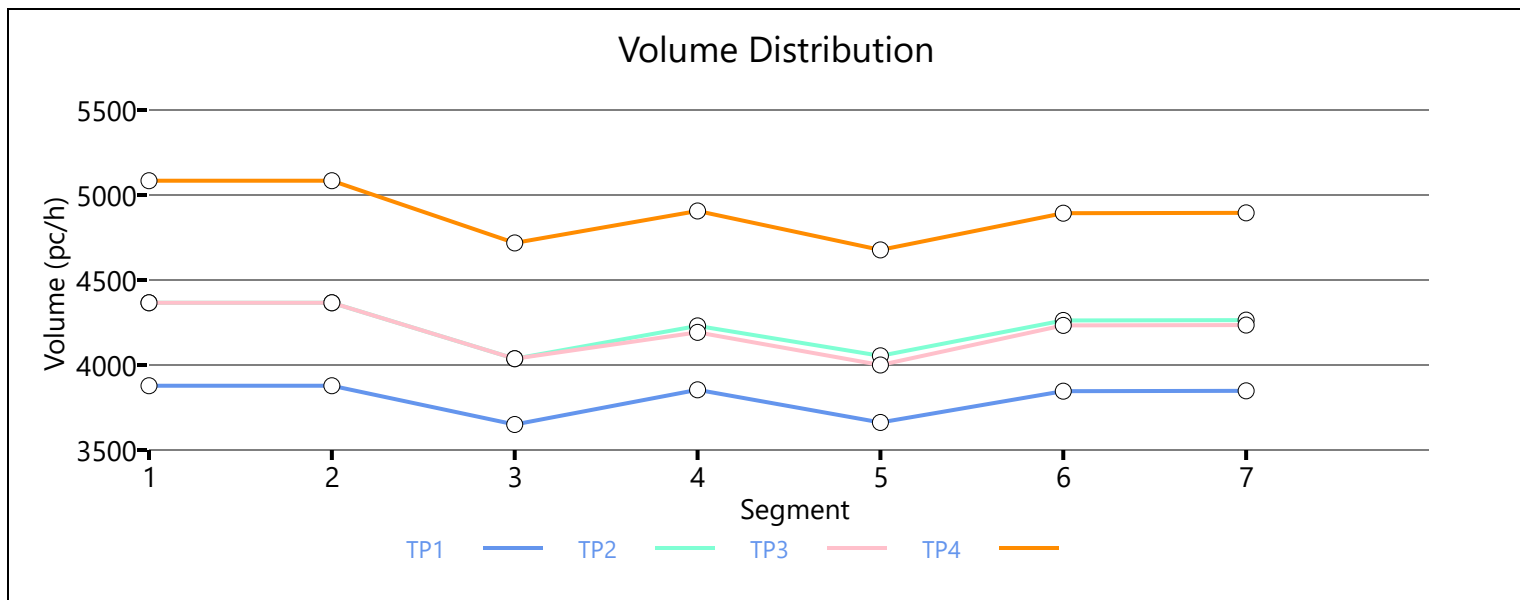
Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	1.00	0.971	3878	7074	0.55	65.8	19.7	C
2	1.00	0.971	4366	7074	0.62	65.7	22.1	C
3	1.00	0.971	4366	7074	0.62	65.7	22.1	C
4	1.00	0.971	5084	7074	0.72	64.3	26.4	D

Segment 2: Diverge									
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Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	1.00	1.00	0.971	0.980	3878	227	7200	2200	0.54	0.10	67.9	64.7	19.0	21.0	C
2	1.00	1.00	0.971	0.980	4366	326	7200	2200	0.61	0.15	67.7	64.5	21.5	23.5	C
3	1.00	1.00	0.971	0.980	4366	326	7200	2200	0.61	0.15	67.7	64.5	21.5	23.5	C
4	1.00	1.00	0.971	0.980	5084	363	7200	2200	0.71	0.17	67.4	64.4	25.1	26.7	C

Segment 3: Basic

Space Mean Speed, mi/h	64.5	Density, veh/mi/ln	20.4
Average Travel Time, min	1.60	Density, pc/mi/ln	21.0
Messages			
Comments			



HCS7 Freeway Facilities Report

Project Information Construction Period Scenario

Analyst	Kimley-Horn	Date	9/2/2025
Agency		Analysis Year	2025
Jurisdiction		Time Period Analyzed	Existing PM Peak Hour
Project Description	Mountain Road Technology Park	Unit	United States Customary

Facility Global Input

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45.0
Queue Discharge Capacity Drop, %	7	Total Segments	7
Total Time Periods	4	Time Period Duration, min	15
Facility Length, mi	1.70		

Facility Segment Data

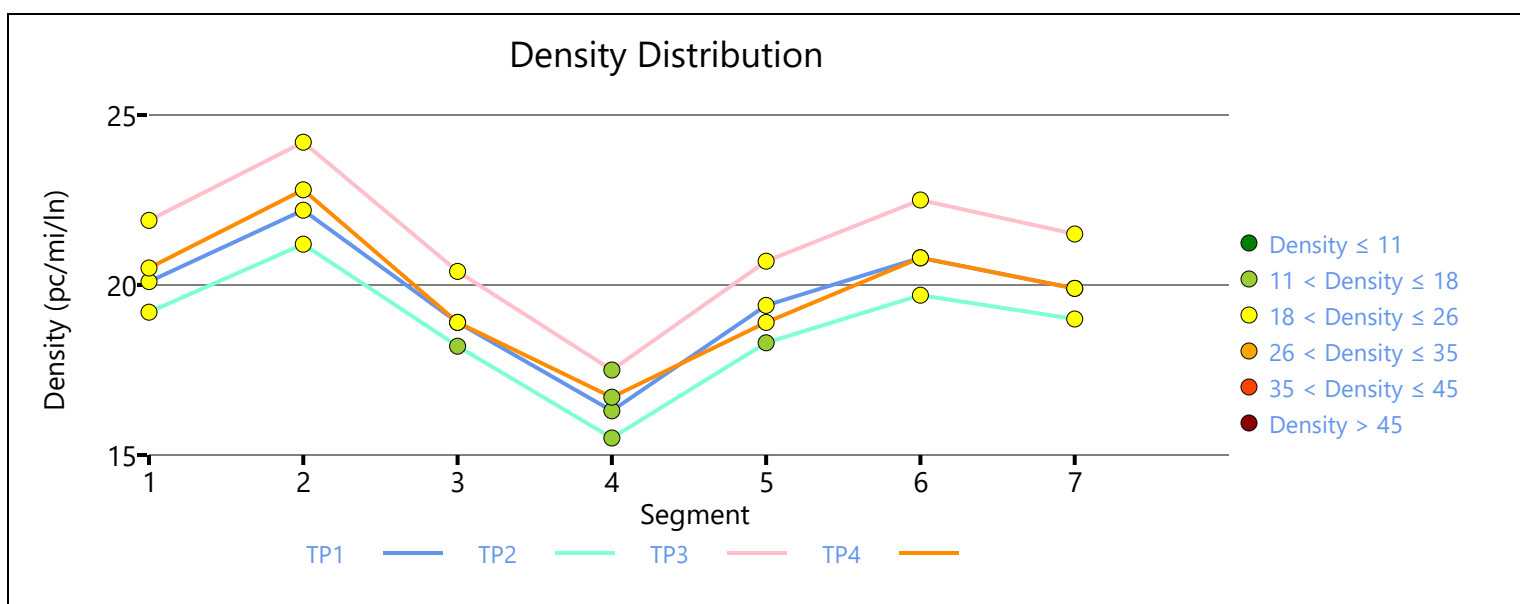
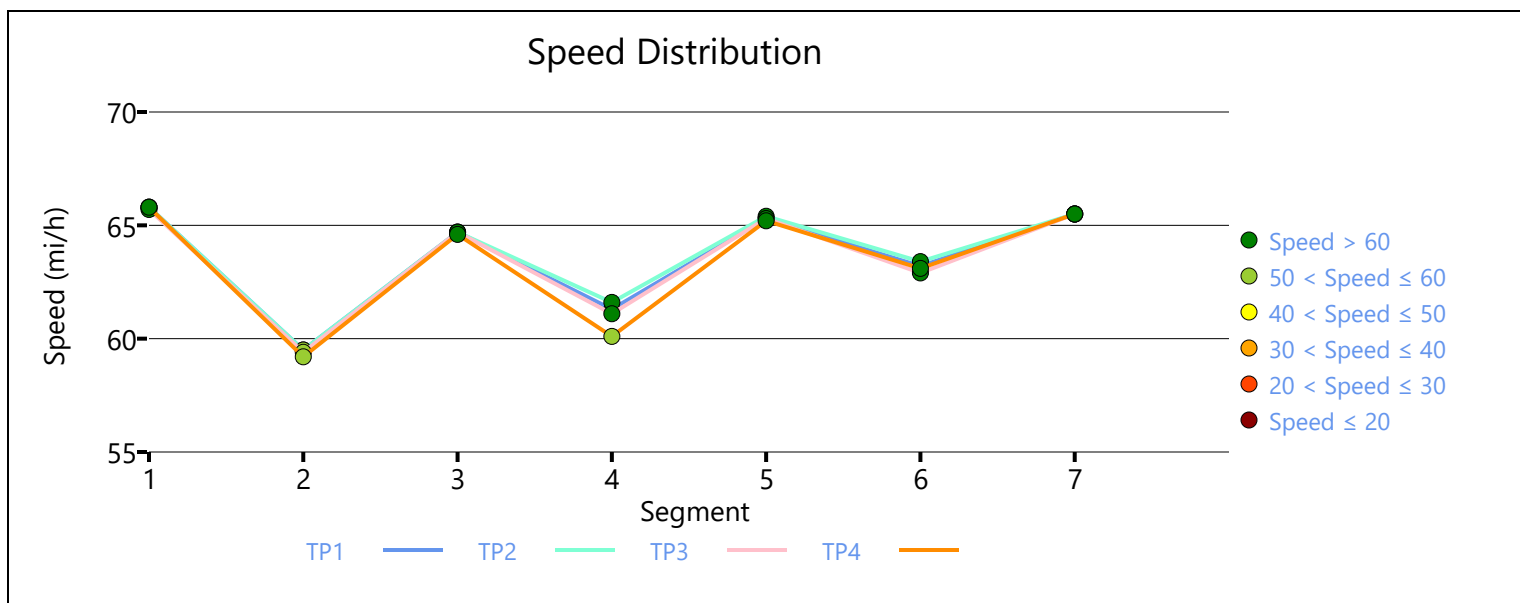
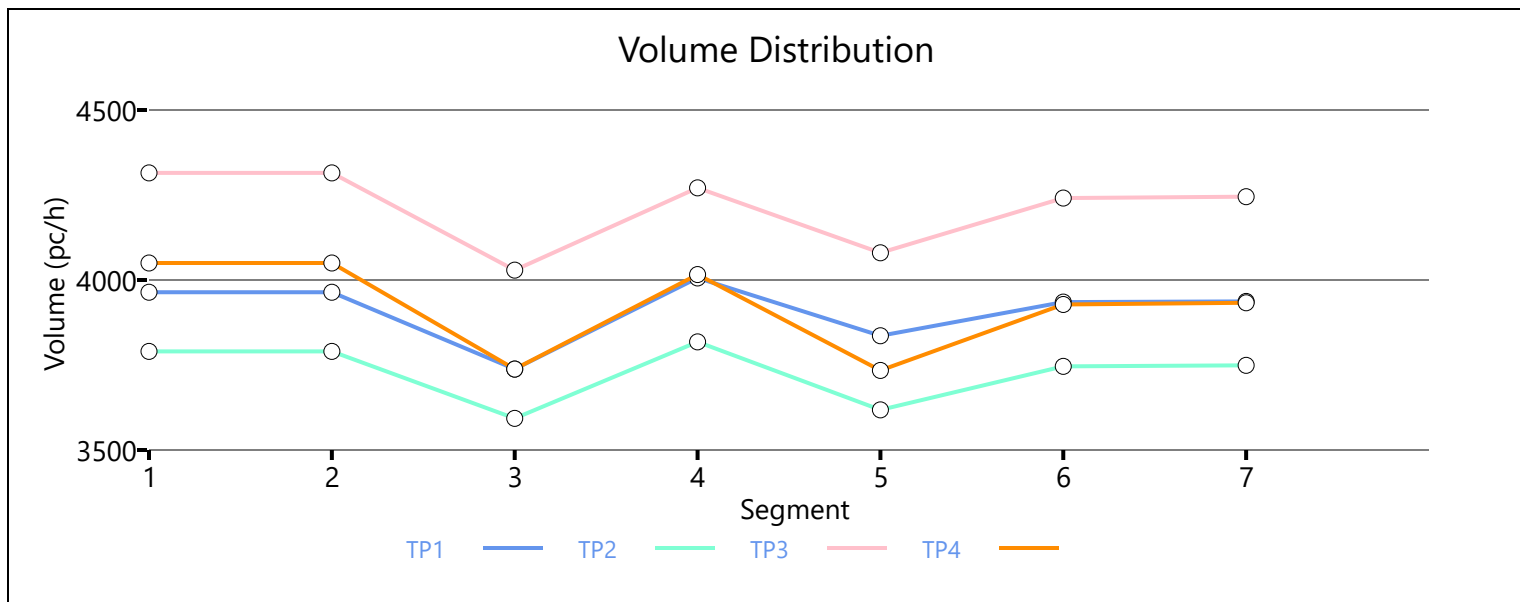
No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic	I-295 WB	1250	3
2	Diverge	Diverge	I-295 WB Off-Ramp to NB Staples Mill Rd (US 33)	1500	3
3	Basic	Basic	I-295 WB	650	3
4	Weaving	Weaving	Staples Mill Rd NB On-Ramp to WB I-295_Weaving_I-295 WB Off-Ramp to SB Staples Mill Rd	1600	4
5	Basic	Basic	I-295 WB	1200	3
6	Merge	Merge	Staples Mill Rd (US 33) SB On-Ramp to WB I-295	1500	3
7	Basic	Basic	I-295 WB	1250	3

Facility Segment Data

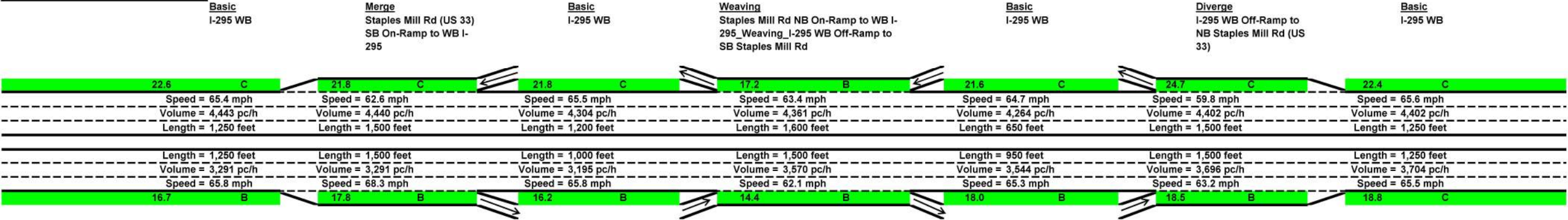
Segment 1: Basic															
Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
1	1.00		0.955		3964		7074		0.56		65.8		20.1		C
2	1.00		0.955		3790		7074		0.54		65.8		19.2		C
3	1.00		0.955		4315		7074		0.61		65.7		21.9		C
4	1.00		0.955		4050		7074		0.57		65.8		20.5		C
Segment 2: Diverge															
Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	1.00	1.00	0.955	0.980	3964	220	7200	1900	0.55	0.12	59.5	53.8	22.2	22.8	C
2	1.00	1.00	0.955	0.980	3790	192	7200	1900	0.53	0.10	59.5	53.9	21.2	21.9	C
3	1.00	1.00	0.955	0.980	4315	279	7200	1900	0.60	0.15	59.4	53.7	24.2	24.5	C
4	1.00	1.00	0.955	0.980	4050	304	7200	1900	0.56	0.16	59.2	53.6	22.8	23.3	C

Segment 3: Basic															
Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
1	1.00		0.955		3738		7074		0.53		64.7		18.9		C
2	1.00		0.955		3593		7074		0.51		64.7		18.2		C
3	1.00		0.955		4029		7074		0.57		64.7		20.4		C
4	1.00		0.955		3738		7074		0.53		64.6		18.9		C
Segment 4: Weaving															
Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
1	1.00		0.955		4006		8636		0.46		61.3		16.3		B
2	1.00		0.955		3818		8632		0.44		61.6		15.5		B
3	1.00		0.955		4271		8660		0.49		61.1		17.5		B
4	1.00		0.955		4016		8544		0.47		60.1		16.7		B
Segment 5: Basic															
Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
1	1.00		0.955		3836		7074		0.54		65.3		19.4		C
2	1.00		0.955		3618		7074		0.51		65.4		18.3		C
3	1.00		0.955		4080		7074		0.58		65.3		20.7		C
4	1.00		0.955		3734		7074		0.53		65.2		18.9		C
Segment 6: Merge															
Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	1.00	1.00	0.955	0.980	3935	99	7200	2000	0.55	0.05	63.2	61.3	20.8	19.3	B
2	1.00	1.00	0.955	0.980	3746	128	7200	2000	0.52	0.06	63.4	61.5	19.7	18.5	B
3	1.00	1.00	0.955	0.980	4241	161	7200	2000	0.59	0.08	62.9	61.1	22.5	20.9	C
4	1.00	1.00	0.955	0.980	3928	194	7200	2000	0.55	0.10	63.1	61.3	20.8	19.5	B
Segment 7: Basic															
Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
1	1.00		0.955		3937		7074		0.56		65.5		19.9		C
2	1.00		0.955		3749		7074		0.53		65.5		19.0		C
3	1.00		0.955		4245		7074		0.60		65.5		21.5		C
4	1.00		0.955		3933		7074		0.56		65.5		19.9		C
Facility Time Period Results															
T	Speed, mi/h			Density, pc/mi/ln			Density, veh/mi/ln			Travel Time, min			LOS		
1	63.2			19.5			18.6			1.60			C		
2	63.3			18.6			17.7			1.60			C		
3	63.1			21.1			20.1			1.60			C		
4	62.9			19.7			18.8			1.60			C		

Facility Overall Results			
Space Mean Speed, mi/h	63.1	Density, veh/mi/ln	18.8
Average Travel Time, min	1.60	Density, pc/mi/ln	19.7
Messages			
Comments			



2034 No-Build (Peak Construction)
AM Peak Hour



Basic
I-295 EB

Diverge
I-295 EB Off-Ramp to
SB Staples Mill Rd (US
33)

Basic
I-295 EB

Weaving
Staples Mill SB On-Ramp to EB I-
295_Weaving_I-295 EB Off-Ramp to NB
Staples Mill

Basic
I-295 EB

Merge
Staples Mill NB On-
Ramp to EB I-295

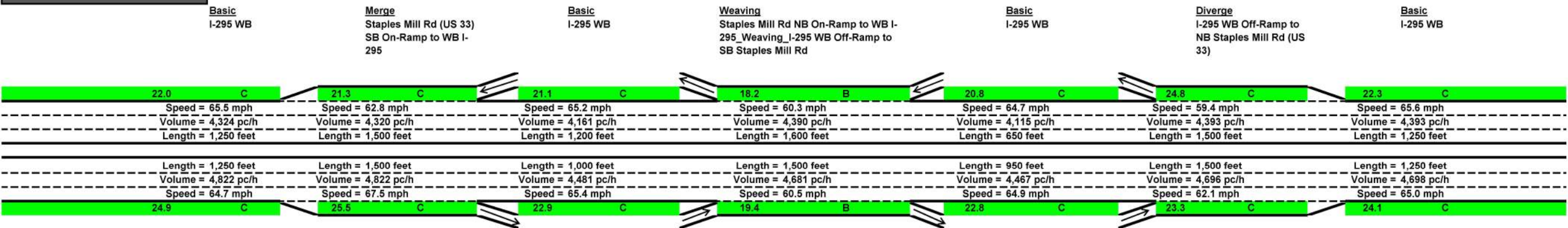
Basic
I-295 EB

Merge & Diverge Segments		
LEGEND		
LOS	DENSITY (pc/in/mi)	COLOR
A	0-10	
B	10-20	
C	20-28	
D	28-35	
E	35 +	
F	Dem. > Cap.	

Weave Segments		
LEGEND		
LOS	DENSITY (pc/in/mi)	COLOR
A	0-10	
B	10-20	
C	20-28	
D	28-35	
E	35-43	
F	43+	

Basic Segments		
LEGEND		
LOS	DENSITY (pc/in/mi)	COLOR
A	0-11	
B	11-18	
C	18-26	
D	26-35	
E	35-45	
F	45+	

2034 No-Build (Peak Construction)
PM Peak Hour



Basic
I-295 EB

Diverge
I-295 EB Off-Ramp to
SB Staples Mill Rd (US
33)

Basic
I-295 EB

Weaving
Staples Mill SB On-Ramp to EB I-
295_Weaving_I-295 EB Off-Ramp to NB
Staples Mill

Basic
I-295 EB

Merge
Staples Mill NB On-
Ramp to EB I-295

Basic
I-295 EB

* Values are for demonstrative purposes and may not reflect actual or anticipated conditions/results

HCS7 Freeway Facilities Report

Project Information Construction Period Scenario

Analyst	Kimley-Horn	Date	9/2/2025
Agency		Analysis Year	2034
Jurisdiction		Time Period Analyzed	No-Build AM Peak Hour
Project Description	Mountain Road Technology Park	Unit	United States Customary

Facility Global Input

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45.0
Queue Discharge Capacity Drop, %	7	Total Segments	7
Total Time Periods	4	Time Period Duration, min	15
Facility Length, mi	1.70		

Facility Segment Data

No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic	I-295 EB	1250	3
2	Diverge	Diverge	I-295 EB Off-Ramp to SB Staples Mill Rd (US 33)	1500	3
3	Basic	Basic	I-295 EB	1000	3
4	Weaving	Weaving	Staples Mill SB On-Ramp to EB I-295_Weaving_I-295 EB Off-Ramp to NB Staples Mill	1500	4
5	Basic	Basic	I-295 EB	950	3
6	Merge	Merge	Staples Mill NB On-Ramp to EB I-295	1500	3
7	Basic	Basic	I-295 EB	1250	3

Facility Segment Data

Segment 1: Basic

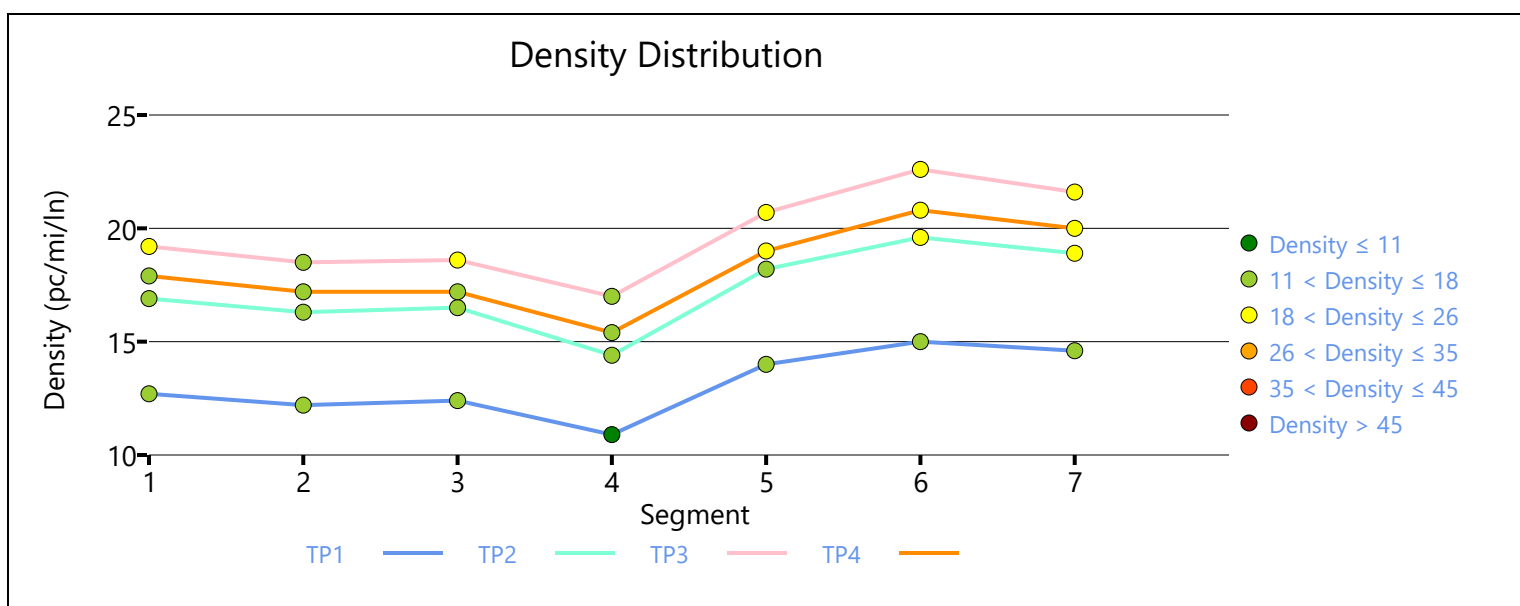
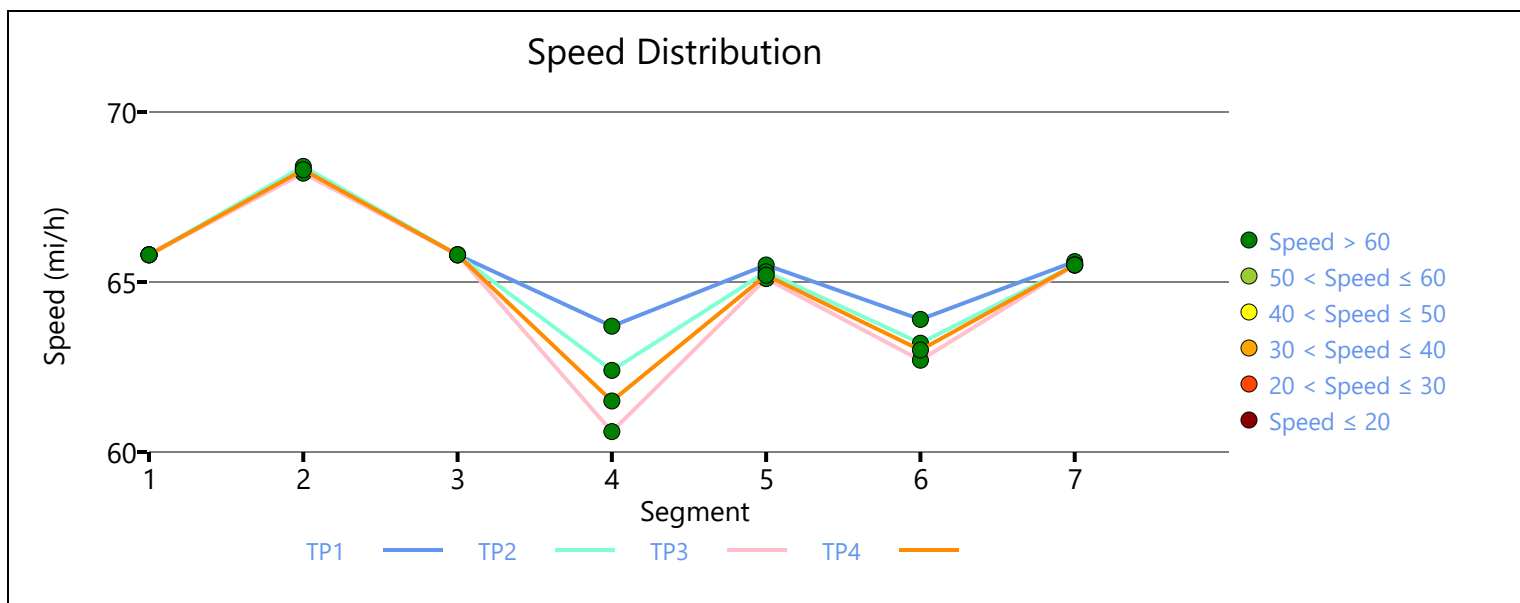
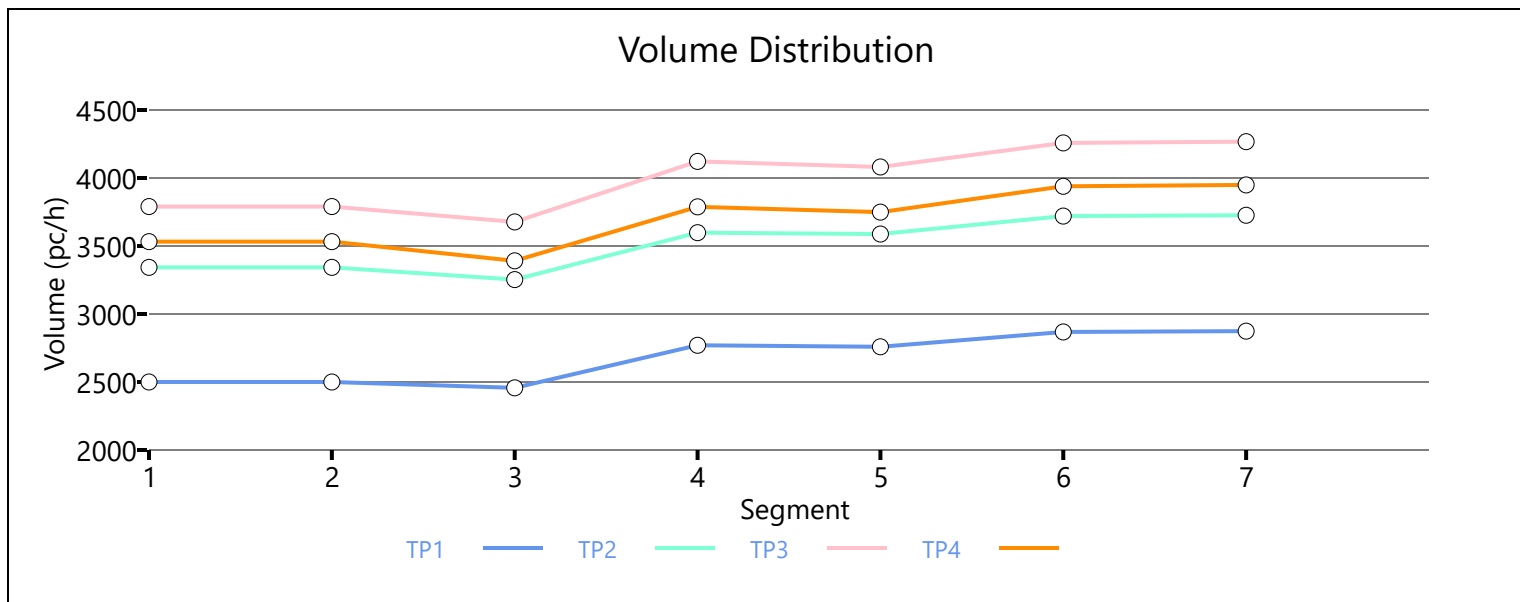
Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	1.00	0.934	2500	7074	0.35	65.8	12.7	B
2	1.00	0.934	3343	7074	0.47	65.8	16.9	B
3	1.00	0.934	3790	7074	0.54	65.8	19.2	C
4	1.00	0.934	3532	7074	0.50	65.8	17.9	B

Segment 2: Diverge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	1.00	1.00	0.934	0.980	2500	41	7200	2200	0.35	0.02	68.3	65.2	12.2	13.6	B
2	1.00	1.00	0.934	0.980	3343	86	7200	2200	0.46	0.04	68.4	65.1	16.3	18.1	B
3	1.00	1.00	0.934	0.980	3790	108	7200	2200	0.53	0.05	68.2	65.0	18.5	20.4	C
4	1.00	1.00	0.934	0.980	3532	135	7200	2200	0.49	0.06	68.3	65.0	17.2	19.2	B

Segment 3: Basic

Space Mean Speed, mi/h	64.9	Density, veh/mi/ln	15.8
Average Travel Time, min	1.60	Density, pc/mi/ln	16.9
Messages			
Comments			



HCS7 Freeway Facilities Report

Project Information Construction Period Scenario

Analyst	Kimley-Horn	Date	9/2/2025
Agency		Analysis Year	2034
Jurisdiction		Time Period Analyzed	No-Build AM Peak Hour
Project Description	Mountain Road Technology Park	Unit	United States Customary

Facility Global Input

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45.0
Queue Discharge Capacity Drop, %	7	Total Segments	7
Total Time Periods	4	Time Period Duration, min	15
Facility Length, mi	1.70		

Facility Segment Data

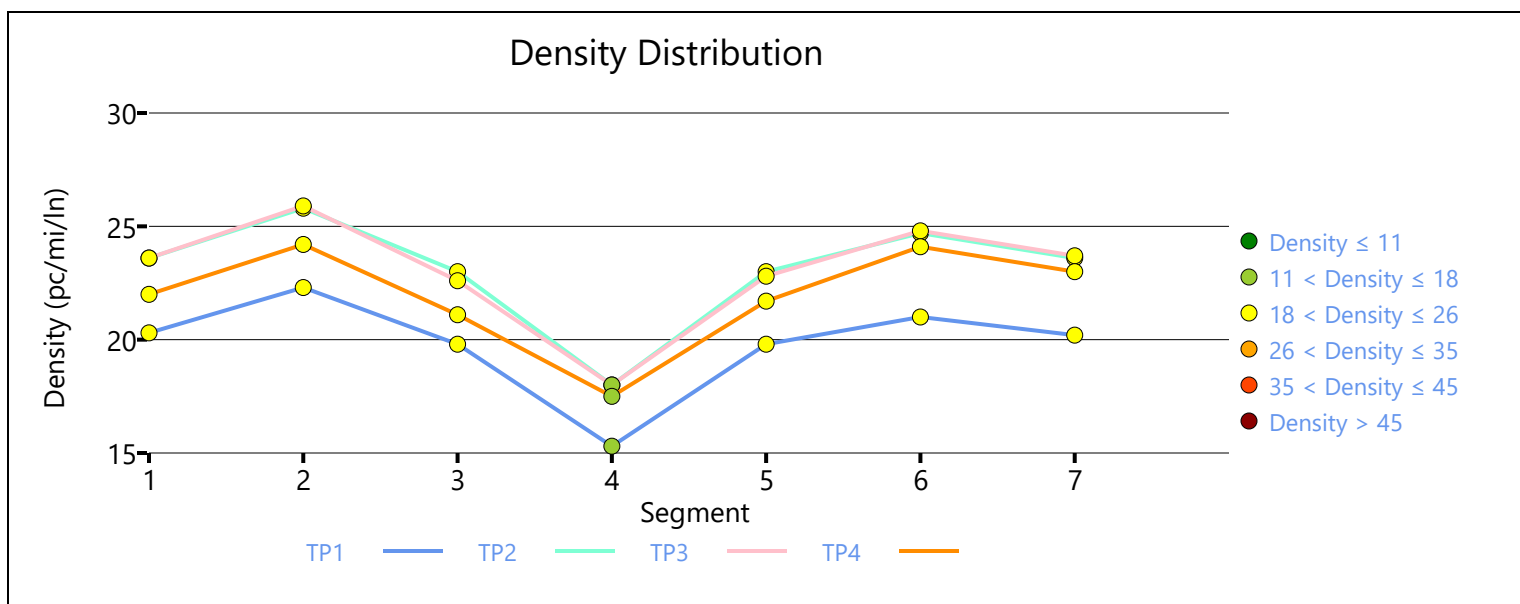
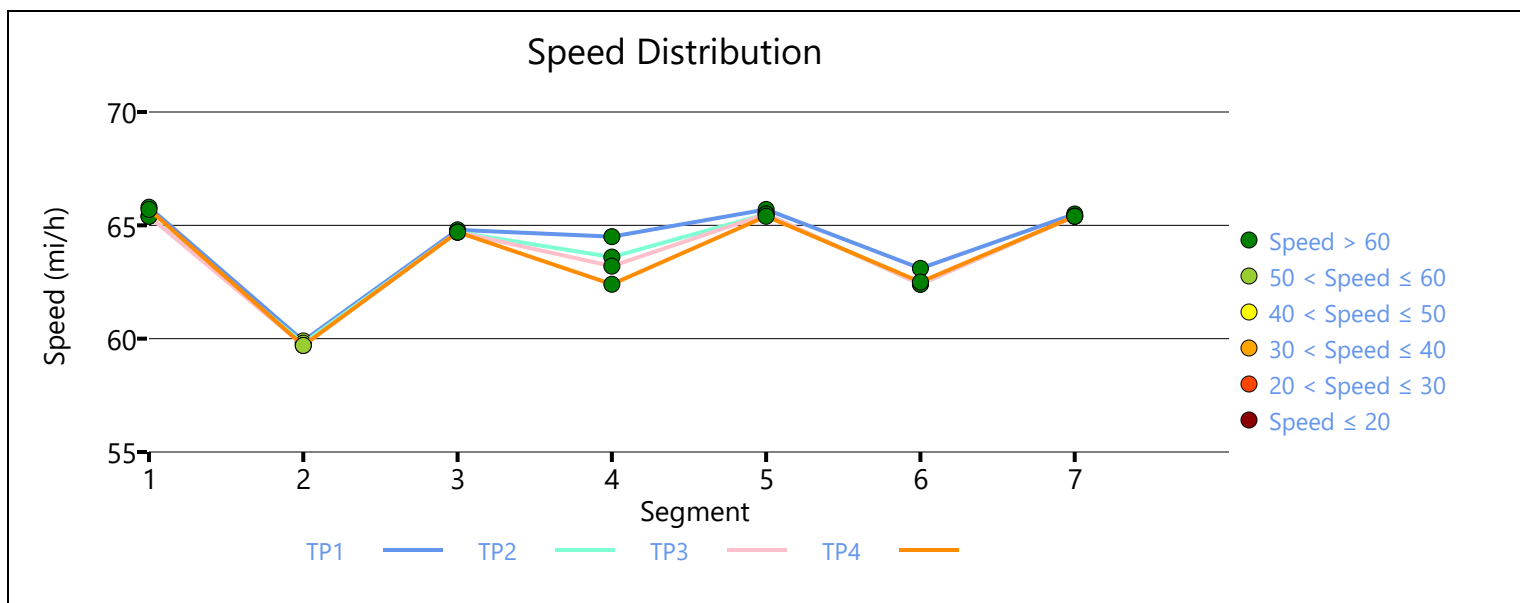
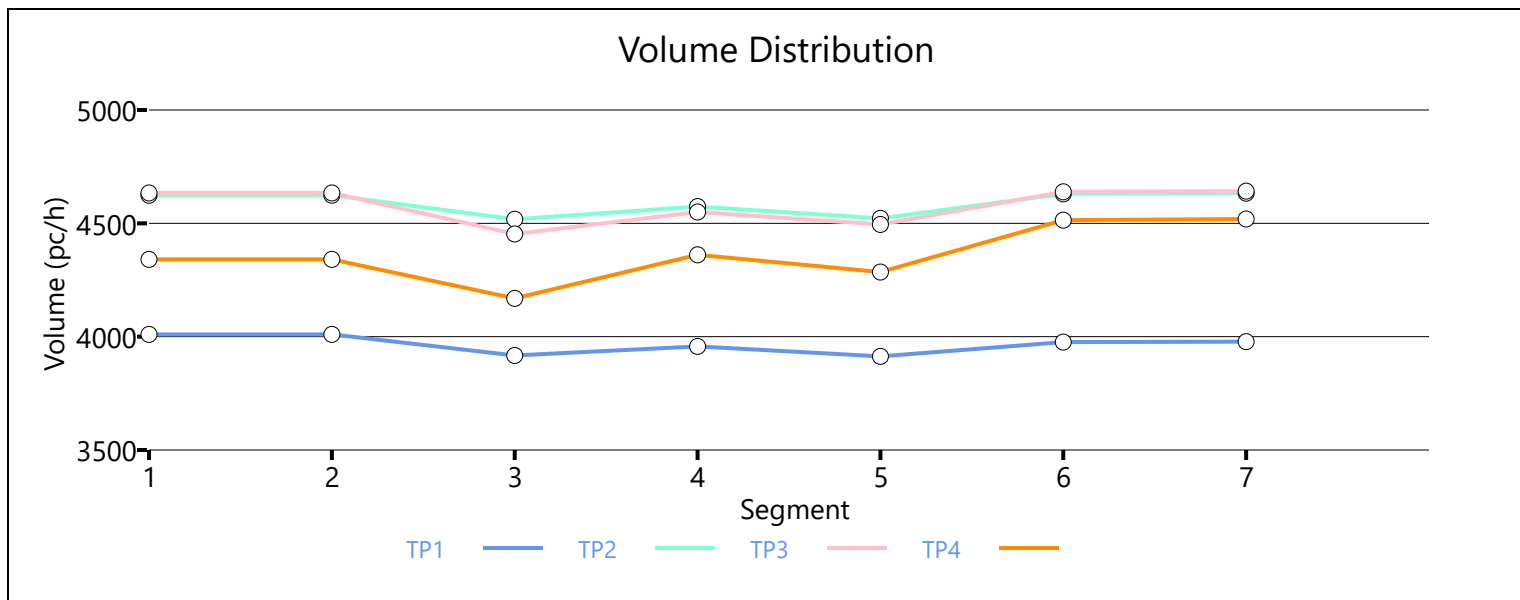
No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic	I-295 WB	1250	3
2	Diverge	Diverge	I-295 WB Off-Ramp to NB Staples Mill Rd (US 33)	1500	3
3	Basic	Basic	I-295 WB	650	3
4	Weaving	Weaving	Staples Mill Rd NB On-Ramp to WB I-295_Weaving_I-295 WB Off-Ramp to SB Staples Mill Rd	1600	4
5	Basic	Basic	I-295 WB	1200	3
6	Merge	Merge	Staples Mill Rd (US 33) SB On-Ramp to WB I-295	1500	3
7	Basic	Basic	I-295 WB	1250	3

Facility Segment Data

Segment 1: Basic															
Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
1	1.00		0.956		4010		7074		0.57		65.8		20.3		C
2	1.00		0.956		4624		7074		0.65		65.4		23.6		C
3	1.00		0.956		4634		7074		0.66		65.4		23.6		C
4	1.00		0.956		4341		7074		0.61		65.7		22.0		C
Segment 2: Diverge															
Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	1.00	1.00	0.956	0.980	4010	91	7200	1900	0.56	0.05	59.9	54.2	22.3	22.8	C
2	1.00	1.00	0.956	0.980	4624	104	7200	1900	0.64	0.05	59.8	54.1	25.8	25.7	C
3	1.00	1.00	0.956	0.980	4634	177	7200	1900	0.64	0.09	59.7	53.9	25.9	25.8	C
4	1.00	1.00	0.956	0.980	4341	167	7200	1900	0.60	0.09	59.7	54.0	24.2	24.5	C

Segment 3: Basic															
Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
1	1.00		0.956		3917		7074		0.55		64.8		19.8		C
2	1.00		0.956		4518		7074		0.64		64.7		23.0		C
3	1.00		0.956		4453		7074		0.63		64.7		22.6		C
4	1.00		0.956		4169		7074		0.59		64.7		21.1		C
Segment 4: Weaving															
Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
1	1.00		0.956		3957		8900		0.44		64.5		15.3		B
2	1.00		0.956		4574		8892		0.51		63.6		18.0		B
3	1.00		0.956		4550		8864		0.51		63.2		18.0		B
4	1.00		0.956		4361		8780		0.50		62.4		17.5		B
Segment 5: Basic															
Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
1	1.00		0.956		3913		7074		0.55		65.7		19.8		C
2	1.00		0.956		4522		7074		0.64		65.5		23.0		C
3	1.00		0.956		4495		7074		0.64		65.5		22.8		C
4	1.00		0.956		4285		7074		0.61		65.4		21.7		C
Segment 6: Merge															
Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	1.00	1.00	0.956	0.980	3976	63	7200	2000	0.55	0.03	63.1	61.3	21.0	19.4	B
2	1.00	1.00	0.956	0.980	4630	108	7200	2000	0.64	0.05	62.4	60.7	24.7	22.6	C
3	1.00	1.00	0.956	0.980	4639	144	7200	2000	0.64	0.07	62.4	60.7	24.8	22.7	C
4	1.00	1.00	0.956	0.980	4514	229	7200	2000	0.63	0.11	62.5	60.8	24.1	22.4	C
Segment 7: Basic															
Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
1	1.00		0.956		3978		7074		0.56		65.5		20.2		C
2	1.00		0.956		4633		7074		0.65		65.4		23.6		C
3	1.00		0.956		4642		7074		0.66		65.4		23.7		C
4	1.00		0.956		4519		7074		0.64		65.4		23.0		C
Facility Time Period Results															
T	Speed, mi/h			Density, pc/mi/ln			Density, veh/mi/ln			Travel Time, min			LOS		
1	63.9			19.5			18.6			1.60			C		
2	63.5			22.8			21.8			1.60			C		
3	63.4			22.7			21.8			1.60			C		
4	63.4			21.7			20.7			1.60			C		

Facility Overall Results			
Space Mean Speed, mi/h	63.6	Density, veh/mi/ln	20.7
Average Travel Time, min	1.60	Density, pc/mi/ln	21.7
Messages			
Comments			



Project Information					
Construction Period Scenario					

Analyst	Kimley-Horn	Date	9/2/2025
Agency		Analysis Year	2034
Jurisdiction		Time Period Analyzed	No-Build PM Peak Hour
Project Description	Mountain Road Technology Park	Unit	United States Customary

Facility Global Input	
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Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45.0
Queue Discharge Capacity Drop, %	7	Total Segments	7
Total Time Periods	4	Time Period Duration, min	15
Facility Length, mi	1.70		

Facility Segment Data									
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No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic	I-295 EB	1250	3
2	Diverge	Diverge	I-295 EB Off-Ramp to SB Staples Mill Rd (US 33)	1500	3
3	Basic	Basic	I-295 EB	1000	3
4	Weaving	Weaving	Staples Mill SB On-Ramp to EB I-295_Weaving_I-295 EB Off-Ramp to NB Staples Mill	1500	4
5	Basic	Basic	I-295 EB	950	3
6	Merge	Merge	Staples Mill NB On-Ramp to EB I-295	1500	3
7	Basic	Basic	I-295 EB	1250	3

Facility Segment Data									
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Segment 1: Basic	
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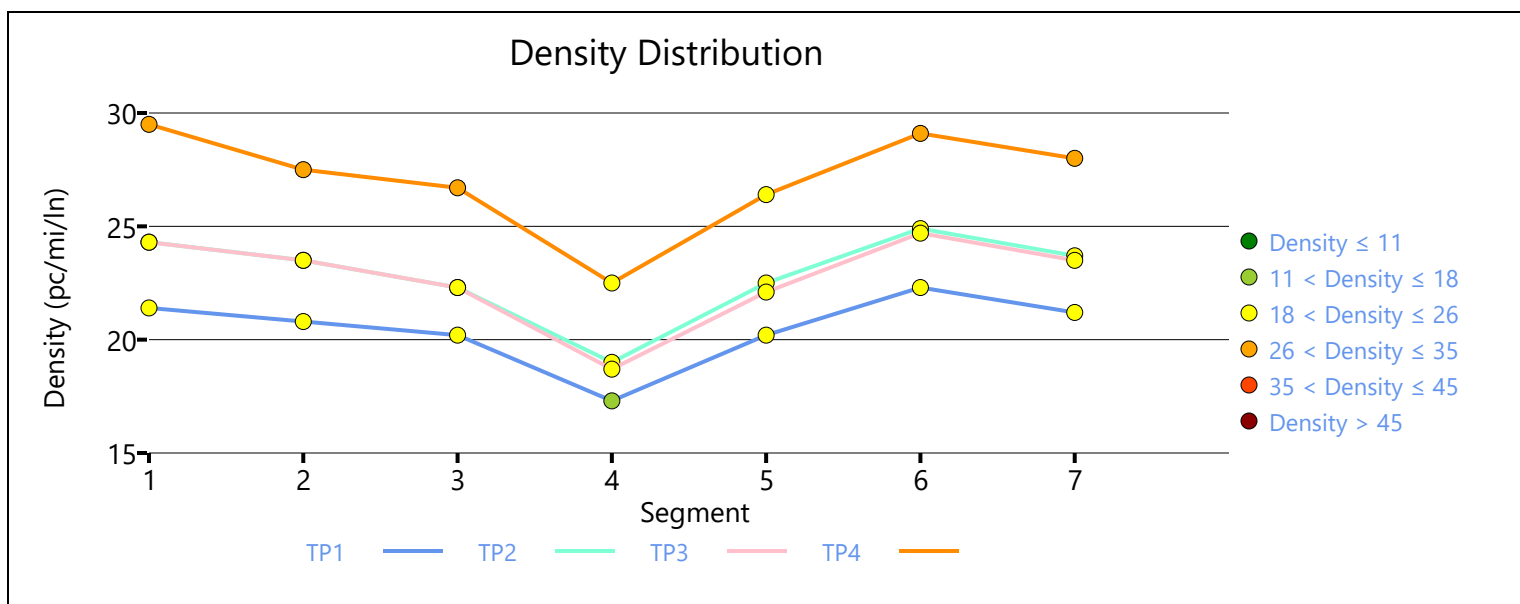
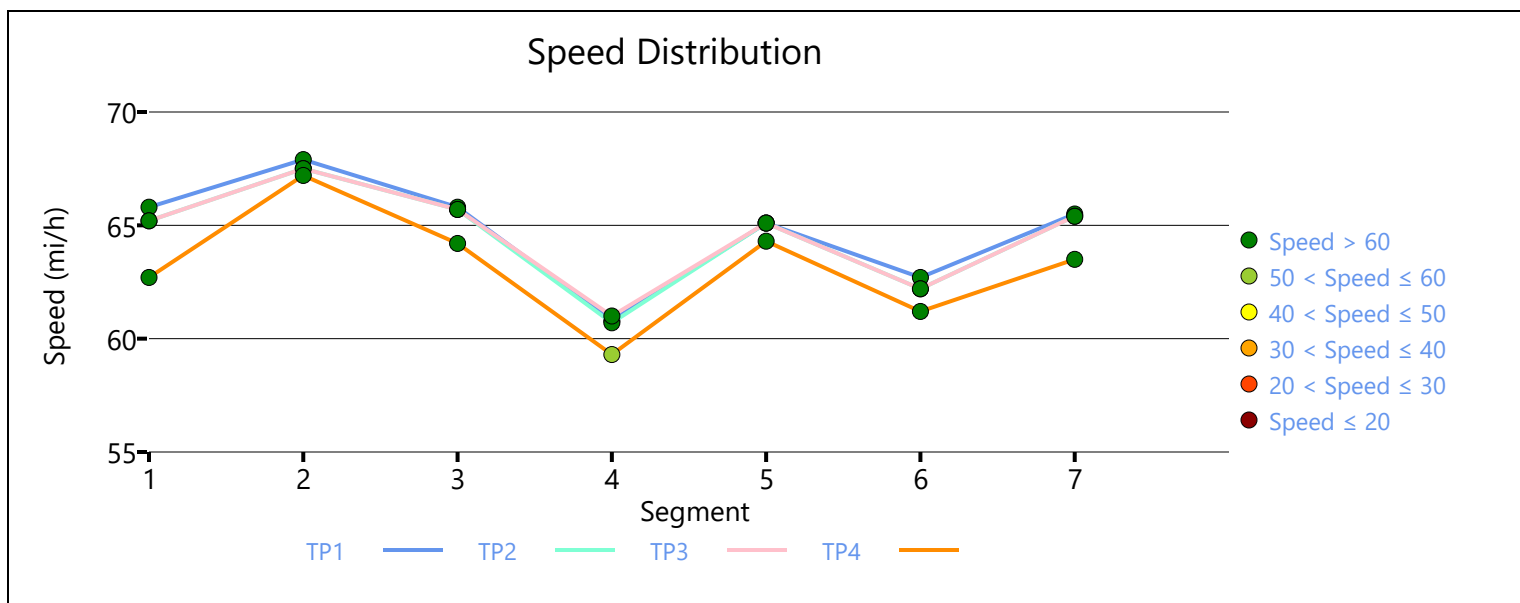
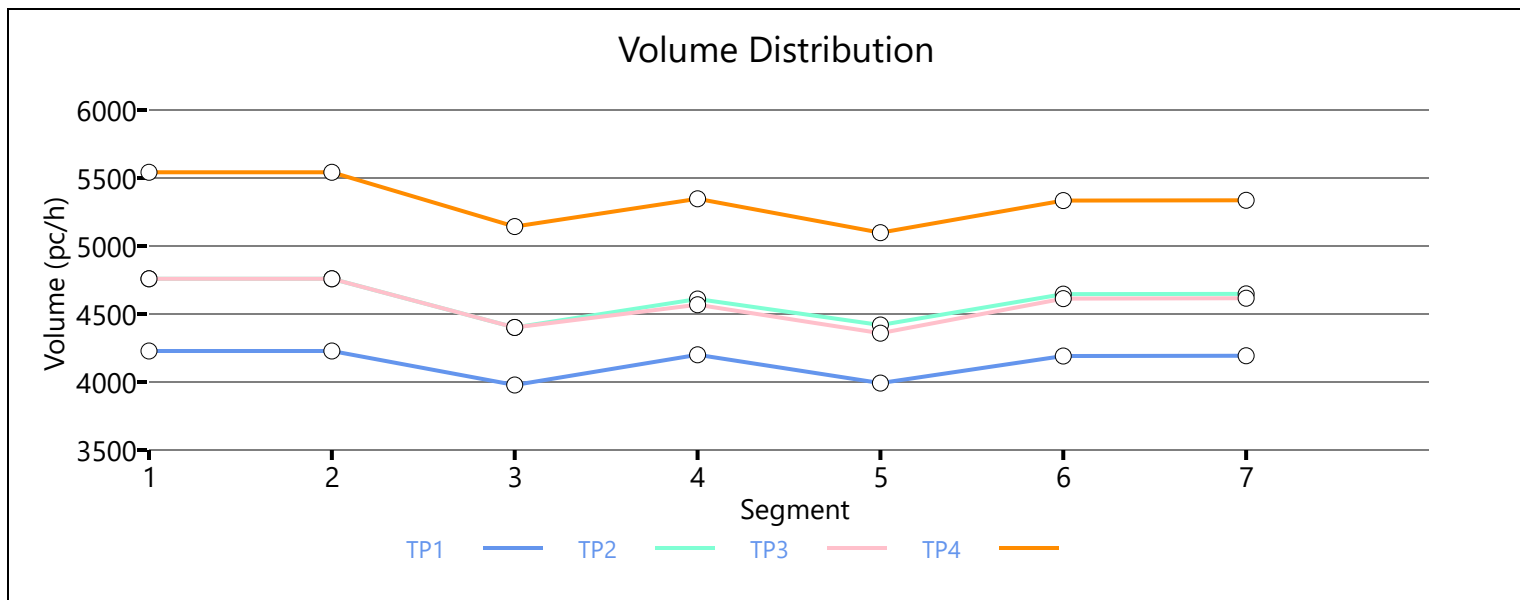
Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	1.00	0.971	4228	7074	0.60	65.8	21.4	C
2	1.00	0.971	4759	7074	0.67	65.2	24.3	C
3	1.00	0.971	4759	7074	0.67	65.2	24.3	C
4	1.00	0.971	5542	7074	0.78	62.7	29.5	D

Segment 2: Diverge									
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Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	1.00	1.00	0.971	0.980	4228	247	7200	2200	0.59	0.11	67.9	64.7	20.8	22.7	C
2	1.00	1.00	0.971	0.980	4759	355	7200	2200	0.66	0.16	67.5	64.4	23.5	25.3	C
3	1.00	1.00	0.971	0.980	4759	355	7200	2200	0.66	0.16	67.5	64.4	23.5	25.3	C
4	1.00	1.00	0.971	0.980	5542	395	7200	2200	0.77	0.18	67.2	64.3	27.5	28.7	D

Segment 3: Basic

Space Mean Speed, mi/h	64.0	Density, veh/mi/ln	22.4
Average Travel Time, min	1.60	Density, pc/mi/ln	23.1
Messages			
Comments			



HCS7 Freeway Facilities Report

Project Information

Analyst	Kimley-Horn	Date	9/2/2025
Agency		Analysis Year	2034
Jurisdiction		Time Period Analyzed	No-Build PM Peak Hour
Project Description	Mountain Road Technology Park	Unit	United States Customary

Facility Global Input

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45.0
Queue Discharge Capacity Drop, %	7	Total Segments	7
Total Time Periods	4	Time Period Duration, min	15
Facility Length, mi	1.70		

Facility Segment Data

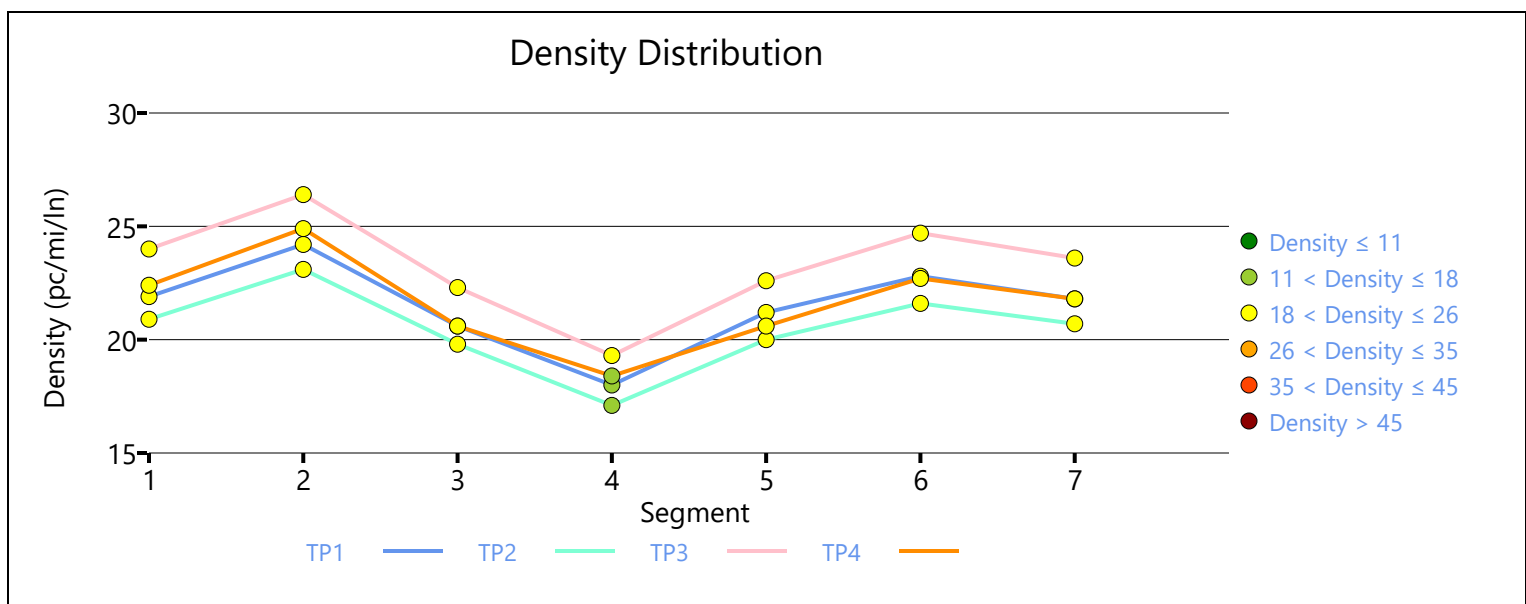
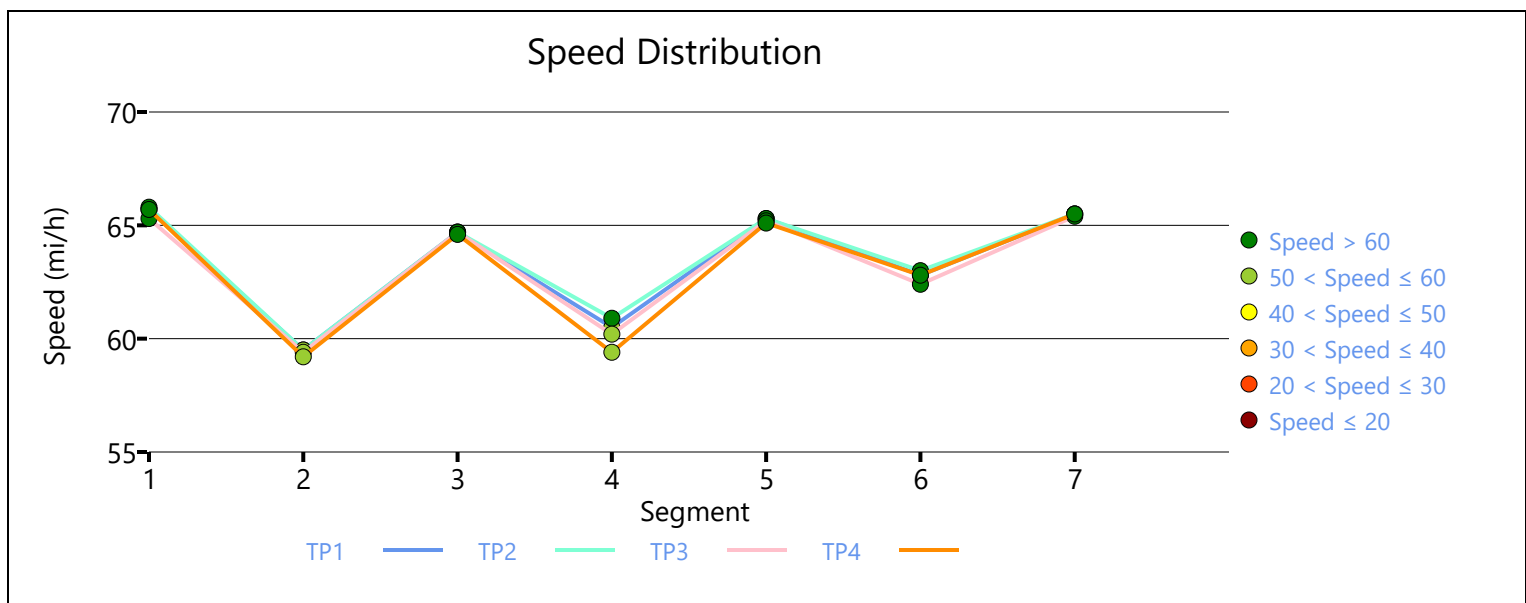
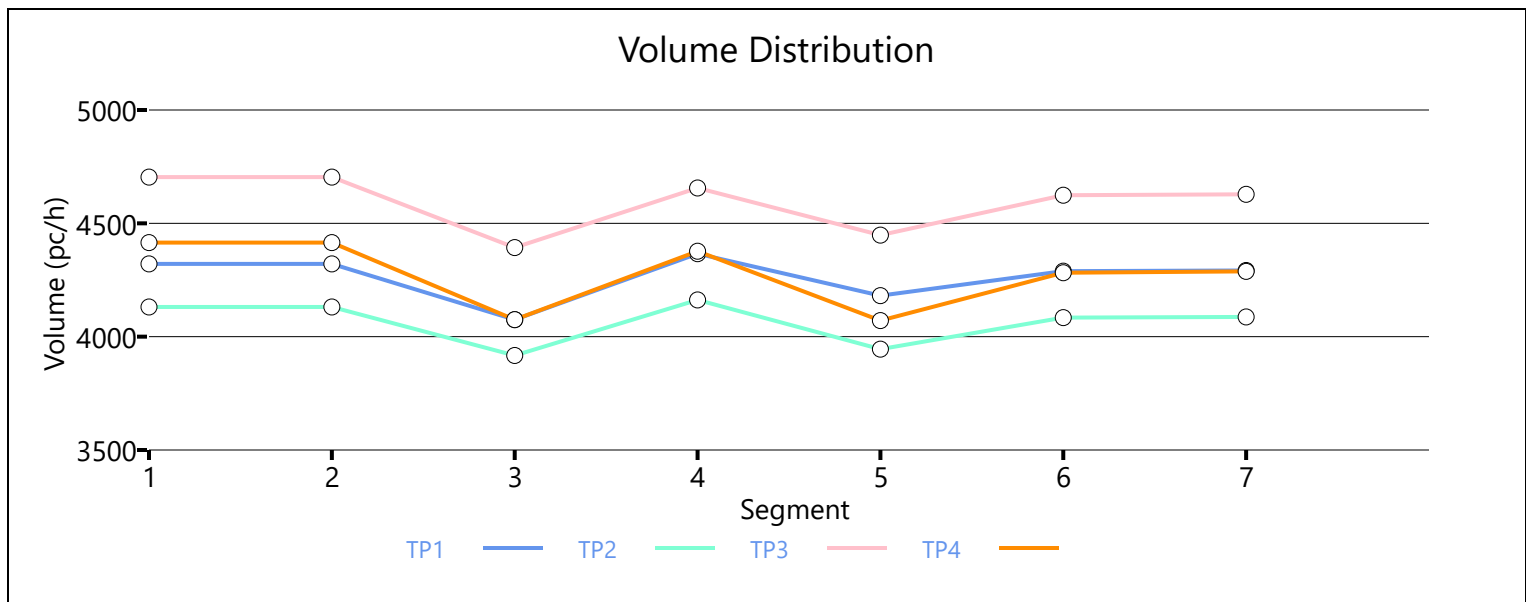
No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic	I-295 WB	1250	3
2	Diverge	Diverge	I-295 WB Off-Ramp to NB Staples Mill Rd (US 33)	1500	3
3	Basic	Basic	I-295 WB	650	3
4	Weaving	Weaving	Staples Mill Rd NB On-Ramp to WB I-295_Weaving_I-295 WB Off-Ramp to SB Staples Mill Rd	1600	4
5	Basic	Basic	I-295 WB	1200	3
6	Merge	Merge	Staples Mill Rd (US 33) SB On-Ramp to WB I-295	1500	3
7	Basic	Basic	I-295 WB	1250	3

Facility Segment Data

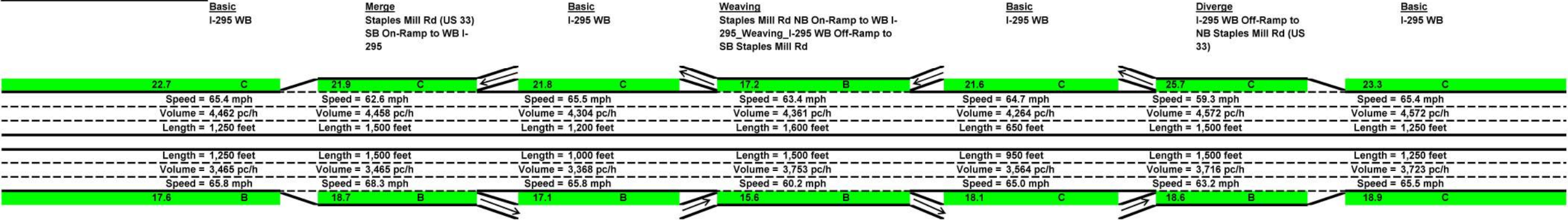
Segment 1: Basic															
Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
1	1.00		0.955		4321		7074		0.61		65.7		21.9		C
2	1.00		0.955		4131		7074		0.58		65.8		20.9		C
3	1.00		0.955		4704		7074		0.66		65.3		24.0		C
4	1.00		0.955		4415		7074		0.62		65.7		22.4		C
Segment 2: Diverge															
Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	1.00	1.00	0.955	0.980	4321	240	7200	1900	0.60	0.13	59.5	53.8	24.2	24.5	C
2	1.00	1.00	0.955	0.980	4131	208	7200	1900	0.57	0.11	59.5	53.8	23.1	23.5	C
3	1.00	1.00	0.955	0.980	4704	303	7200	1900	0.65	0.16	59.4	53.6	26.4	26.3	C
4	1.00	1.00	0.955	0.980	4415	331	7200	1900	0.61	0.17	59.2	53.5	24.9	25.0	C

Segment 3: Basic															
Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
1	1.00		0.955		4075		7074		0.58		64.7		20.6		C
2	1.00		0.955		3917		7074		0.55		64.7		19.8		C
3	1.00		0.955		4393		7074		0.62		64.7		22.3		C
4	1.00		0.955		4075		7074		0.58		64.6		20.6		C
Segment 4: Weaving															
Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
1	1.00		0.955		4366		8636		0.51		60.5		18.0		B
2	1.00		0.955		4162		8632		0.48		60.9		17.1		B
3	1.00		0.955		4656		8660		0.54		60.2		19.3		B
4	1.00		0.955		4377		8544		0.51		59.4		18.4		B
Segment 5: Basic															
Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
1	1.00		0.955		4181		7074		0.59		65.3		21.2		C
2	1.00		0.955		3945		7074		0.56		65.3		20.0		C
3	1.00		0.955		4448		7074		0.63		65.2		22.6		C
4	1.00		0.955		4071		7074		0.58		65.1		20.6		C
Segment 6: Merge															
Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	1.00	1.00	0.955	0.980	4289	108	7200	2000	0.60	0.05	62.8	61.0	22.8	21.0	C
2	1.00	1.00	0.955	0.980	4084	139	7200	2000	0.57	0.07	63.0	61.2	21.6	20.1	C
3	1.00	1.00	0.955	0.980	4624	176	7200	2000	0.64	0.09	62.4	60.7	24.7	22.7	C
4	1.00	1.00	0.955	0.980	4282	211	7200	2000	0.59	0.11	62.8	61.0	22.7	21.2	C
Segment 7: Basic															
Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
1	1.00		0.955		4292		7074		0.61		65.5		21.8		C
2	1.00		0.955		4087		7074		0.58		65.5		20.7		C
3	1.00		0.955		4628		7074		0.65		65.4		23.6		C
4	1.00		0.955		4288		7074		0.61		65.5		21.8		C
Facility Time Period Results															
T	Speed, mi/h			Density, pc/mi/ln			Density, veh/mi/ln			Travel Time, min			LOS		
1	63.0			21.3			20.4			1.60			C		
2	63.1			20.3			19.4			1.60			C		
3	62.8			23.1			22.0			1.60			C		
4	62.7			21.5			20.6			1.60			C		

Facility Overall Results			
Space Mean Speed, mi/h	62.9	Density, veh/mi/ln	20.6
Average Travel Time, min	1.60	Density, pc/mi/ln	21.6
Messages			
Comments			



2034 Build (Peak Construction)
AM Peak Hour



Basic I-295 EB

Diverge I-295 EB Off-Ramp to SB Staples Mill Rd (US 33)

Basic I-295 EB

Weaving Staples Mill SB On-Ramp to EB I-295 Weaving I-295 EB Off-Ramp to NB Staples Mill

Basic I-295 EB

Merge Staples Mill NB On-Ramp to EB I-295

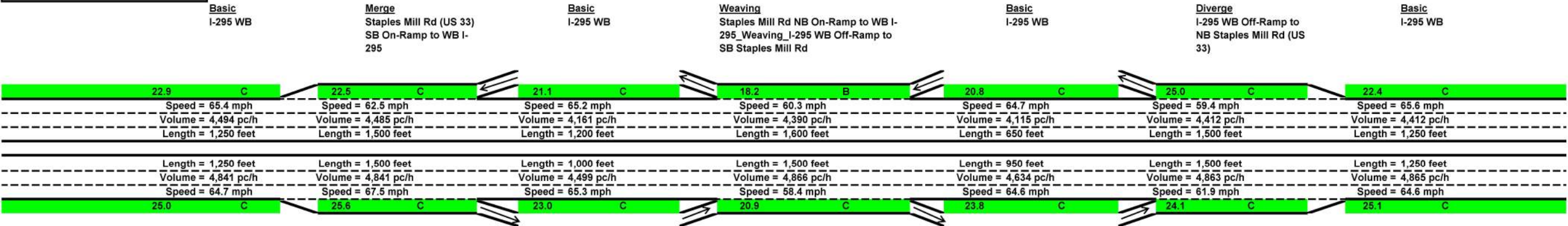
Basic I-295 EB

Merge & Diverge Segments		
LEGEND		
LOS	DENSITY (pc/ln/mi)	COLOR
A	0-10	
B	10-20	
C	20-28	
D	28-35	
E	35 +	
F	Dem. > Cap.	

Weave Segments		
LEGEND		
LOS	DENSITY (pc/ln/mi)	COLOR
A	0-10	
B	10-20	
C	20-28	
D	28-35	
E	35-43	
F	43+	

Basic Segments		
LEGEND		
LOS	DENSITY (pc/ln/mi)	COLOR
A	0-11	
B	11-18	
C	18-26	
D	26-35	
E	35-45	
F	45+	

2034 Build (Peak Construction)
PM Peak Hour



Basic I-295 EB

Diverge I-295 EB Off-Ramp to SB Staples Mill Rd (US 33)

Basic I-295 EB

Weaving Staples Mill SB On-Ramp to EB I-295 Weaving I-295 EB Off-Ramp to NB Staples Mill

Basic I-295 EB

Merge Staples Mill NB On-Ramp to EB I-295

Basic I-295 EB

* Values are for demonstrative purposes and may not reflect actual or anticipated conditions/results

Project Information					
Construction Period Scenario					

Analyst	Kimley-Horn	Date	9/2/2025
Agency		Analysis Year	2034
Jurisdiction		Time Period Analyzed	Build AM Peak Hour
Project Description	Mountain Road Technology Park	Unit	United States Customary

Facility Global Input	
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Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45.0
Queue Discharge Capacity Drop, %	7	Total Segments	7
Total Time Periods	4	Time Period Duration, min	15
Facility Length, mi	1.70		

Facility Segment Data									
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No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic	I-295 EB	1250	3
2	Diverge	Diverge	I-295 EB Off-Ramp to SB Staples Mill Rd (US 33)	1500	3
3	Basic	Basic	I-295 EB	1000	3
4	Weaving	Weaving	Staples Mill SB On-Ramp to EB I-295_Weaving_I-295 EB Off-Ramp to NB Staples Mill	1500	4
5	Basic	Basic	I-295 EB	950	3
6	Merge	Merge	Staples Mill NB On-Ramp to EB I-295	1500	3
7	Basic	Basic	I-295 EB	1250	3

Facility Segment Data									
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Segment 1: Basic	
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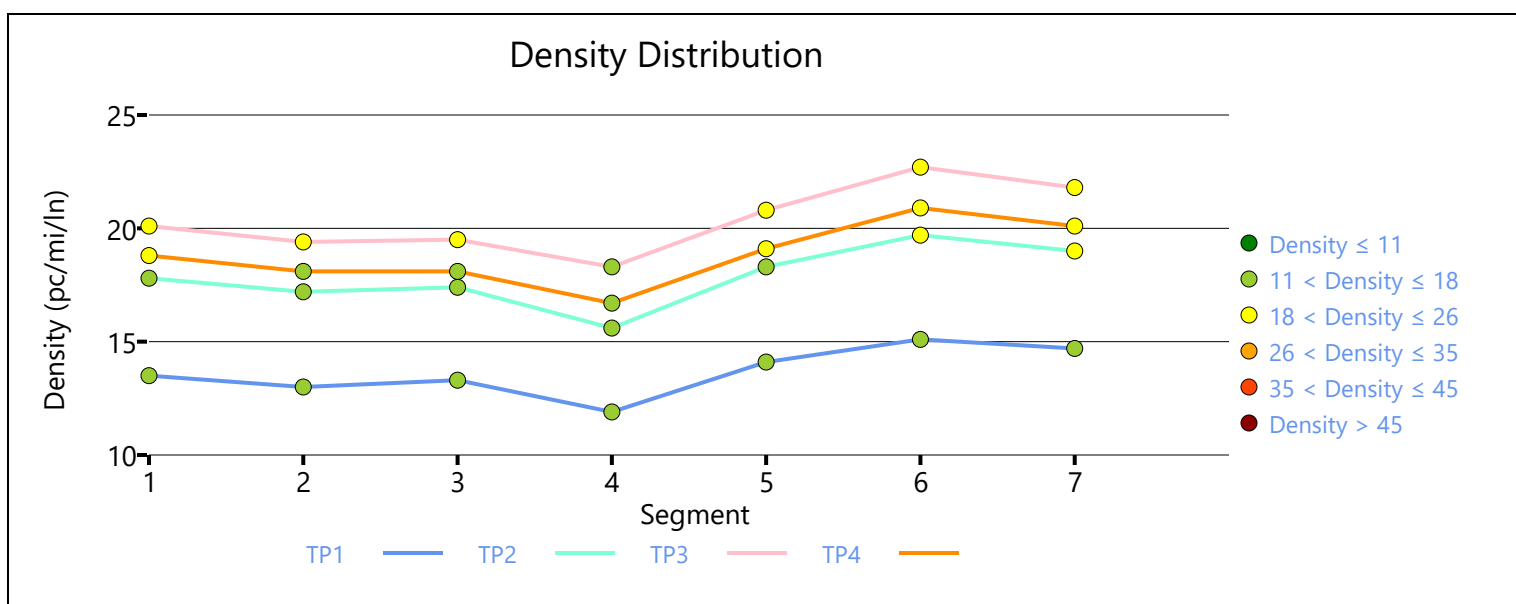
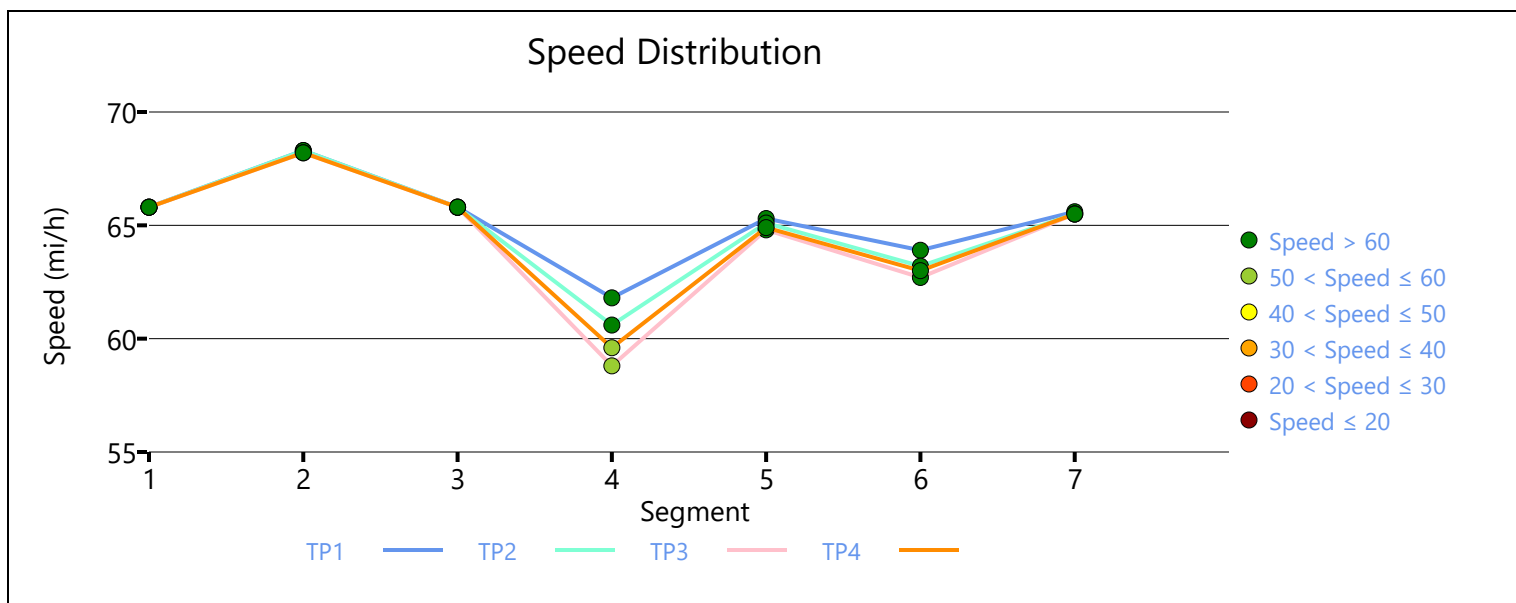
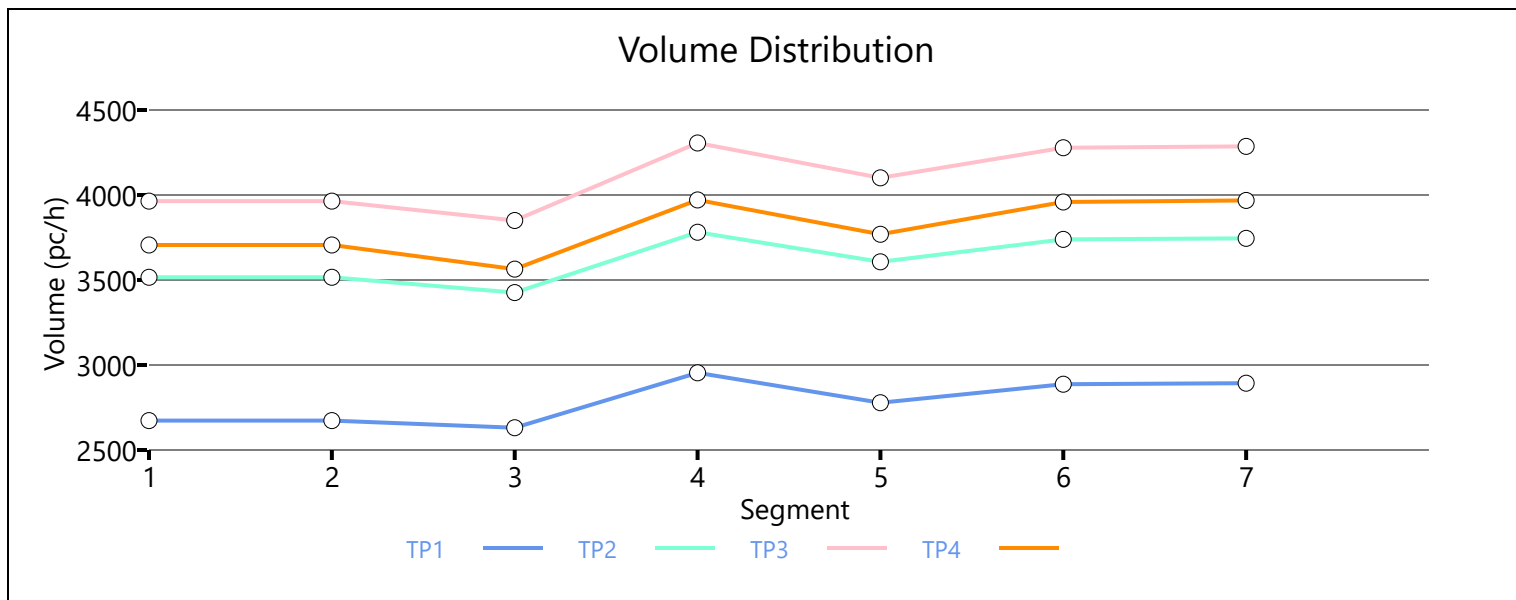
Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	1.00	0.934	2673	7074	0.38	65.8	13.5	B
2	1.00	0.934	3516	7074	0.50	65.8	17.8	B
3	1.00	0.934	3964	7074	0.56	65.8	20.1	C
4	1.00	0.934	3706	7074	0.52	65.8	18.8	C

Segment 2: Diverge									
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Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	1.00	1.00	0.934	0.980	2673	41	7200	2200	0.37	0.02	68.3	65.2	13.0	14.6	B
2	1.00	1.00	0.934	0.980	3516	86	7200	2200	0.49	0.04	68.3	65.1	17.2	19.0	B
3	1.00	1.00	0.934	0.980	3964	108	7200	2200	0.55	0.05	68.2	65.0	19.4	21.3	C
4	1.00	1.00	0.934	0.980	3706	135	7200	2200	0.51	0.06	68.2	65.0	18.1	20.0	B

Segment 3: Basic

Space Mean Speed, mi/h	64.5	Density, veh/mi/ln	16.4
Average Travel Time, min	1.60	Density, pc/mi/ln	17.6
Messages			
Comments			



HCS7 Freeway Facilities Report

Project Information Construction Period Scenario

Analyst	Kimley-Horn	Date	9/2/2025
Agency		Analysis Year	2034
Jurisdiction		Time Period Analyzed	Build AM Peak Hour
Project Description	Mountain Road Technology Park	Unit	United States Customary

Facility Global Input

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45.0
Queue Discharge Capacity Drop, %	7	Total Segments	7
Total Time Periods	4	Time Period Duration, min	15
Facility Length, mi	1.70		

Facility Segment Data

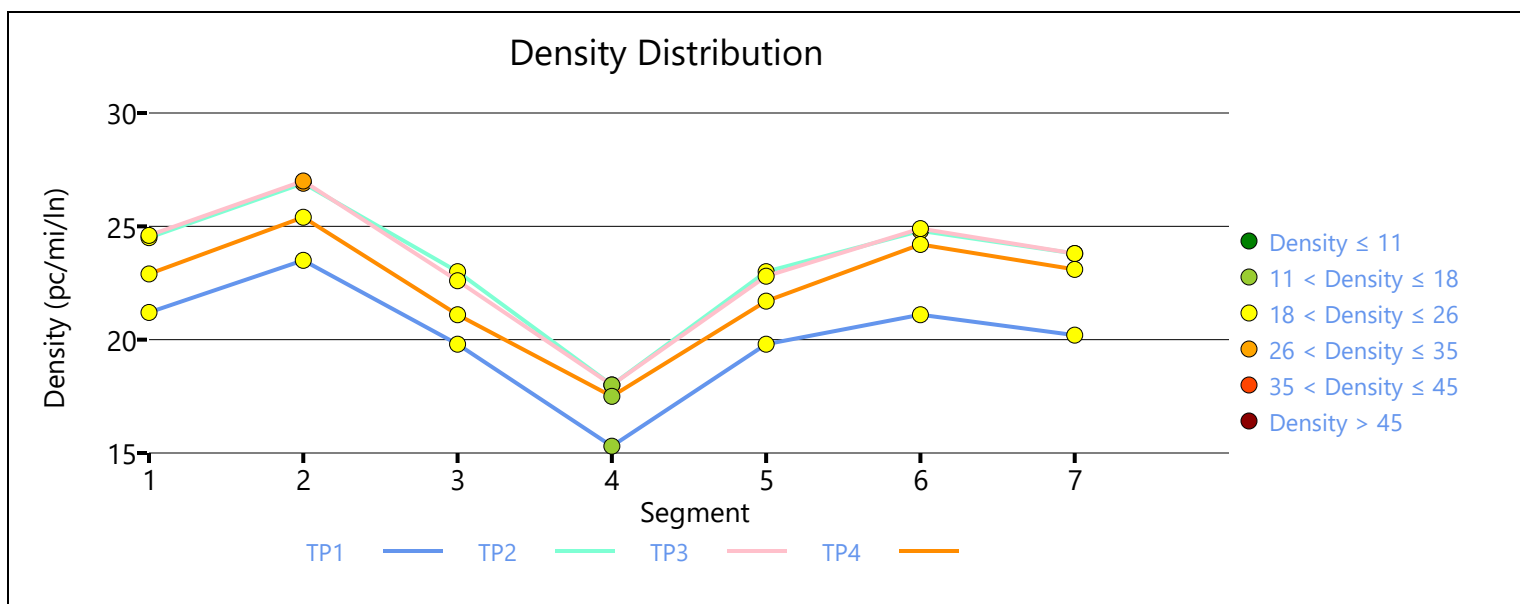
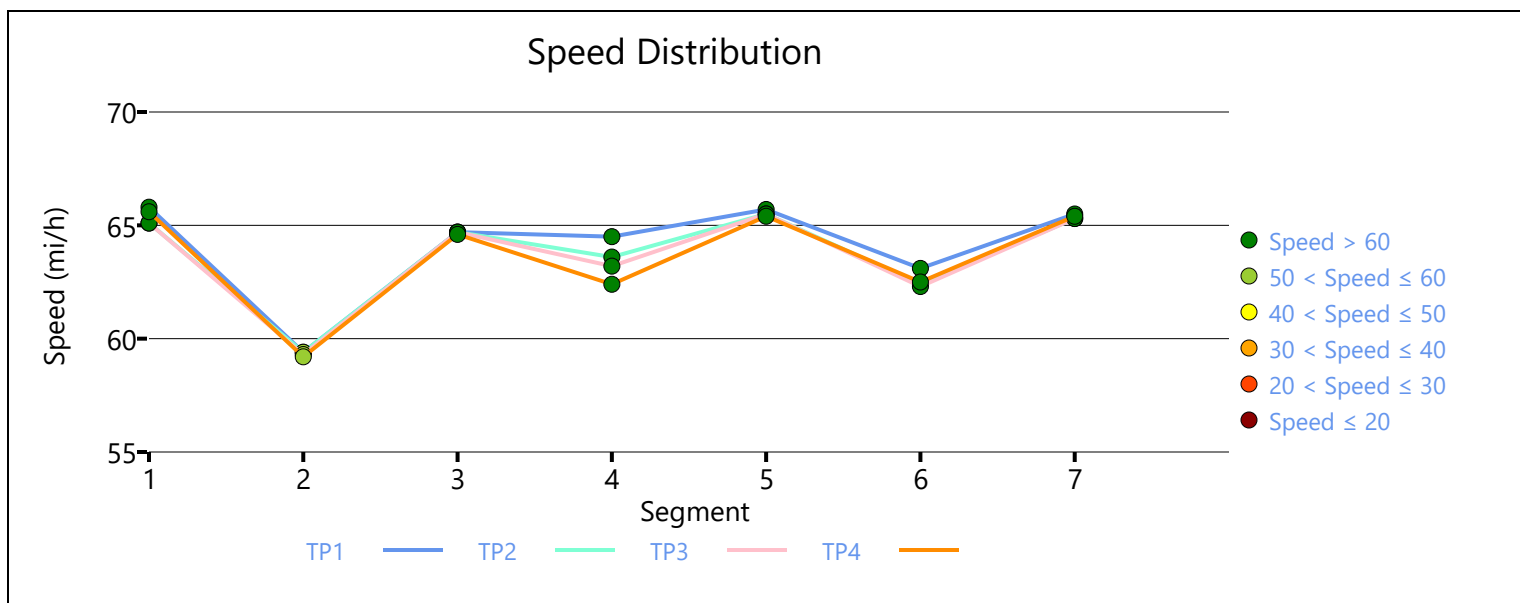
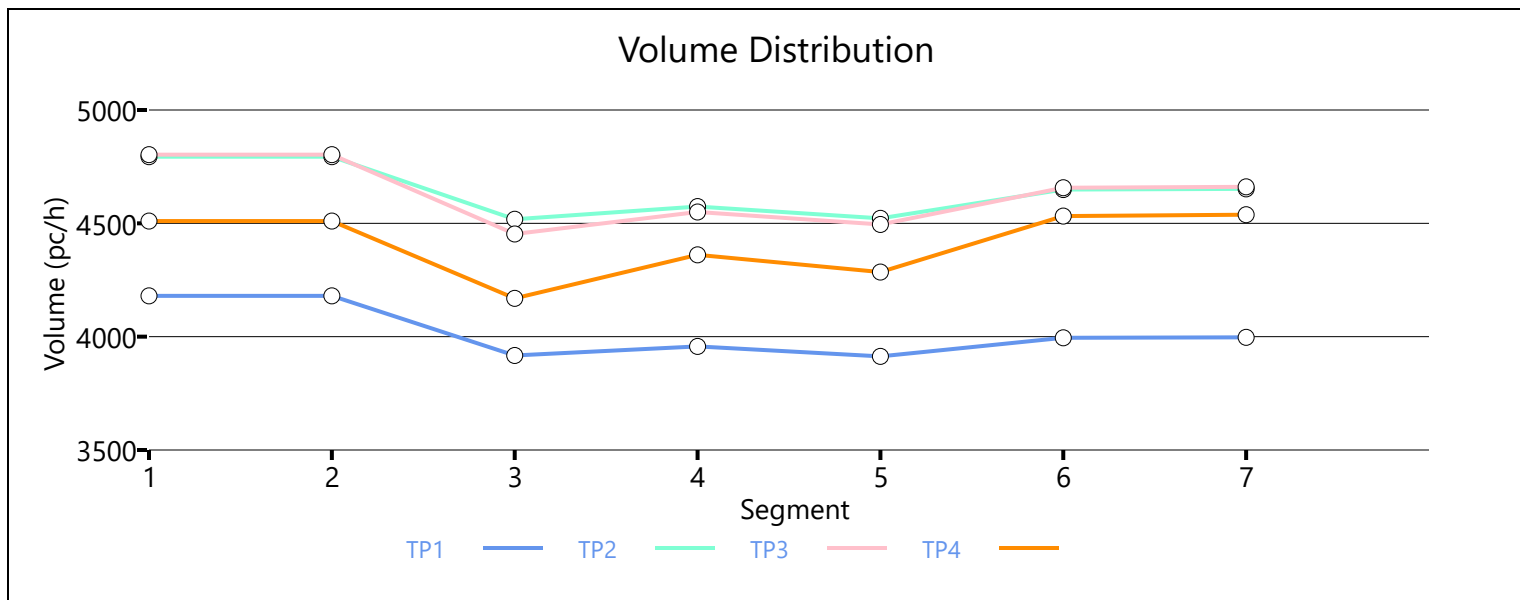
No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic	I-295 WB	1250	3
2	Diverge	Diverge	I-295 WB Off-Ramp to NB Staples Mill Rd (US 33)	1500	3
3	Basic	Basic	I-295 WB	650	3
4	Weaving	Weaving	Staples Mill Rd NB On-Ramp to WB I-295_Weaving_I-295 WB Off-Ramp to SB Staples Mill Rd	1600	4
5	Basic	Basic	I-295 WB	1200	3
6	Merge	Merge	Staples Mill Rd (US 33) SB On-Ramp to WB I-295	1500	3
7	Basic	Basic	I-295 WB	1250	3

Facility Segment Data

Segment 1: Basic															
Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
1	1.00		0.956		4180		7074		0.59		65.8		21.2		C
2	1.00		0.956		4794		7074		0.68		65.1		24.5		C
3	1.00		0.956		4803		7074		0.68		65.1		24.6		C
4	1.00		0.956		4510		7074		0.64		65.6		22.9		C
Segment 2: Diverge															
Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	1.00	1.00	0.956	0.980	4180	256	7200	1900	0.58	0.13	59.4	53.7	23.5	23.9	C
2	1.00	1.00	0.956	0.980	4794	269	7200	1900	0.67	0.14	59.4	53.7	26.9	26.7	C
3	1.00	1.00	0.956	0.980	4803	342	7200	1900	0.67	0.18	59.3	53.5	27.0	26.8	C
4	1.00	1.00	0.956	0.980	4510	333	7200	1900	0.63	0.18	59.2	53.5	25.4	25.5	C

Segment 3: Basic															
Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
1	1.00		0.956		3917		7074		0.55		64.7		19.8		C
2	1.00		0.956		4518		7074		0.64		64.7		23.0		C
3	1.00		0.956		4453		7074		0.63		64.7		22.6		C
4	1.00		0.956		4169		7074		0.59		64.6		21.1		C
Segment 4: Weaving															
Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
1	1.00		0.956		3957		8900		0.44		64.5		15.3		B
2	1.00		0.956		4574		8892		0.51		63.6		18.0		B
3	1.00		0.956		4550		8864		0.51		63.2		18.0		B
4	1.00		0.956		4361		8780		0.50		62.4		17.5		B
Segment 5: Basic															
Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
1	1.00		0.956		3913		7074		0.55		65.7		19.8		C
2	1.00		0.956		4522		7074		0.64		65.5		23.0		C
3	1.00		0.956		4495		7074		0.64		65.5		22.8		C
4	1.00		0.956		4285		7074		0.61		65.4		21.7		C
Segment 6: Merge															
Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	1.00	1.00	0.956	0.980	3995	82	7200	2000	0.55	0.04	63.1	61.3	21.1	19.5	B
2	1.00	1.00	0.956	0.980	4649	127	7200	2000	0.65	0.06	62.4	60.7	24.8	22.7	C
3	1.00	1.00	0.956	0.980	4657	162	7200	2000	0.65	0.08	62.3	60.6	24.9	22.9	C
4	1.00	1.00	0.956	0.980	4532	247	7200	2000	0.63	0.12	62.5	60.7	24.2	22.5	C
Segment 7: Basic															
Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
1	1.00		0.956		3997		7074		0.57		65.5		20.2		C
2	1.00		0.956		4652		7074		0.66		65.3		23.8		C
3	1.00		0.956		4661		7074		0.66		65.3		23.8		C
4	1.00		0.956		4538		7074		0.64		65.4		23.1		C
Facility Time Period Results															
T	Speed, mi/h			Density, pc/mi/ln			Density, veh/mi/ln			Travel Time, min			LOS		
1	63.8			19.8			18.9			1.60			C		
2	63.4			23.1			22.1			1.60			C		
3	63.3			23.1			22.1			1.60			C		
4	63.2			22.0			21.1			1.60			C		

Facility Overall Results			
Space Mean Speed, mi/h	63.4	Density, veh/mi/ln	21.0
Average Travel Time, min	1.60	Density, pc/mi/ln	22.0
Messages			
Comments			



HCS7 Freeway Facilities Report

Project Information Construction Period Scenario

Analyst	Kimley-Horn	Date	9/2/2025
Agency		Analysis Year	2034
Jurisdiction		Time Period Analyzed	Build PM Peak Hour
Project Description	Mountain Road Technology Park	Unit	United States Customary

Facility Global Input

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45.0
Queue Discharge Capacity Drop, %	7	Total Segments	7
Total Time Periods	4	Time Period Duration, min	15
Facility Length, mi	1.70		

Facility Segment Data

No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic	I-295 EB	1250	3
2	Diverge	Diverge	I-295 EB Off-Ramp to SB Staples Mill Rd (US 33)	1500	3
3	Basic	Basic	I-295 EB	1000	3
4	Weaving	Weaving	Staples Mill SB On-Ramp to EB I-295_Weaving_I-295 EB Off-Ramp to NB Staples Mill	1500	4
5	Basic	Basic	I-295 EB	950	3
6	Merge	Merge	Staples Mill NB On-Ramp to EB I-295	1500	3
7	Basic	Basic	I-295 EB	1250	3

Facility Segment Data

Segment 1: Basic

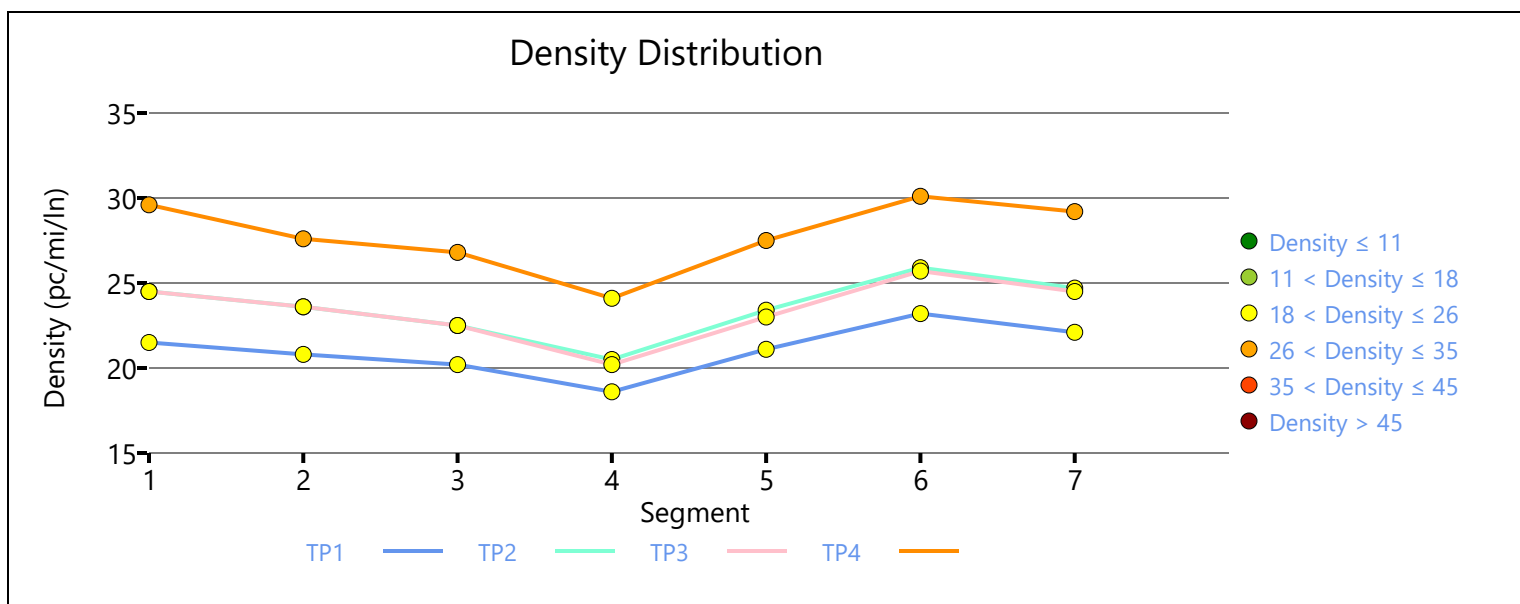
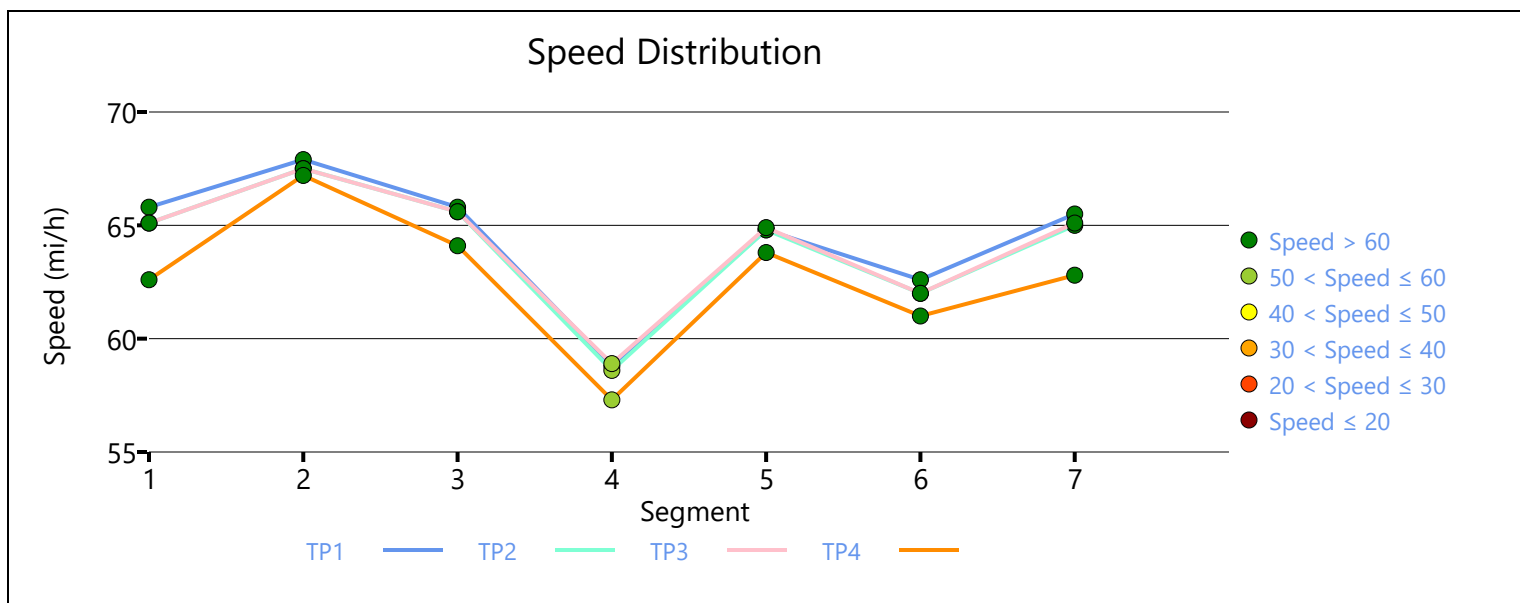
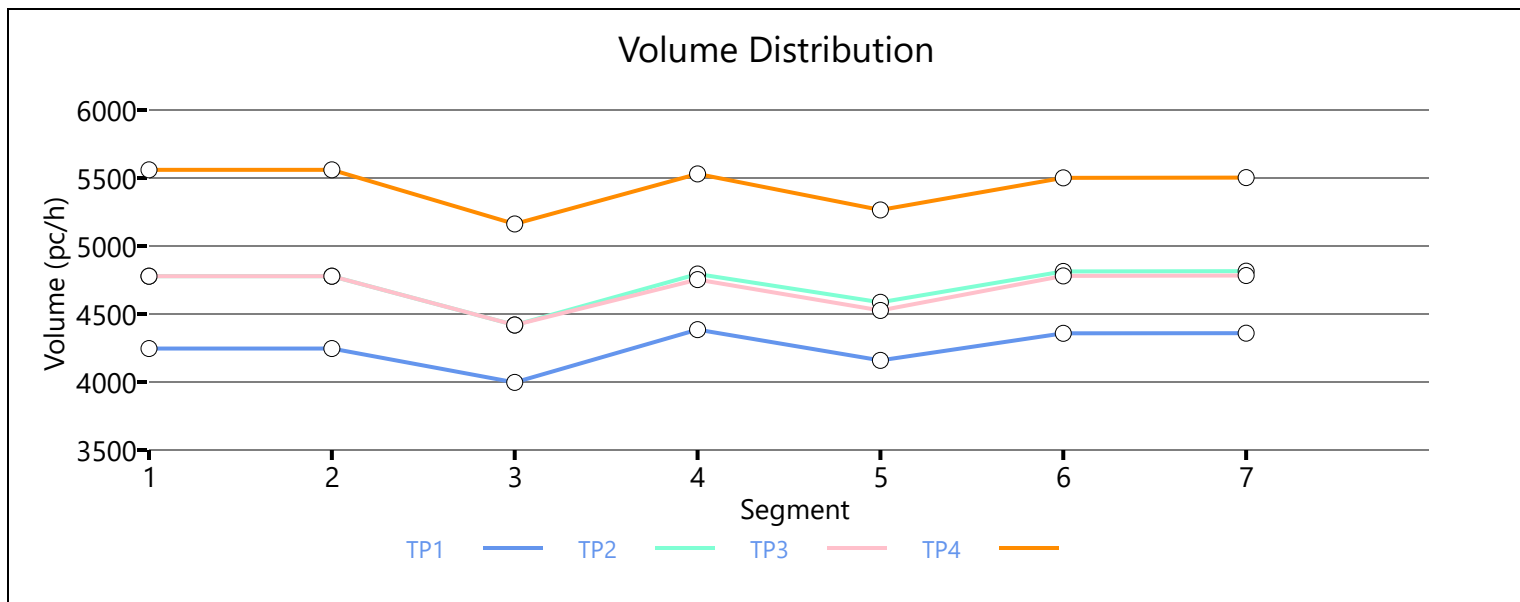
Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	1.00	0.971	4246	7074	0.60	65.8	21.5	C
2	1.00	0.971	4778	7074	0.68	65.1	24.5	C
3	1.00	0.971	4778	7074	0.68	65.1	24.5	C
4	1.00	0.971	5560	7074	0.79	62.6	29.6	D

Segment 2: Diverge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	1.00	1.00	0.971	0.980	4246	247	7200	2200	0.59	0.11	67.9	64.7	20.8	22.8	C
2	1.00	1.00	0.971	0.980	4778	355	7200	2200	0.66	0.16	67.5	64.4	23.6	25.4	C
3	1.00	1.00	0.971	0.980	4778	355	7200	2200	0.66	0.16	67.5	64.4	23.6	25.4	C
4	1.00	1.00	0.971	0.980	5560	395	7200	2200	0.77	0.18	67.2	64.3	27.6	28.8	D

Segment 3: Basic

Space Mean Speed, mi/h	63.5	Density, veh/mi/ln	23.1
Average Travel Time, min	1.60	Density, pc/mi/ln	23.8
Messages			
Comments			



HCS7 Freeway Facilities Report

Project Information Construction Period Scenario

Analyst	Kimley-Horn	Date	9/2/2025
Agency		Analysis Year	2034
Jurisdiction		Time Period Analyzed	Build PM Peak Hour
Project Description	Mountain Road Technology Park	Unit	United States Customary

Facility Global Input

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45.0
Queue Discharge Capacity Drop, %	7	Total Segments	7
Total Time Periods	4	Time Period Duration, min	15
Facility Length, mi	1.70		

Facility Segment Data

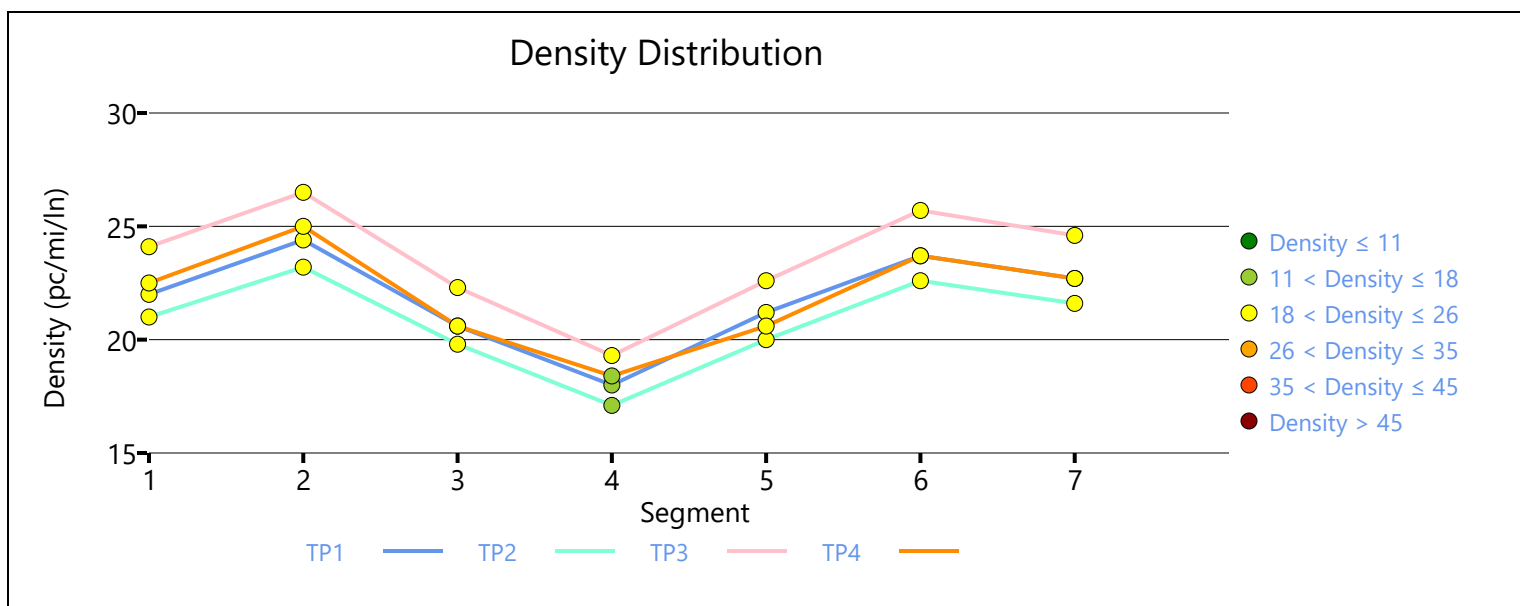
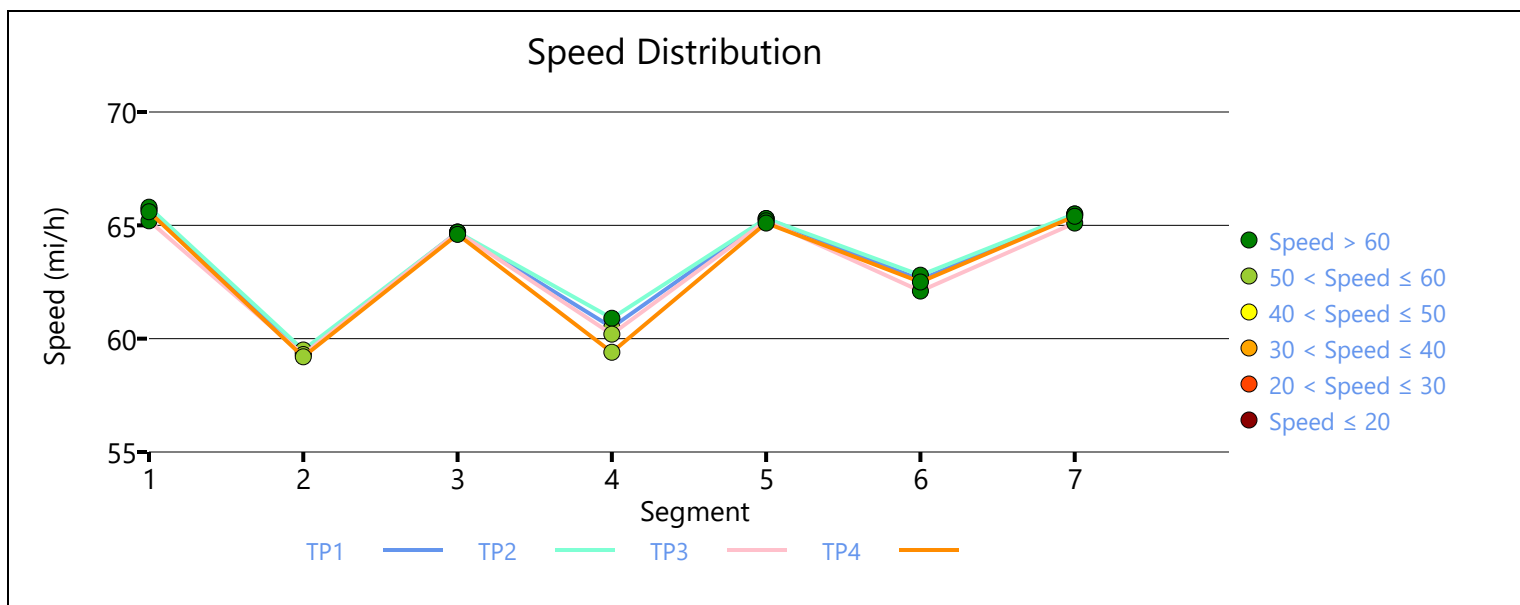
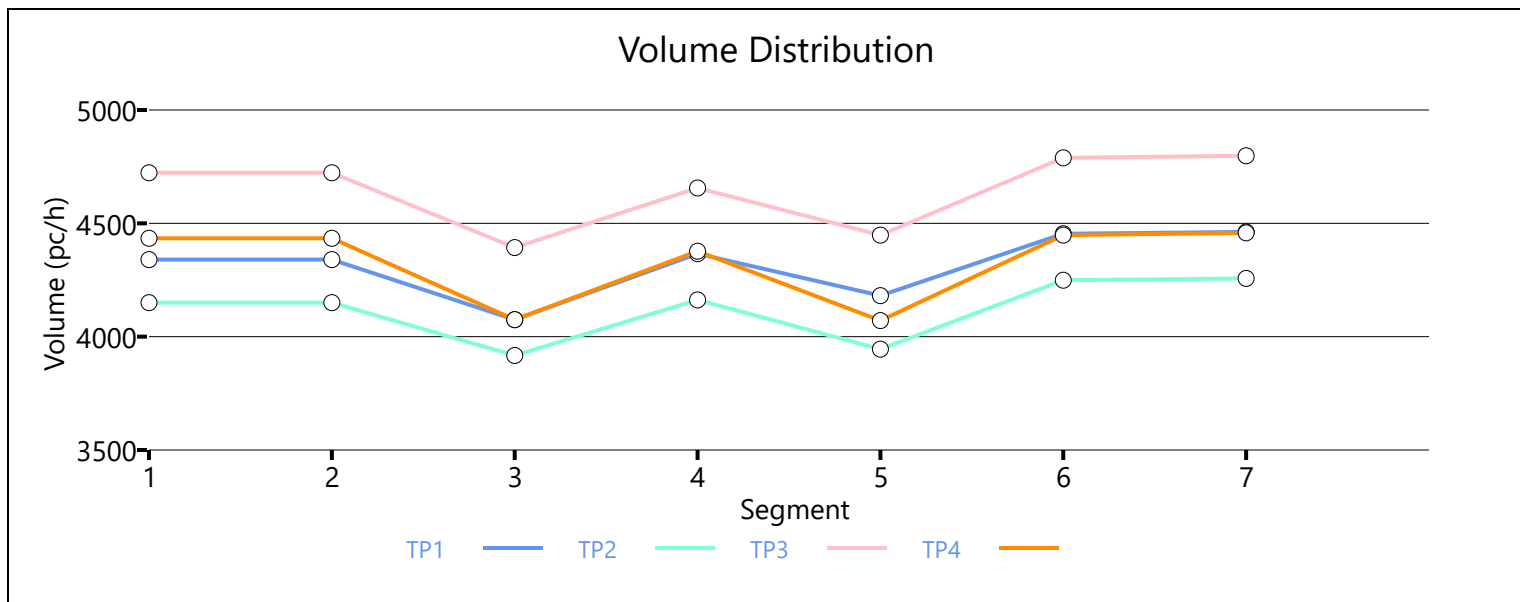
No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic	I-295 WB	1250	3
2	Diverge	Diverge	I-295 WB Off-Ramp to NB Staples Mill Rd (US 33)	1500	3
3	Basic	Basic	I-295 WB	650	3
4	Weaving	Weaving	Staples Mill Rd NB On-Ramp to WB I-295_Weaving_I-295 WB Off-Ramp to SB Staples Mill Rd	1600	4
5	Basic	Basic	I-295 WB	1200	3
6	Merge	Merge	Staples Mill Rd (US 33) SB On-Ramp to WB I-295	1500	3
7	Basic	Basic	I-295 WB	1250	3

Facility Segment Data

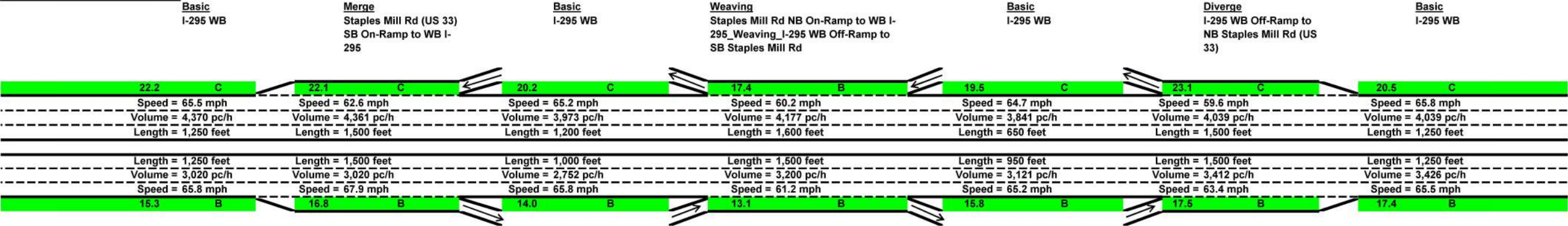
Segment 1: Basic															
Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
1	1.00		0.955		4340		7074		0.61		65.7		22.0		C
2	1.00		0.955		4150		7074		0.59		65.8		21.0		C
3	1.00		0.955		4723		7074		0.67		65.2		24.1		C
4	1.00		0.955		4434		7074		0.63		65.6		22.5		C
Segment 2: Diverge															
Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	1.00	1.00	0.955	0.980	4340	258	7200	1900	0.60	0.14	59.4	53.7	24.4	24.6	C
2	1.00	1.00	0.955	0.980	4150	227	7200	1900	0.58	0.12	59.5	53.8	23.2	23.7	C
3	1.00	1.00	0.955	0.980	4723	321	7200	1900	0.66	0.17	59.3	53.6	26.5	26.4	C
4	1.00	1.00	0.955	0.980	4434	349	7200	1900	0.62	0.18	59.2	53.5	25.0	25.2	C

Segment 3: Basic															
Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
1	1.00		0.955		4075		7074		0.58		64.7		20.6		C
2	1.00		0.955		3917		7074		0.55		64.7		19.8		C
3	1.00		0.955		4393		7074		0.62		64.7		22.3		C
4	1.00		0.955		4075		7074		0.58		64.6		20.6		C
Segment 4: Weaving															
Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
1	1.00		0.955		4366		8636		0.51		60.5		18.0		B
2	1.00		0.955		4162		8632		0.48		60.9		17.1		B
3	1.00		0.955		4656		8660		0.54		60.2		19.3		B
4	1.00		0.955		4377		8544		0.51		59.4		18.4		B
Segment 5: Basic															
Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
1	1.00		0.955		4181		7074		0.59		65.3		21.2		C
2	1.00		0.955		3945		7074		0.56		65.3		20.0		C
3	1.00		0.955		4448		7074		0.63		65.2		22.6		C
4	1.00		0.955		4071		7074		0.58		65.1		20.6		C
Segment 6: Merge															
Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	1.00	1.00	0.955	0.980	4454	273	7200	2000	0.62	0.14	62.6	60.8	23.7	22.2	C
2	1.00	1.00	0.955	0.980	4249	304	7200	2000	0.59	0.15	62.8	61.0	22.6	21.3	C
3	1.00	1.00	0.955	0.980	4789	341	7200	2000	0.67	0.17	62.1	60.3	25.7	23.9	C
4	1.00	1.00	0.955	0.980	4448	377	7200	2000	0.62	0.19	62.5	60.7	23.7	22.4	C
Segment 7: Basic															
Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
1	1.00		0.955		4462		7074		0.63		65.5		22.7		C
2	1.00		0.955		4257		7074		0.60		65.5		21.6		C
3	1.00		0.955		4798		7074		0.68		65.1		24.6		C
4	1.00		0.955		4458		7074		0.63		65.4		22.7		C
Facility Time Period Results															
T	Speed, mi/h				Density, pc/mi/ln		Density, veh/mi/ln		Travel Time, min				LOS		
1	62.9				21.6		20.7		1.60				C		
2	63.1				20.6		19.7		1.60				C		
3	62.6				23.4		22.3		1.60				C		
4	62.6				21.8		20.9		1.60				C		

Facility Overall Results			
Space Mean Speed, mi/h	62.8	Density, veh/mi/ln	20.9
Average Travel Time, min	1.60	Density, pc/mi/ln	21.9
Messages			
Comments			



2025 Existing
AM Peak Hour



Merge & Diverge Segments

LEGEND		
LOS	DENSITY (pc/ln/mi)	COLOR
A	0-10	
B	10-20	
C	20-28	
D	28-35	
E	35 +	
F	Dem. > Cap.	

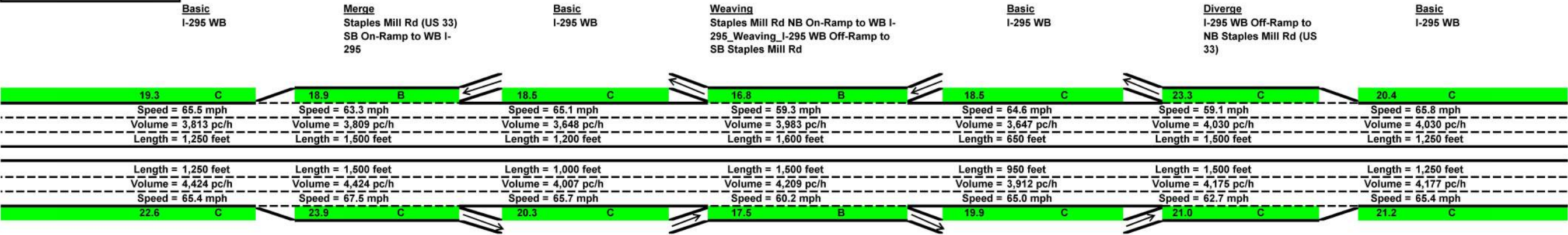
Weave Segments

LEGEND		
LOS	DENSITY (pc/ln/mi)	COLOR
A	0-10	
B	10-20	
C	20-28	
D	28-35	
E	35-43	
F	43+	

Basic Segments

LEGEND		
LOS	DENSITY (pc/ln/mi)	COLOR
A	0-11	
B	11-18	
C	18-26	
D	26-35	
E	35-45	
F	45+	

2025 Existing
PM Peak Hour



* Values are for demonstrative purposes and may not reflect actual or anticipated conditions/results

Project Information				
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Analyst	Kimley-Horn	Date	9/2/2025
Agency		Analysis Year	2025
Jurisdiction		Time Period Analyzed	Existing AM Peak Hour
Project Description	Mountain Road Technology Park	Unit	United States Customary

Facility Global Input	
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Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45.0
Queue Discharge Capacity Drop, %	7	Total Segments	7
Total Time Periods	4	Time Period Duration, min	15
Facility Length, mi	1.70		

Facility Segment Data									
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No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic	I-295 EB	1250	3
2	Diverge	Diverge	I-295 EB Off-Ramp to SB Staples Mill Rd (US 33)	1500	3
3	Basic	Basic	I-295 EB	1000	3
4	Weaving	Weaving	Staples Mill SB On-Ramp to EB I-295_Weaving_I-295 EB Off-Ramp to NB Staples Mill	1500	4
5	Basic	Basic	I-295 EB	950	3
6	Merge	Merge	Staples Mill NB On-Ramp to EB I-295	1500	3
7	Basic	Basic	I-295 EB	1250	3

Facility Segment Data									
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Segment 1: Basic	
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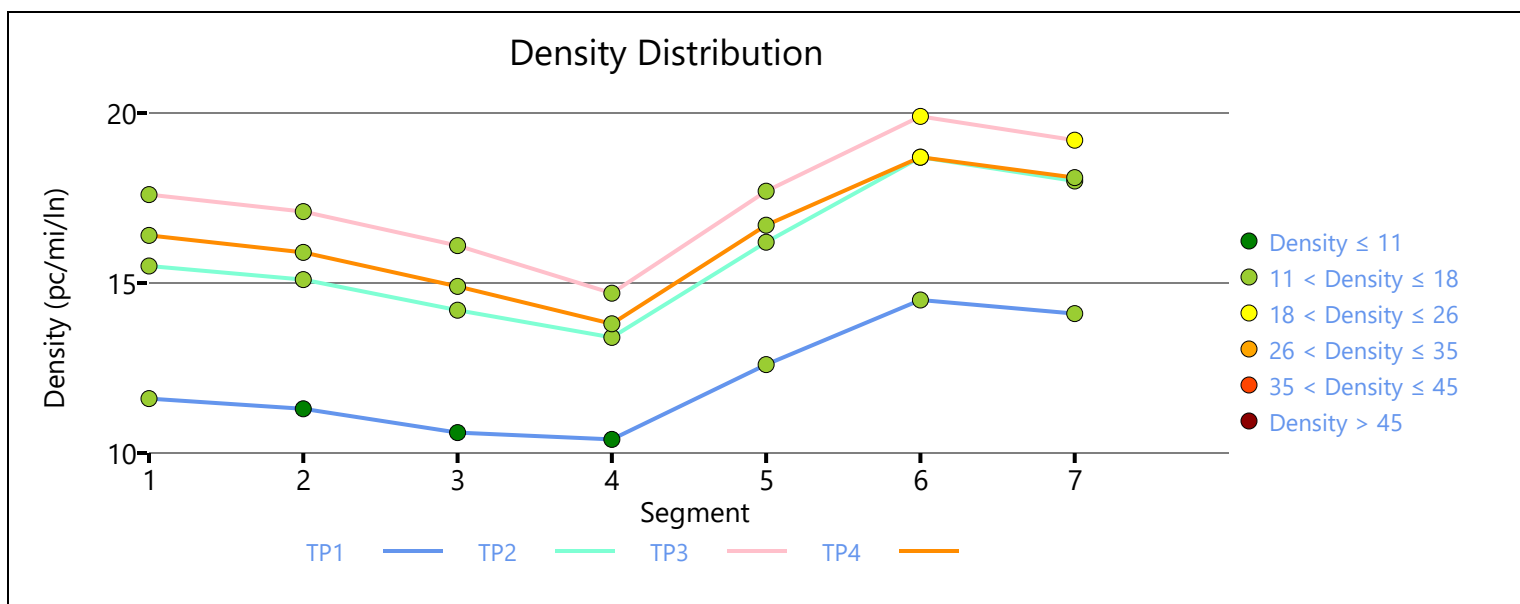
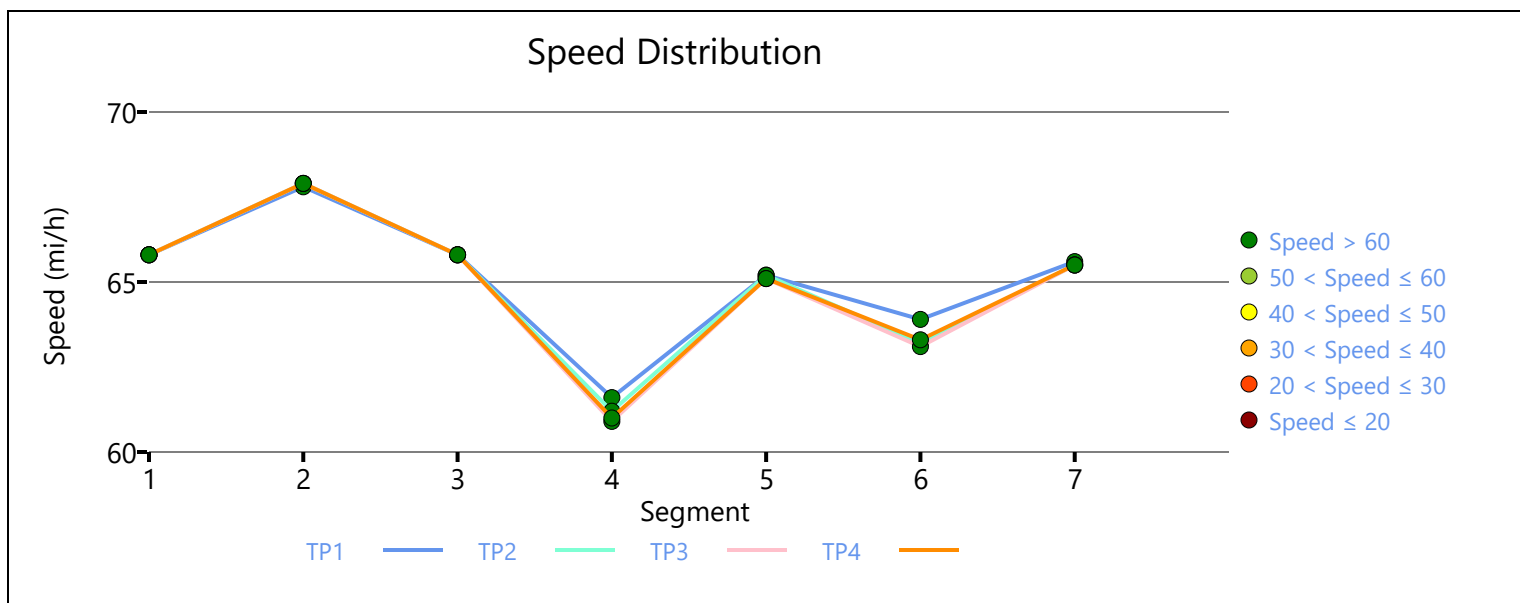
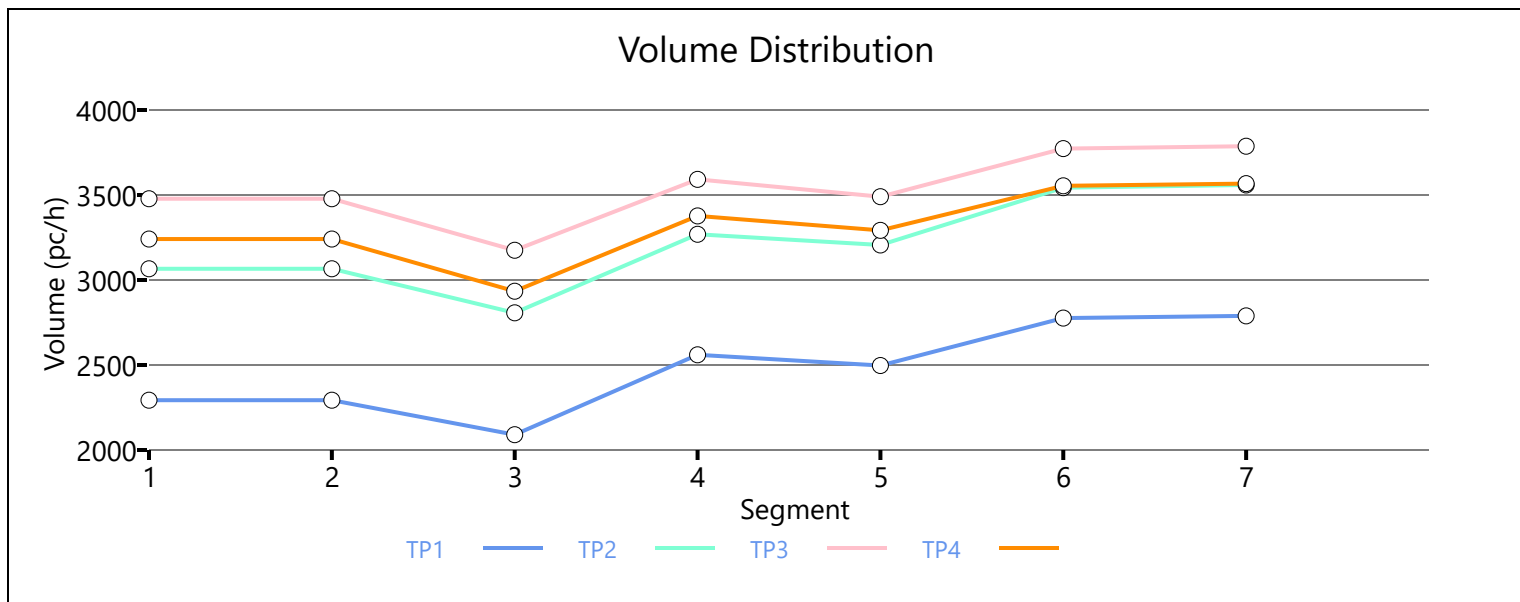
Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	1.00	0.934	2293	7074	0.32	65.8	11.6	B
2	1.00	0.934	3066	7074	0.43	65.8	15.5	B
3	1.00	0.934	3478	7074	0.49	65.8	17.6	B
4	1.00	0.934	3241	7074	0.46	65.8	16.4	B

Segment 2: Diverge									
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Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	1.00	1.00	0.934	0.980	2293	194	7200	2200	0.32	0.09	67.8	64.8	11.3	12.8	B
2	1.00	1.00	0.934	0.980	3066	247	7200	2200	0.43	0.11	67.9	64.7	15.1	17.0	B
3	1.00	1.00	0.934	0.980	3478	289	7200	2200	0.48	0.13	67.9	64.6	17.1	19.2	B
4	1.00	1.00	0.934	0.980	3241	293	7200	2200	0.45	0.13	67.9	64.6	15.9	18.0	B

Segment 3: Basic

Space Mean Speed, mi/h	64.7	Density, veh/mi/ln	14.3
Average Travel Time, min	1.60	Density, pc/mi/ln	15.4
Messages			
Comments			



HCS7 Freeway Facilities Report

Project Information

Analyst	Kimley-Horn	Date	9/2/2025
Agency		Analysis Year	2025
Jurisdiction		Time Period Analyzed	Existing AM Peak Hour
Project Description	Mountain Road Technology Park	Unit	United States Customary

Facility Global Input

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45.0
Queue Discharge Capacity Drop, %	7	Total Segments	7
Total Time Periods	4	Time Period Duration, min	15
Facility Length, mi	1.70		

Facility Segment Data

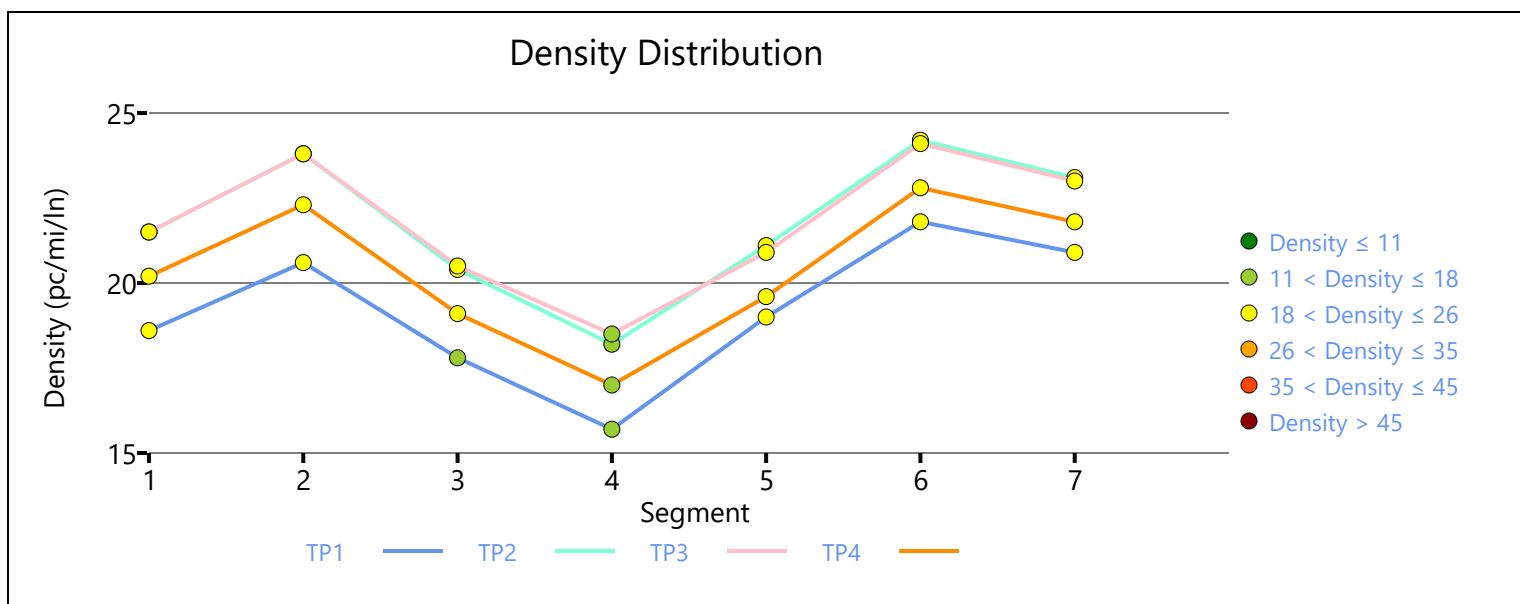
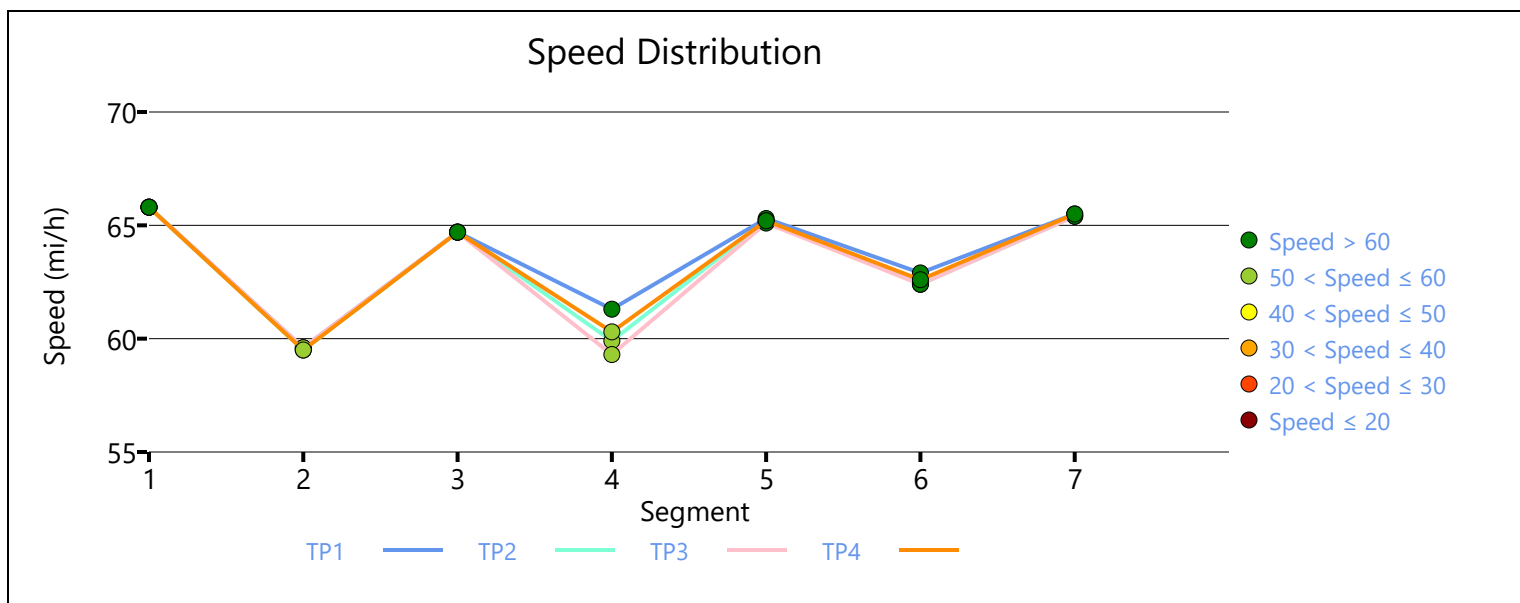
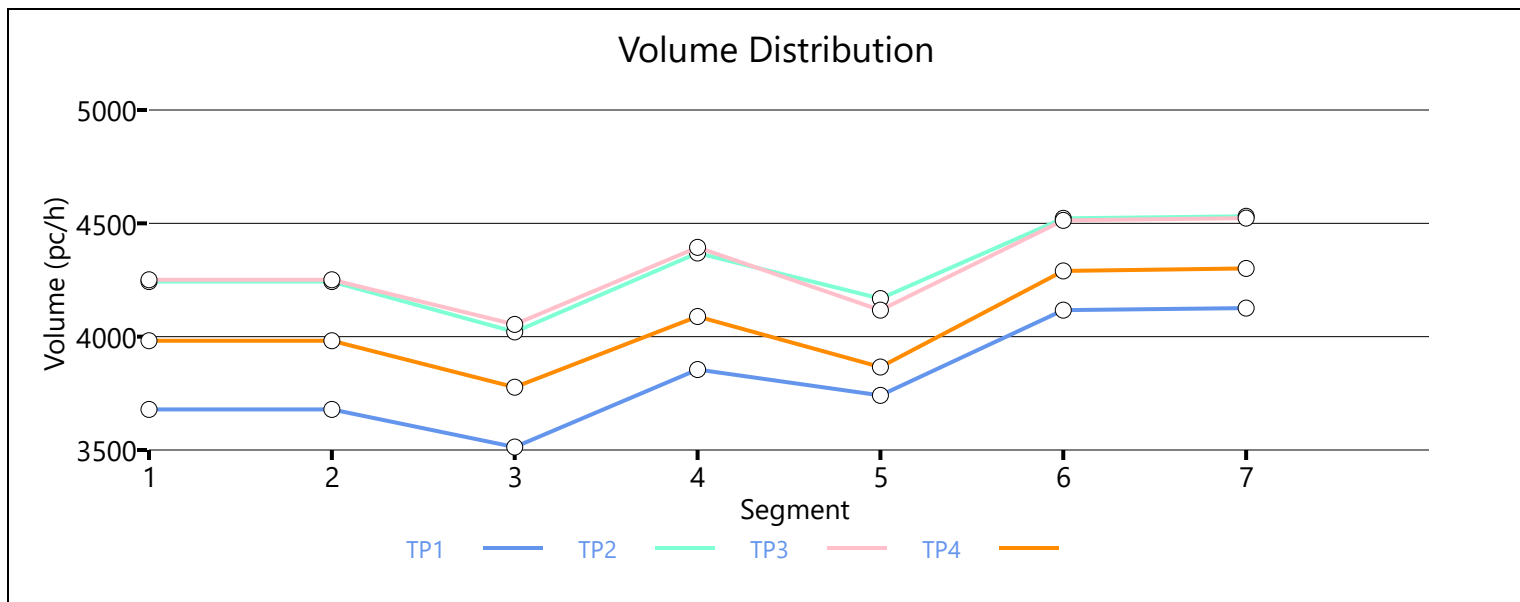
No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic	I-295 WB	1250	3
2	Diverge	Diverge	I-295 WB Off-Ramp to NB Staples Mill Rd (US 33)	1500	3
3	Basic	Basic	I-295 WB	650	3
4	Weaving	Weaving	Staples Mill Rd NB On-Ramp to WB I-295_Weaving_I-295 WB Off-Ramp to SB Staples Mill Rd	1600	4
5	Basic	Basic	I-295 WB	1200	3
6	Merge	Merge	Staples Mill Rd (US 33) SB On-Ramp to WB I-295	1500	3
7	Basic	Basic	I-295 WB	1250	3

Facility Segment Data

Segment 1: Basic															
Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
1	1.00		0.956		3679		7074		0.52		65.8		18.6		C
2	1.00		0.956		4243		7074		0.60		65.8		21.5		C
3	1.00		0.956		4251		7074		0.60		65.8		21.5		C
4	1.00		0.956		3982		7074		0.56		65.8		20.2		C
Segment 2: Diverge															
Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	1.00	1.00	0.956	0.980	3679	162	7200	1900	0.51	0.09	59.6	54.0	20.6	21.3	C
2	1.00	1.00	0.956	0.980	4243	216	7200	1900	0.59	0.11	59.5	53.8	23.8	24.1	C
3	1.00	1.00	0.956	0.980	4251	192	7200	1900	0.59	0.10	59.6	53.9	23.8	24.1	C
4	1.00	1.00	0.956	0.980	3982	200	7200	1900	0.55	0.11	59.5	53.9	22.3	22.8	C

Segment 3: Basic															
Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
1	1.00		0.956		3513		7074		0.50		64.7		17.8		B
2	1.00		0.956		4021		7074		0.57		64.7		20.4		C
3	1.00		0.956		4054		7074		0.57		64.7		20.5		C
4	1.00		0.956		3777		7074		0.53		64.7		19.1		C
Segment 4: Weaving															
Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
1	1.00		0.956		3855		8608		0.45		61.3		15.7		B
2	1.00		0.956		4369		8588		0.51		59.9		18.2		B
3	1.00		0.956		4394		8540		0.51		59.3		18.5		B
4	1.00		0.956		4089		8572		0.48		60.3		17.0		B
Segment 5: Basic															
Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
1	1.00		0.956		3741		7074		0.53		65.3		19.0		C
2	1.00		0.956		4168		7074		0.59		65.2		21.1		C
3	1.00		0.956		4117		7074		0.58		65.1		20.9		C
4	1.00		0.956		3866		7074		0.55		65.2		19.6		C
Segment 6: Merge															
Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	1.00	1.00	0.956	0.980	4117	376	7200	2000	0.57	0.19	62.9	61.0	21.8	20.9	C
2	1.00	1.00	0.956	0.980	4522	354	7200	2000	0.63	0.18	62.4	60.6	24.2	22.7	C
3	1.00	1.00	0.956	0.980	4513	396	7200	2000	0.63	0.20	62.4	60.6	24.1	22.8	C
4	1.00	1.00	0.956	0.980	4290	424	7200	2000	0.60	0.21	62.6	60.8	22.8	21.8	C
Segment 7: Basic															
Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
1	1.00		0.956		4126		7074		0.58		65.5		20.9		C
2	1.00		0.956		4531		7074		0.64		65.4		23.1		C
3	1.00		0.956		4523		7074		0.64		65.4		23.0		C
4	1.00		0.956		4301		7074		0.61		65.5		21.8		C
Facility Time Period Results															
T	Speed, mi/h			Density, pc/mi/ln			Density, veh/mi/ln			Travel Time, min			LOS		
1	63.2			19.1			18.2			1.60			C		
2	62.8			21.6			20.7			1.60			C		
3	62.7			21.7			20.7			1.60			C		
4	62.9			20.3			19.4			1.60			C		

Facility Overall Results			
Space Mean Speed, mi/h	62.9	Density, veh/mi/ln	19.8
Average Travel Time, min	1.60	Density, pc/mi/ln	20.7
Messages			
Comments			



HCS7 Freeway Facilities Report

Project Information

Analyst	Kimley-Horn	Date	9/2/2025
Agency		Analysis Year	2025
Jurisdiction		Time Period Analyzed	Existing PM Peak Hour
Project Description	Mountain Road Technology Park	Unit	United States Customary

Facility Global Input

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45.0
Queue Discharge Capacity Drop, %	7	Total Segments	7
Total Time Periods	4	Time Period Duration, min	15
Facility Length, mi	1.70		

Facility Segment Data

No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic	I-295 EB	1250	3
2	Diverge	Diverge	I-295 EB Off-Ramp to SB Staples Mill Rd (US 33)	1500	3
3	Basic	Basic	I-295 EB	1000	3
4	Weaving	Weaving	Staples Mill SB On-Ramp to EB I-295_Weaving_I-295 EB Off-Ramp to NB Staples Mill	1500	4
5	Basic	Basic	I-295 EB	950	3
6	Merge	Merge	Staples Mill NB On-Ramp to EB I-295	1500	3
7	Basic	Basic	I-295 EB	1250	3

Facility Segment Data

Segment 1: Basic

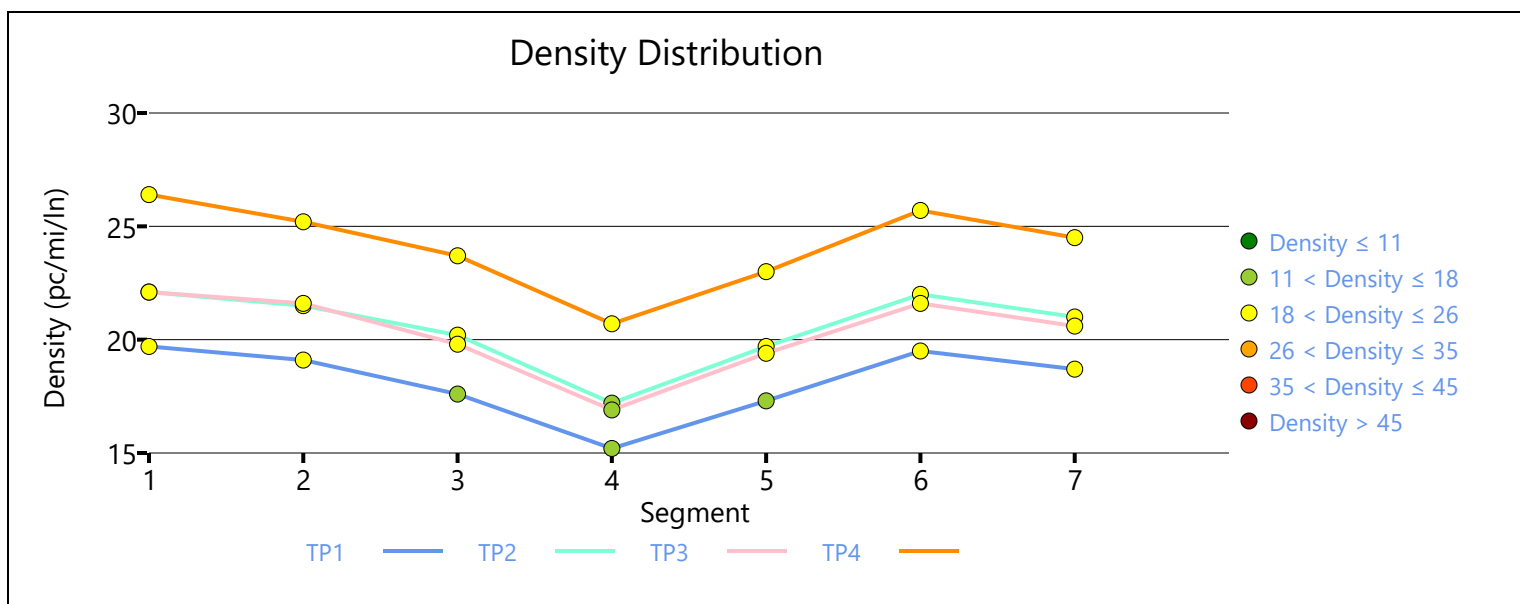
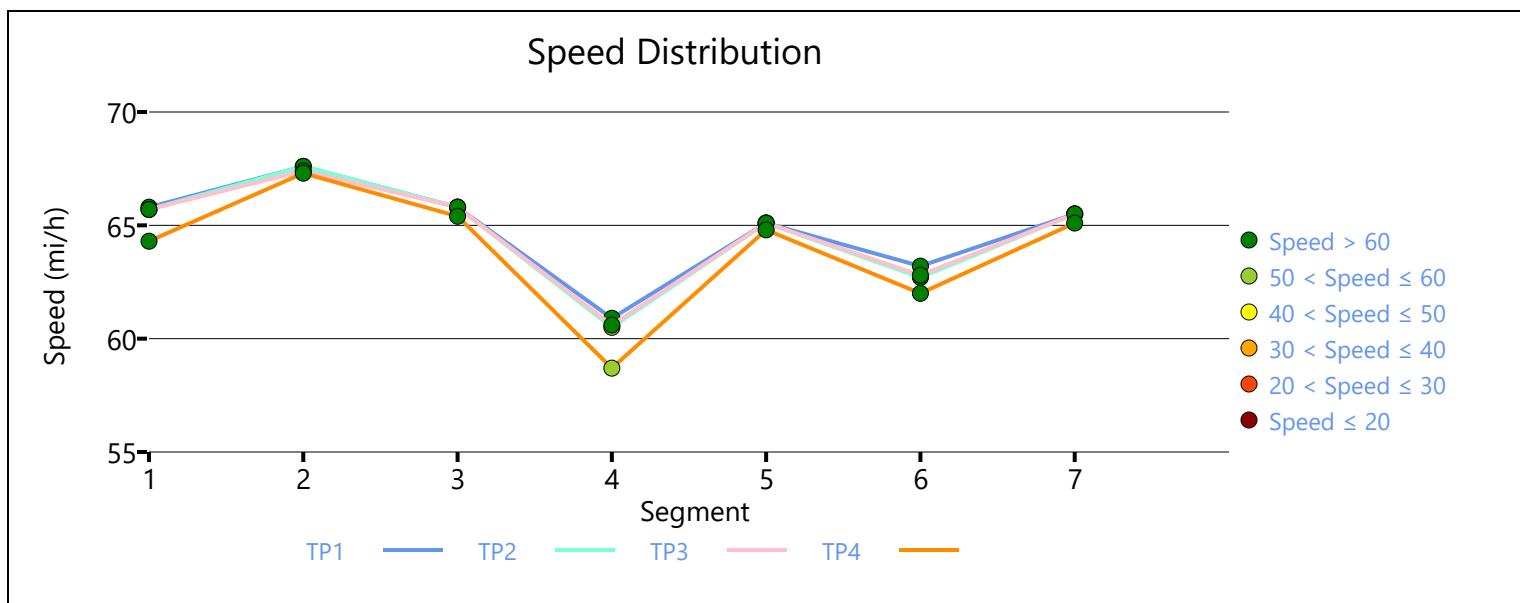
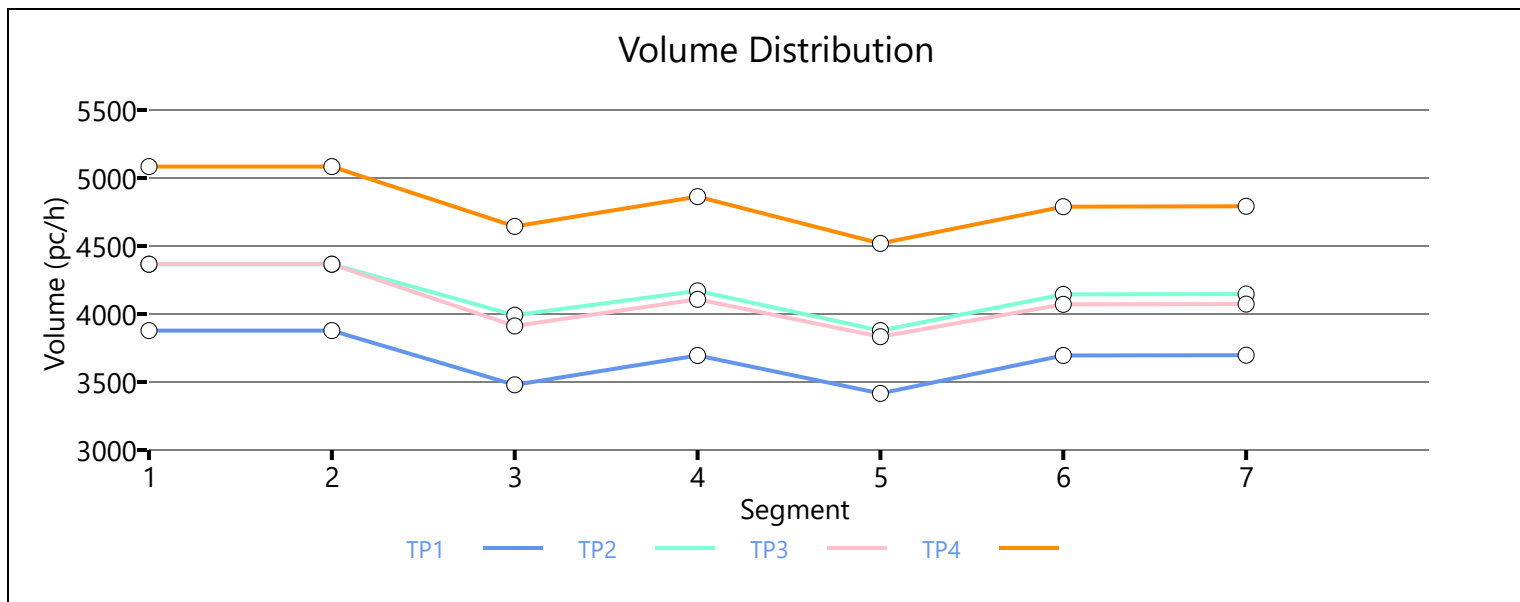
Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	1.00	0.971	3878	7074	0.55	65.8	19.7	C
2	1.00	0.971	4366	7074	0.62	65.7	22.1	C
3	1.00	0.971	4366	7074	0.62	65.7	22.1	C
4	1.00	0.971	5084	7074	0.72	64.3	26.4	D

Segment 2: Diverge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	1.00	1.00	0.971	0.980	3878	396	7200	2200	0.54	0.18	67.6	64.3	19.1	21.3	C
2	1.00	1.00	0.971	0.980	4366	371	7200	2200	0.61	0.17	67.6	64.4	21.5	23.6	C
3	1.00	1.00	0.971	0.980	4366	449	7200	2200	0.61	0.20	67.4	64.2	21.6	23.7	C
4	1.00	1.00	0.971	0.980	5084	437	7200	2200	0.71	0.20	67.3	64.2	25.2	26.8	C

Segment 3: Basic

Space Mean Speed, mi/h	64.3	Density, veh/mi/ln	20.0
Average Travel Time, min	1.60	Density, pc/mi/ln	20.6
Messages			
Comments			



HCS7 Freeway Facilities Report

Project Information

Analyst	Kimley-Horn	Date	9/2/2025
Agency		Analysis Year	2025
Jurisdiction		Time Period Analyzed	Existing PM Peak Hour
Project Description	Mountain Road Technology Park	Unit	United States Customary

Facility Global Input

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45.0
Queue Discharge Capacity Drop, %	7	Total Segments	7
Total Time Periods	4	Time Period Duration, min	15
Facility Length, mi	1.70		

Facility Segment Data

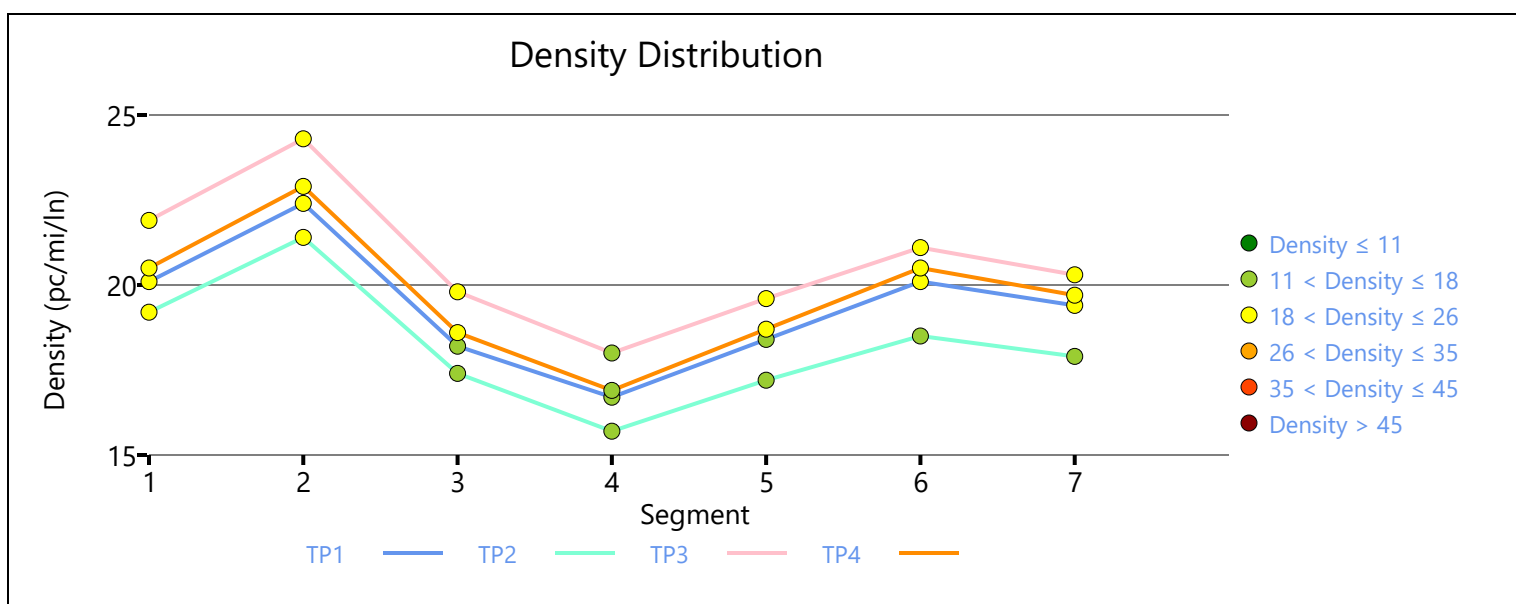
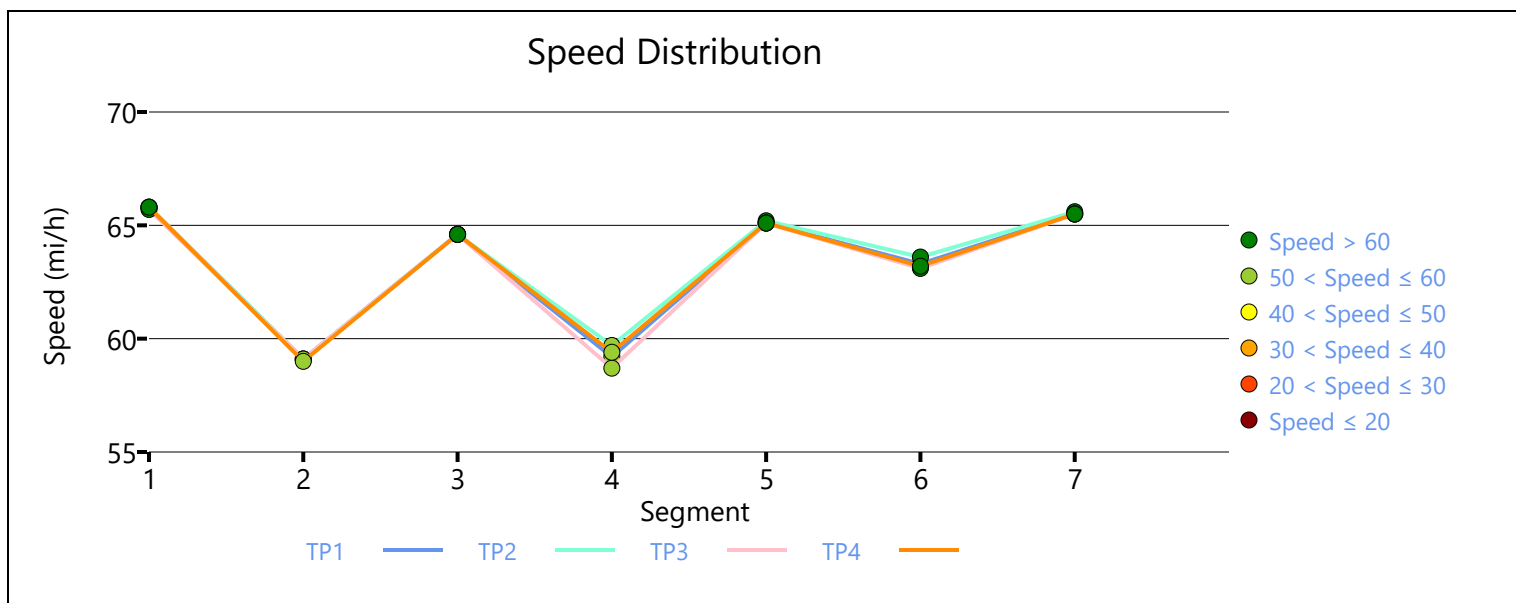
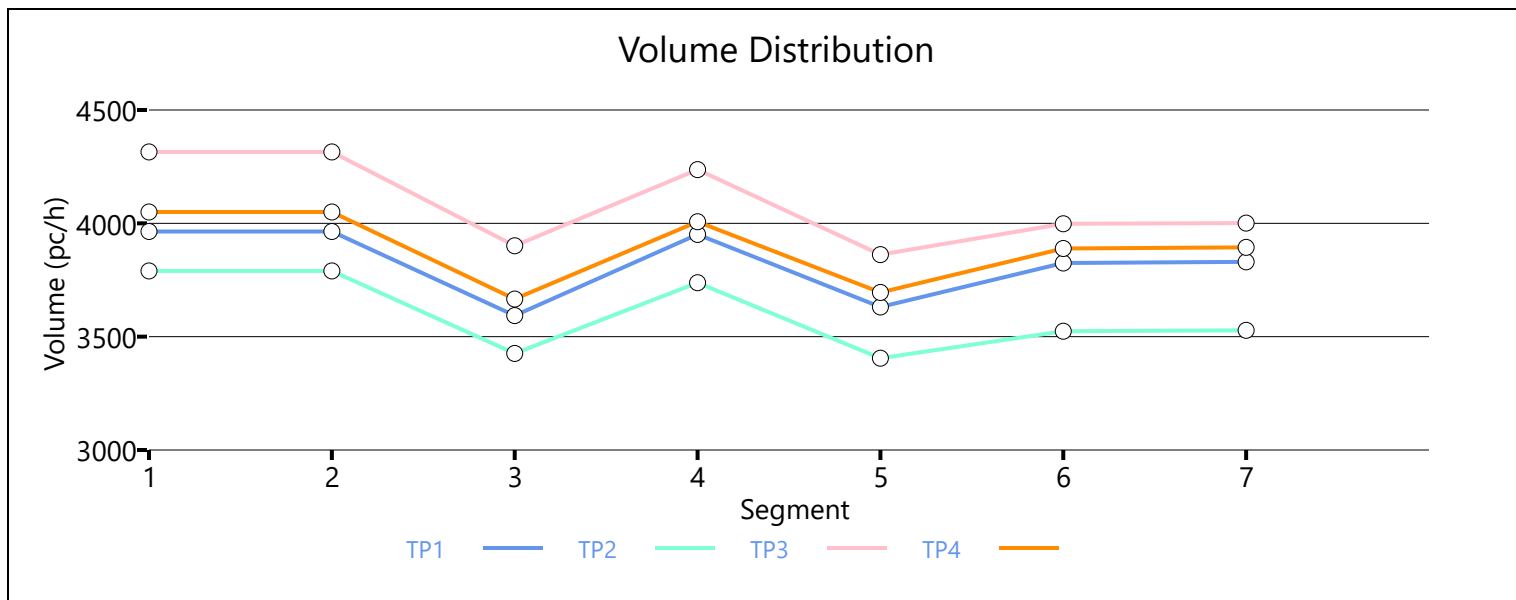
No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic	I-295 WB	1250	3
2	Diverge	Diverge	I-295 WB Off-Ramp to NB Staples Mill Rd (US 33)	1500	3
3	Basic	Basic	I-295 WB	650	3
4	Weaving	Weaving	Staples Mill Rd NB On-Ramp to WB I-295_Weaving_I-295 WB Off-Ramp to SB Staples Mill Rd	1600	4
5	Basic	Basic	I-295 WB	1200	3
6	Merge	Merge	Staples Mill Rd (US 33) SB On-Ramp to WB I-295	1500	3
7	Basic	Basic	I-295 WB	1250	3

Facility Segment Data

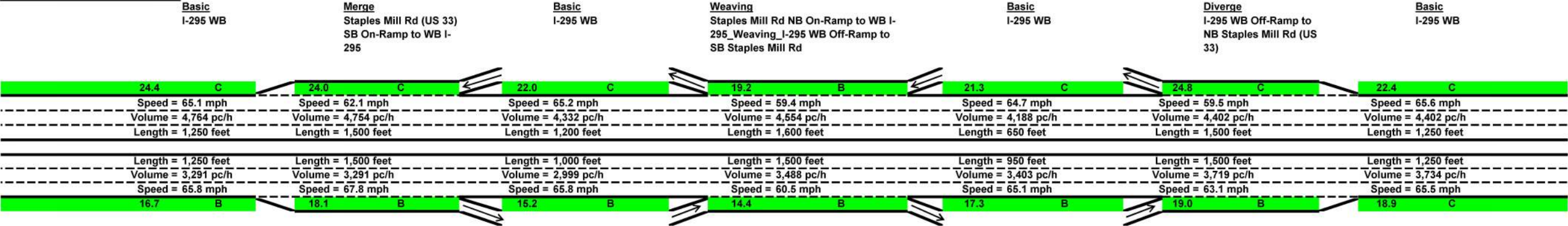
Segment 1: Basic															
Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
1	1.00		0.955		3964		7074		0.56		65.8		20.1		C
2	1.00		0.955		3790		7074		0.54		65.8		19.2		C
3	1.00		0.955		4315		7074		0.61		65.7		21.9		C
4	1.00		0.955		4050		7074		0.57		65.8		20.5		C
Segment 2: Diverge															
Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	1.00	1.00	0.955	0.980	3964	362	7200	1900	0.55	0.19	59.1	53.5	22.4	23.0	C
2	1.00	1.00	0.955	0.980	3790	354	7200	1900	0.53	0.19	59.1	53.5	21.4	22.2	C
3	1.00	1.00	0.955	0.980	4315	404	7200	1900	0.60	0.21	59.1	53.4	24.3	24.7	C
4	1.00	1.00	0.955	0.980	4050	374	7200	1900	0.56	0.20	59.0	53.4	22.9	23.4	C

Segment 3: Basic															
Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
1	1.00		0.955		3593		7074		0.51		64.6		18.2		C
2	1.00		0.955		3426		7074		0.48		64.6		17.4		B
3	1.00		0.955		3901		7074		0.55		64.6		19.8		C
4	1.00		0.955		3666		7074		0.52		64.6		18.6		C
Segment 4: Weaving															
Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
1	1.00		0.955		3951		8444		0.47		59.2		16.7		B
2	1.00		0.955		3738		8440		0.44		59.7		15.7		B
3	1.00		0.955		4237		8456		0.50		58.7		18.0		B
4	1.00		0.955		4007		8472		0.47		59.4		16.9		B
Segment 5: Basic															
Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
1	1.00		0.955		3631		7074		0.51		65.1		18.4		C
2	1.00		0.955		3405		7074		0.48		65.2		17.2		B
3	1.00		0.955		3862		7074		0.55		65.1		19.6		C
4	1.00		0.955		3695		7074		0.52		65.1		18.7		C
Segment 6: Merge															
Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	1.00	1.00	0.955	0.980	3825	194	7200	2000	0.53	0.10	63.3	61.4	20.1	19.0	B
2	1.00	1.00	0.955	0.980	3524	119	7200	2000	0.49	0.06	63.6	61.6	18.5	17.4	B
3	1.00	1.00	0.955	0.980	3998	136	7200	2000	0.56	0.07	63.1	61.3	21.1	19.7	B
4	1.00	1.00	0.955	0.980	3889	194	7200	2000	0.54	0.10	63.2	61.3	20.5	19.3	B
Segment 7: Basic															
Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
1	1.00		0.955		3830		7074		0.54		65.5		19.4		C
2	1.00		0.955		3528		7074		0.50		65.6		17.9		B
3	1.00		0.955		4001		7074		0.57		65.5		20.3		C
4	1.00		0.955		3894		7074		0.55		65.5		19.7		C
Facility Time Period Results															
T	Speed, mi/h			Density, pc/mi/ln			Density, veh/mi/ln			Travel Time, min			LOS		
1	62.7			19.3			18.4			1.60			C		
2	62.8			18.1			17.3			1.60			C		
3	62.5			20.6			19.7			1.60			C		
4	62.7			19.6			18.7			1.60			C		

Facility Overall Results			
Space Mean Speed, mi/h	62.7	Density, veh/mi/ln	18.5
Average Travel Time, min	1.60	Density, pc/mi/ln	19.4
Messages			
Comments			



2034 No-Build
AM Peak Hour



Merge & Diverge Segments

LEGEND		
LOS	DENSITY (pc/ln/mi)	COLOR
A	0-10	
B	10-20	
C	20-28	
D	28-35	
E	35 +	
F	Dem. > Cap.	

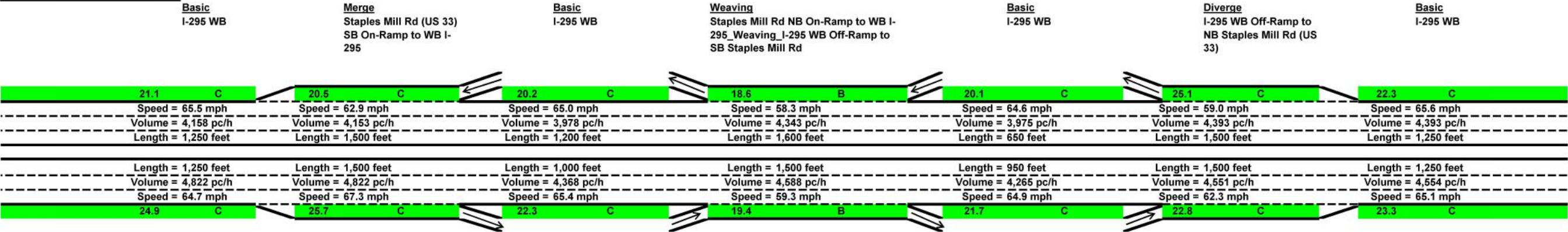
Weave Segments

LEGEND		
LOS	DENSITY (pc/ln/mi)	COLOR
A	0-10	
B	10-20	
C	20-28	
D	28-35	
E	35-43	
F	43+	

Basic Segments

LEGEND		
LOS	DENSITY (pc/ln/mi)	COLOR
A	0-11	
B	11-18	
C	18-26	
D	26-35	
E	35-45	
F	45+	

2034 No-Build
PM Peak Hour



* Values are for demonstrative purposes and may not reflect actual or anticipated conditions/results

Project Information				
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Analyst	Kimley-Horn	Date	9/2/2025
Agency		Analysis Year	2034
Jurisdiction		Time Period Analyzed	No-Build AM Peak Hour
Project Description	Mountain Road Technology Park	Unit	United States Customary

Facility Global Input	
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Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45.0
Queue Discharge Capacity Drop, %	7	Total Segments	7
Total Time Periods	4	Time Period Duration, min	15
Facility Length, mi	1.70		

Facility Segment Data									
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No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic	I-295 EB	1250	3
2	Diverge	Diverge	I-295 EB Off-Ramp to SB Staples Mill Rd (US 33)	1500	3
3	Basic	Basic	I-295 EB	1000	3
4	Weaving	Weaving	Staples Mill SB On-Ramp to EB I-295_Weaving_I-295 EB Off-Ramp to NB Staples Mill	1500	4
5	Basic	Basic	I-295 EB	950	3
6	Merge	Merge	Staples Mill NB On-Ramp to EB I-295	1500	3
7	Basic	Basic	I-295 EB	1250	3

Facility Segment Data									
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Segment 1: Basic	
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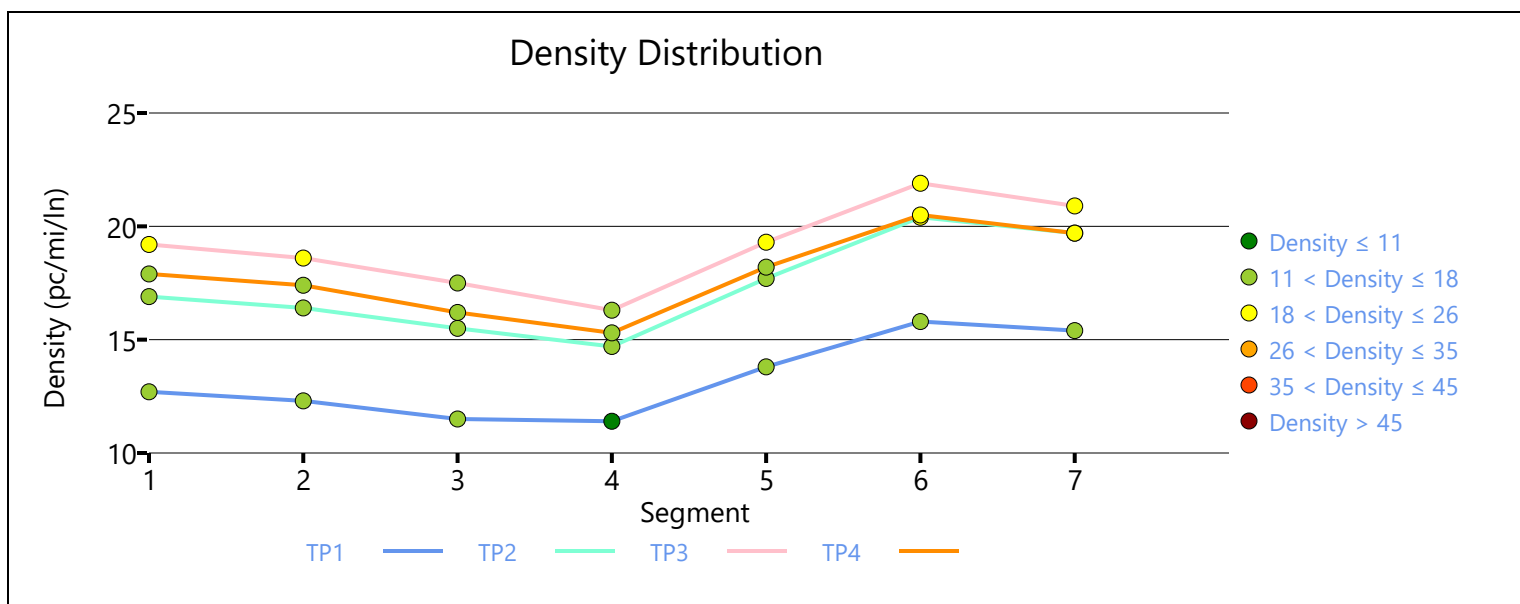
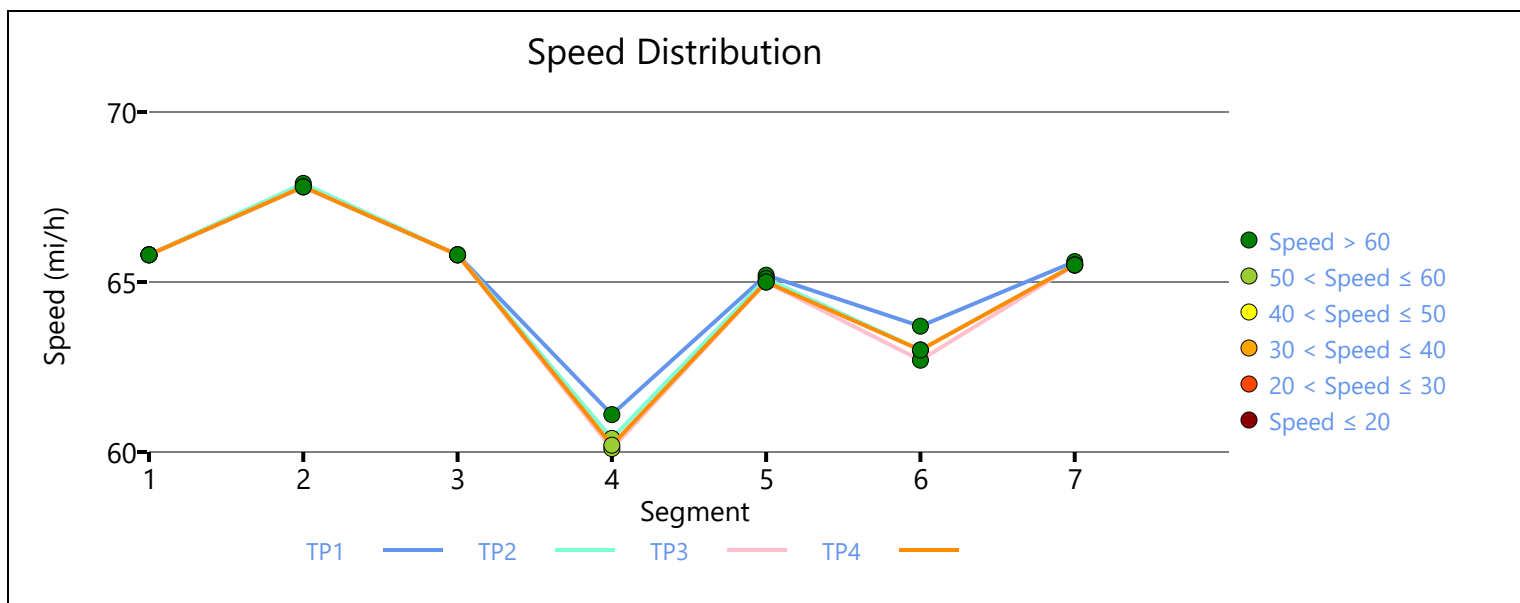
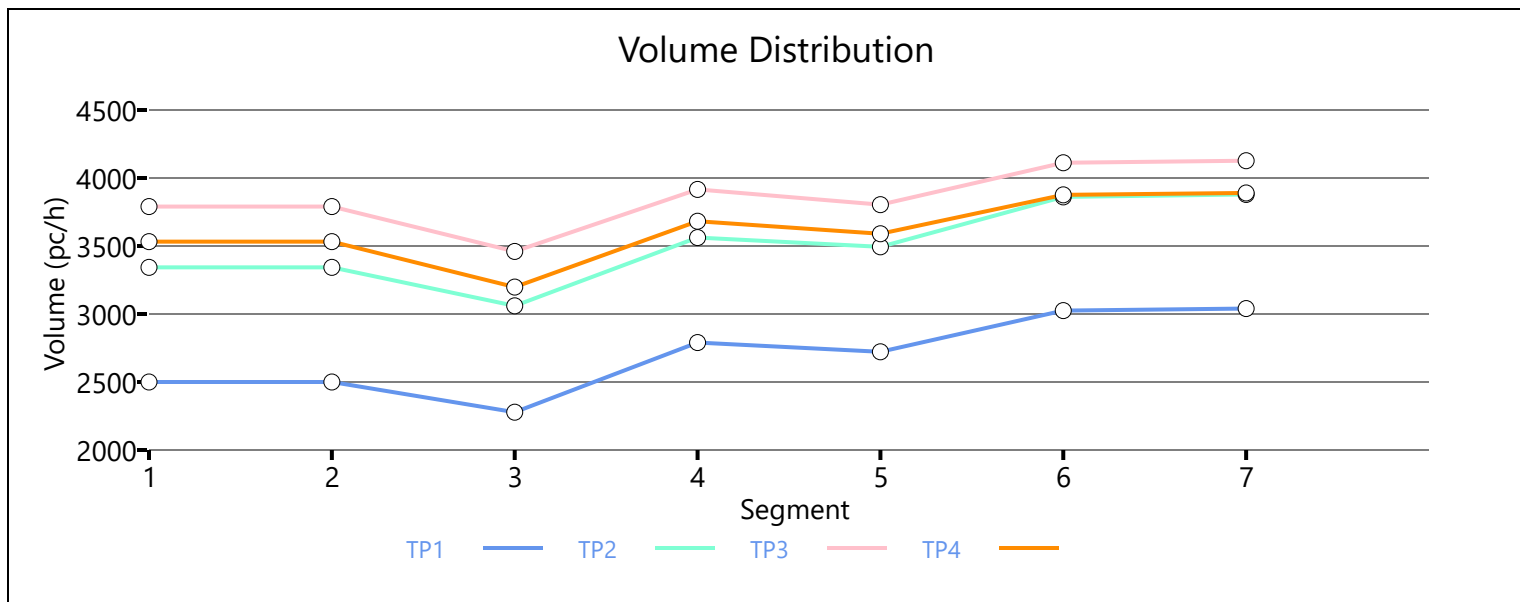
Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	1.00	0.934	2500	7074	0.35	65.8	12.7	B
2	1.00	0.934	3343	7074	0.47	65.8	16.9	B
3	1.00	0.934	3790	7074	0.54	65.8	19.2	C
4	1.00	0.934	3532	7074	0.50	65.8	17.9	B

Segment 2: Diverge									
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Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	1.00	1.00	0.934	0.980	2500	211	7200	2200	0.35	0.10	67.8	64.8	12.3	13.9	B
2	1.00	1.00	0.934	0.980	3343	269	7200	2200	0.46	0.12	67.9	64.6	16.4	18.4	B
3	1.00	1.00	0.934	0.980	3790	314	7200	2200	0.53	0.14	67.8	64.5	18.6	20.7	C
4	1.00	1.00	0.934	0.980	3532	318	7200	2200	0.49	0.14	67.8	64.5	17.4	19.5	B

Segment 3: Basic

Space Mean Speed, mi/h	64.5	Density, veh/mi/ln	15.7
Average Travel Time, min	1.60	Density, pc/mi/ln	16.8
Messages			
Comments			



HCS7 Freeway Facilities Report

Project Information

Analyst	Kimley-Horn	Date	9/2/2025
Agency		Analysis Year	2034
Jurisdiction		Time Period Analyzed	No-Build AM Peak Hour
Project Description	Mountain Road Technology Park	Unit	United States Customary

Facility Global Input

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45.0
Queue Discharge Capacity Drop, %	7	Total Segments	7
Total Time Periods	4	Time Period Duration, min	15
Facility Length, mi	1.70		

Facility Segment Data

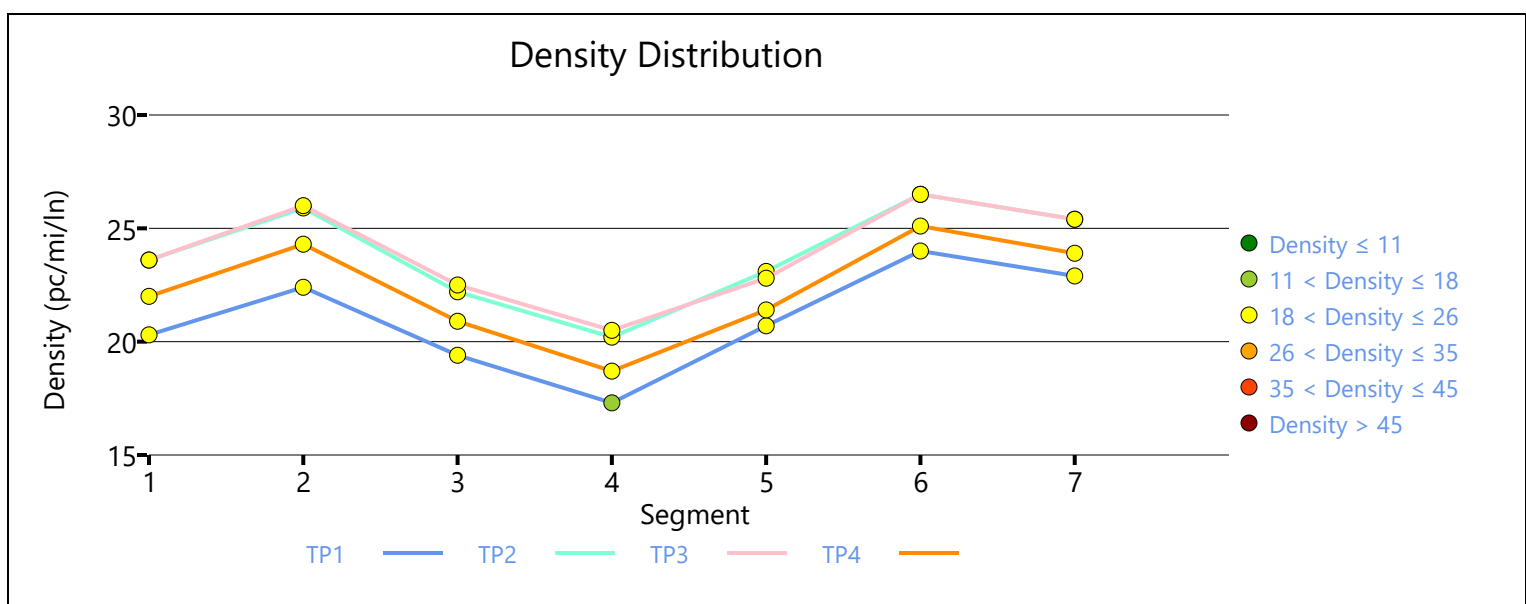
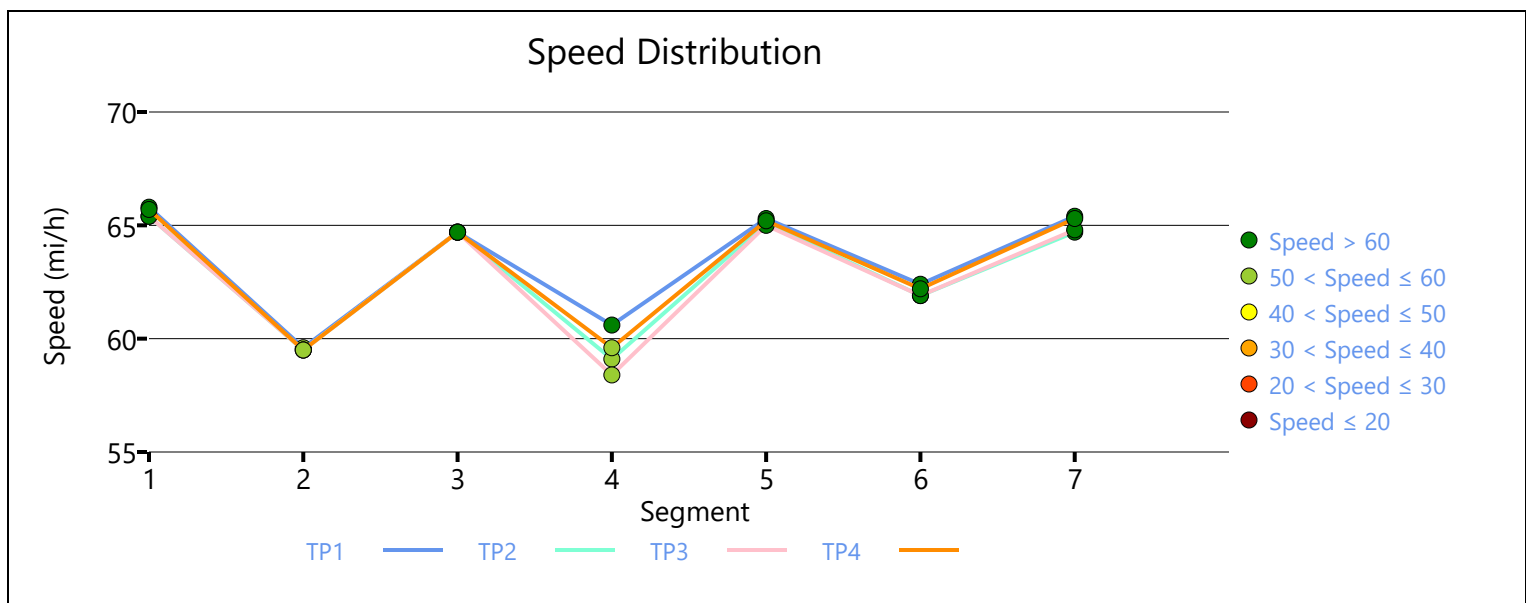
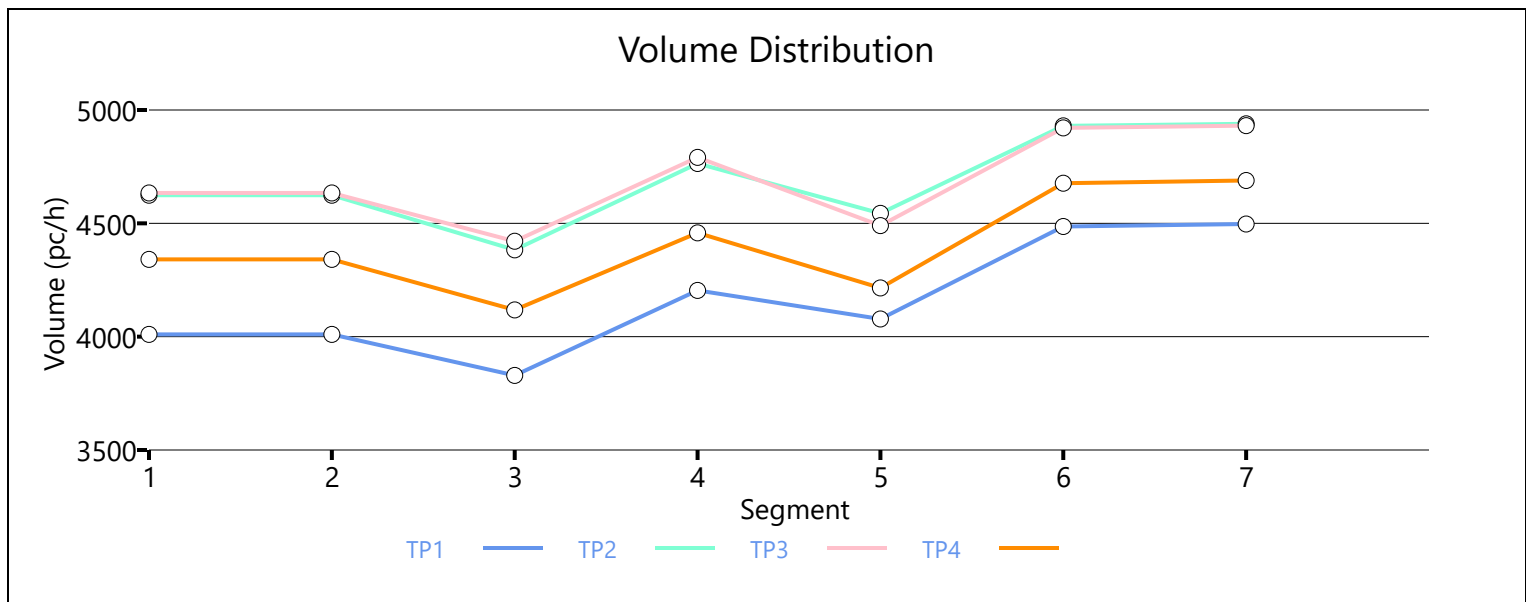
No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic	I-295 WB	1250	3
2	Diverge	Diverge	I-295 WB Off-Ramp to NB Staples Mill Rd (US 33)	1500	3
3	Basic	Basic	I-295 WB	650	3
4	Weaving	Weaving	Staples Mill Rd NB On-Ramp to WB I-295_Weaving_I-295 WB Off-Ramp to SB Staples Mill Rd	1600	4
5	Basic	Basic	I-295 WB	1200	3
6	Merge	Merge	Staples Mill Rd (US 33) SB On-Ramp to WB I-295	1500	3
7	Basic	Basic	I-295 WB	1250	3

Facility Segment Data

Segment 1: Basic															
Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
1	1.00		0.956		4010		7074		0.57		65.8		20.3		C
2	1.00		0.956		4624		7074		0.65		65.4		23.6		C
3	1.00		0.956		4634		7074		0.66		65.4		23.6		C
4	1.00		0.956		4341		7074		0.61		65.7		22.0		C
Segment 2: Diverge															
Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	1.00	1.00	0.956	0.980	4010	177	7200	1900	0.56	0.09	59.6	53.9	22.4	22.9	C
2	1.00	1.00	0.956	0.980	4624	236	7200	1900	0.64	0.12	59.5	53.8	25.9	25.9	C
3	1.00	1.00	0.956	0.980	4634	208	7200	1900	0.64	0.11	59.5	53.8	26.0	25.9	C
4	1.00	1.00	0.956	0.980	4341	217	7200	1900	0.60	0.11	59.5	53.8	24.3	24.5	C

Segment 3: Basic															
Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
1	1.00		0.956		3829		7074		0.54		64.7		19.4		C
2	1.00		0.956		4383		7074		0.62		64.7		22.2		C
3	1.00		0.956		4421		7074		0.62		64.7		22.5		C
4	1.00		0.956		4118		7074		0.58		64.7		20.9		C
Segment 4: Weaving															
Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
1	1.00		0.956		4204		8608		0.49		60.6		17.3		B
2	1.00		0.956		4764		8588		0.55		59.1		20.2		C
3	1.00		0.956		4791		8540		0.56		58.4		20.5		C
4	1.00		0.956		4458		8572		0.52		59.6		18.7		B
Segment 5: Basic															
Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
1	1.00		0.956		4078		7074		0.58		65.3		20.7		C
2	1.00		0.956		4544		7074		0.64		65.1		23.1		C
3	1.00		0.956		4490		7074		0.63		65.0		22.8		C
4	1.00		0.956		4215		7074		0.60		65.2		21.4		C
Segment 6: Merge															
Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	1.00	1.00	0.956	0.980	4486	408	7200	2000	0.62	0.20	62.4	60.6	24.0	22.7	C
2	1.00	1.00	0.956	0.980	4930	386	7200	2000	0.68	0.19	61.9	60.1	26.5	24.7	C
3	1.00	1.00	0.956	0.980	4921	431	7200	2000	0.68	0.22	61.9	60.1	26.5	24.8	C
4	1.00	1.00	0.956	0.980	4677	462	7200	2000	0.65	0.23	62.2	60.4	25.1	23.7	C
Segment 7: Basic															
Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
1	1.00		0.956		4497		7074		0.64		65.4		22.9		C
2	1.00		0.956		4939		7074		0.70		64.7		25.4		C
3	1.00		0.956		4931		7074		0.70		64.8		25.4		C
4	1.00		0.956		4689		7074		0.66		65.3		23.9		C
Facility Time Period Results															
T	Speed, mi/h				Density, pc/mi/ln		Density, veh/mi/ln		Travel Time, min				LOS		
1	63.0				20.9		19.9		1.60				C		
2	62.4				23.7		22.7		1.60				C		
3	62.2				23.8		22.8		1.60				C		
4	62.7				22.2		21.2		1.60				C		

Facility Overall Results			
Space Mean Speed, mi/h	62.6	Density, veh/mi/ln	21.7
Average Travel Time, min	1.60	Density, pc/mi/ln	22.7
Messages			
Comments			



Project Information				
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Analyst	Kimley-Horn	Date	9/2/2025
Agency		Analysis Year	2034
Jurisdiction		Time Period Analyzed	No-Build PM Peak Hour
Project Description	Mountain Road Technology Park	Unit	United States Customary

Facility Global Input	
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Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45.0
Queue Discharge Capacity Drop, %	7	Total Segments	7
Total Time Periods	4	Time Period Duration, min	15
Facility Length, mi	1.70		

Facility Segment Data									
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No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic	I-295 EB	1250	3
2	Diverge	Diverge	I-295 EB Off-Ramp to SB Staples Mill Rd (US 33)	1500	3
3	Basic	Basic	I-295 EB	1000	3
4	Weaving	Weaving	Staples Mill SB On-Ramp to EB I-295_Weaving_I-295 EB Off-Ramp to NB Staples Mill	1500	4
5	Basic	Basic	I-295 EB	950	3
6	Merge	Merge	Staples Mill NB On-Ramp to EB I-295	1500	3
7	Basic	Basic	I-295 EB	1250	3

Facility Segment Data									
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Segment 1: Basic	
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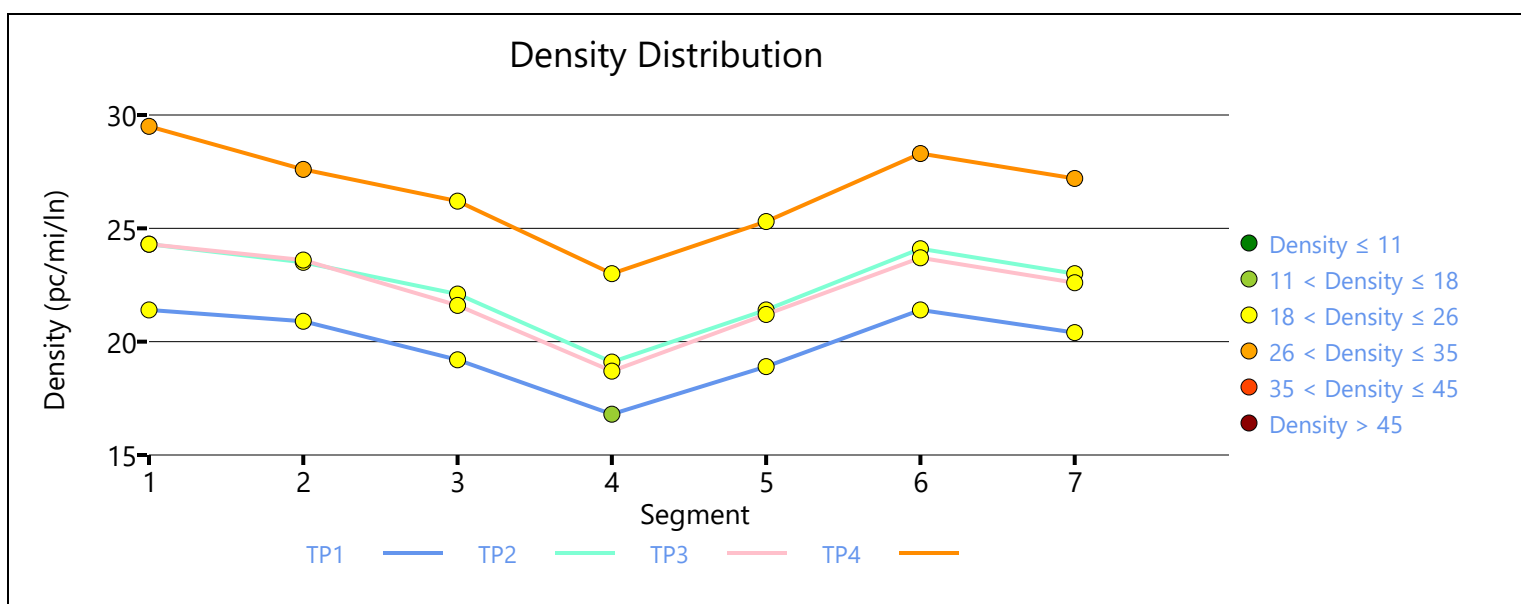
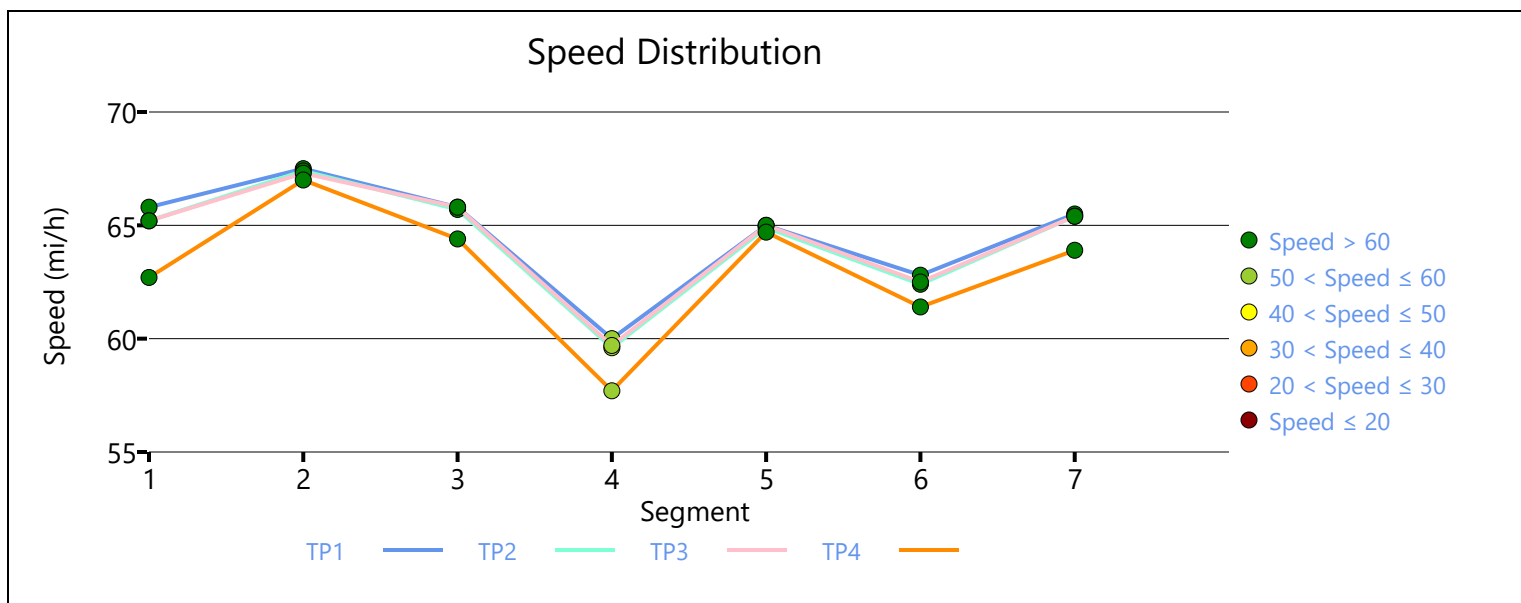
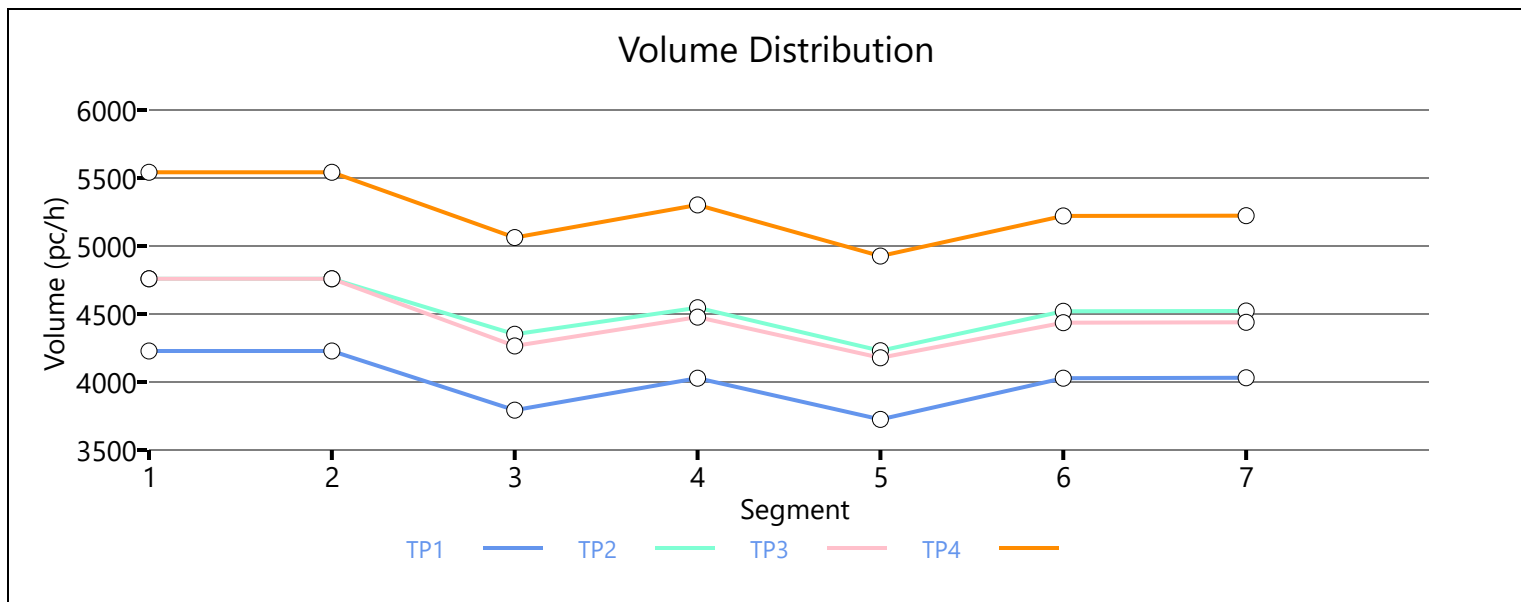
Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	1.00	0.971	4228	7074	0.60	65.8	21.4	C
2	1.00	0.971	4759	7074	0.67	65.2	24.3	C
3	1.00	0.971	4759	7074	0.67	65.2	24.3	C
4	1.00	0.971	5542	7074	0.78	62.7	29.5	D

Segment 2: Diverge									
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Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	1.00	1.00	0.971	0.980	4228	431	7200	2200	0.59	0.20	67.5	64.2	20.9	23.0	C
2	1.00	1.00	0.971	0.980	4759	404	7200	2200	0.66	0.18	67.4	64.3	23.5	25.4	C
3	1.00	1.00	0.971	0.980	4759	490	7200	2200	0.66	0.22	67.3	64.1	23.6	25.5	C
4	1.00	1.00	0.971	0.980	5542	476	7200	2200	0.77	0.22	67.0	64.1	27.6	28.8	D

Segment 3: Basic

Space Mean Speed, mi/h	63.8	Density, veh/mi/ln	22.0
Average Travel Time, min	1.60	Density, pc/mi/ln	22.7
Messages			
Comments			



HCS7 Freeway Facilities Report

Project Information

Analyst	Kimley-Horn	Date	9/2/2025
Agency		Analysis Year	2034
Jurisdiction		Time Period Analyzed	No-Build PM Peak Hour
Project Description	Mountain Road Technology Park	Unit	United States Customary

Facility Global Input

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45.0
Queue Discharge Capacity Drop, %	7	Total Segments	7
Total Time Periods	4	Time Period Duration, min	15
Facility Length, mi	1.70		

Facility Segment Data

No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic	I-295 WB	1250	3
2	Diverge	Diverge	I-295 WB Off-Ramp to NB Staples Mill Rd (US 33)	1500	3
3	Basic	Basic	I-295 WB	650	3
4	Weaving	Weaving	Staples Mill Rd NB On-Ramp to WB I-295_Weaving_I-295 WB Off-Ramp to SB Staples Mill Rd	1600	4
5	Basic	Basic	I-295 WB	1200	3
6	Merge	Merge	Staples Mill Rd (US 33) SB On-Ramp to WB I-295	1500	3
7	Basic	Basic	I-295 WB	1250	3

Facility Segment Data

Segment 1: Basic

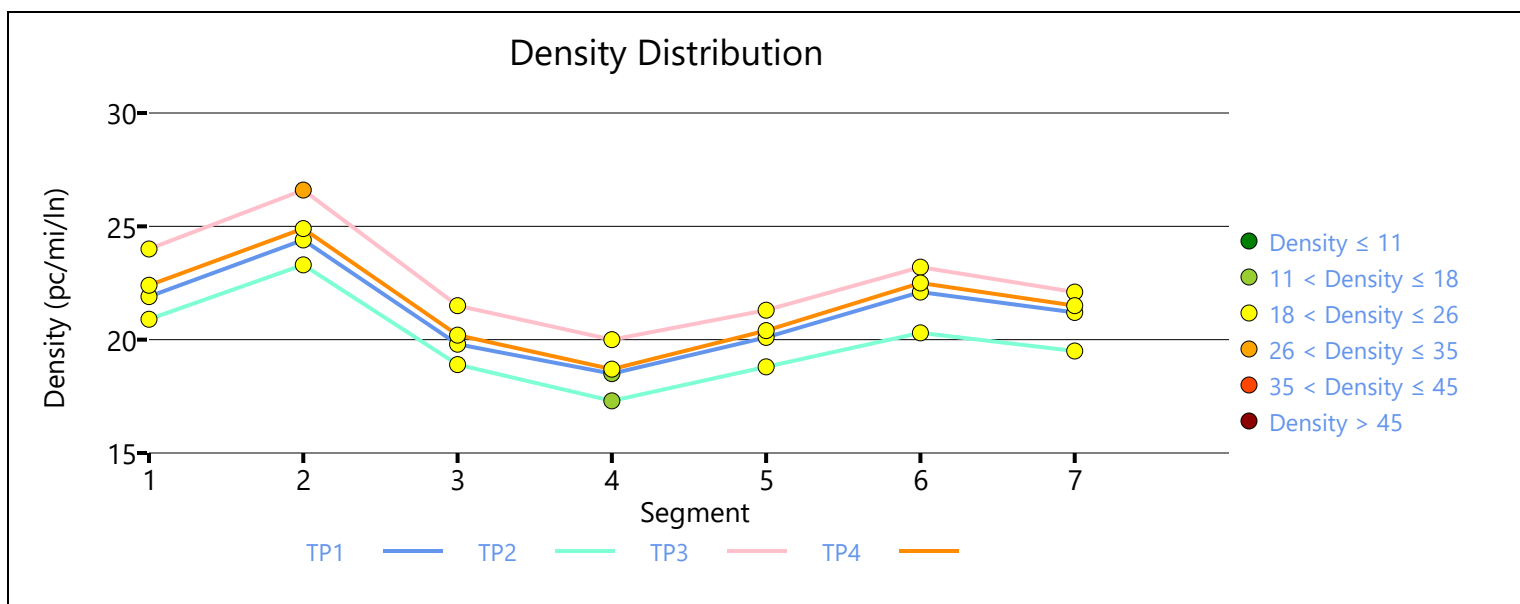
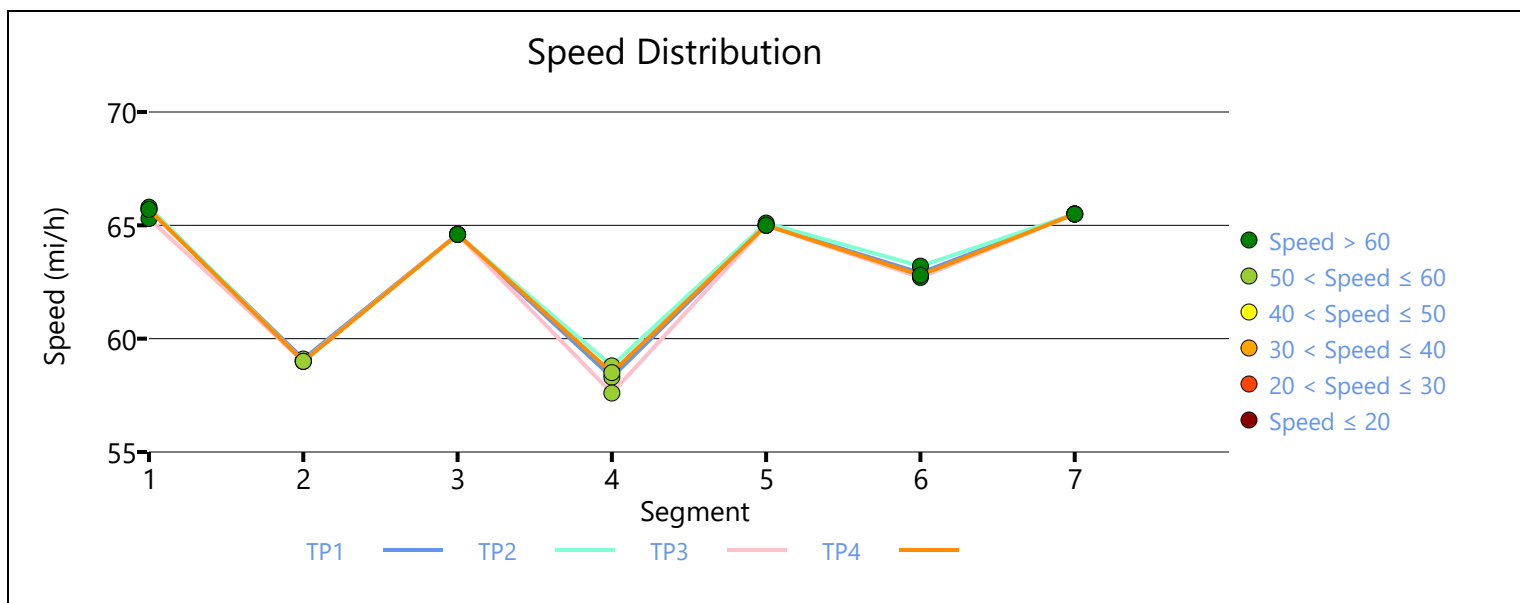
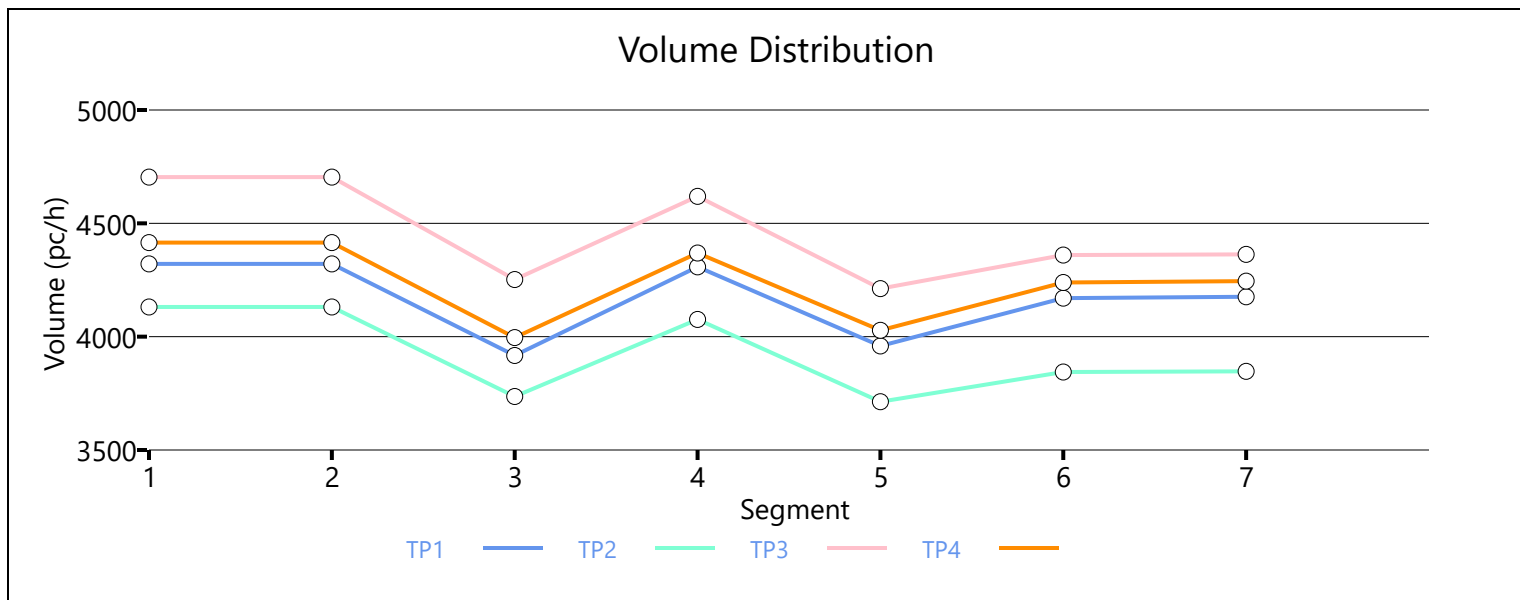
Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	1.00	0.955	4321	7074	0.61	65.7	21.9	C
2	1.00	0.955	4131	7074	0.58	65.8	20.9	C
3	1.00	0.955	4704	7074	0.66	65.3	24.0	C
4	1.00	0.955	4415	7074	0.62	65.7	22.4	C

Segment 2: Diverge

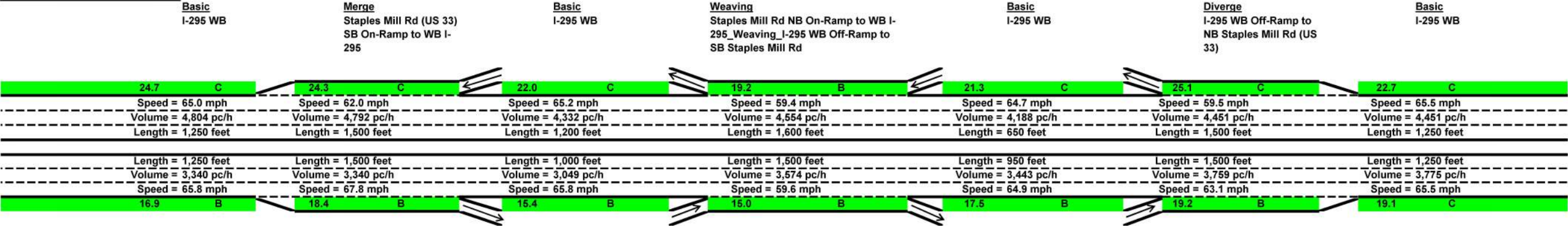
Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	1.00	1.00	0.955	0.980	4321	394	7200	1900	0.60	0.21	59.1	53.4	24.4	24.7	C
2	1.00	1.00	0.955	0.980	4131	385	7200	1900	0.57	0.20	59.0	53.4	23.3	23.8	C
3	1.00	1.00	0.955	0.980	4704	440	7200	1900	0.65	0.23	59.0	53.3	26.6	26.5	C
4	1.00	1.00	0.955	0.980	4415	408	7200	1900	0.61	0.21	59.0	53.3	24.9	25.2	C

Segment 3: Basic															
Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
1	1.00		0.955		3917		7074		0.55		64.6		19.8		C
2	1.00		0.955		3736		7074		0.53		64.6		18.9		C
3	1.00		0.955		4252		7074		0.60		64.6		21.5		C
4	1.00		0.955		3996		7074		0.56		64.6		20.2		C
Segment 4: Weaving															
Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
1	1.00		0.955		4308		8444		0.51		58.3		18.5		B
2	1.00		0.955		4076		8440		0.48		58.8		17.3		B
3	1.00		0.955		4619		8456		0.55		57.6		20.0		B
4	1.00		0.955		4369		8468		0.52		58.5		18.7		B
Segment 5: Basic															
Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
1	1.00		0.955		3959		7074		0.56		65.0		20.1		C
2	1.00		0.955		3713		7074		0.52		65.1		18.8		C
3	1.00		0.955		4212		7074		0.60		65.0		21.3		C
4	1.00		0.955		4028		7074		0.57		65.0		20.4		C
Segment 6: Merge															
Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	1.00	1.00	0.955	0.980	4170	211	7200	2000	0.58	0.11	62.9	61.1	22.1	20.7	C
2	1.00	1.00	0.955	0.980	3844	131	7200	2000	0.53	0.07	63.2	61.4	20.3	19.0	B
3	1.00	1.00	0.955	0.980	4360	148	7200	2000	0.61	0.07	62.7	61.0	23.2	21.4	C
4	1.00	1.00	0.955	0.980	4239	211	7200	2000	0.59	0.11	62.8	61.0	22.5	21.0	C
Segment 7: Basic															
Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
1	1.00		0.955		4176		7074		0.59		65.5		21.2		C
2	1.00		0.955		3847		7074		0.54		65.5		19.5		C
3	1.00		0.955		4363		7074		0.62		65.5		22.1		C
4	1.00		0.955		4245		7074		0.60		65.5		21.5		C
Facility Time Period Results															
T	Speed, mi/h			Density, pc/mi/ln			Density, veh/mi/ln			Travel Time, min			LOS		
1	62.4			21.1			20.2			1.60			C		
2	62.5			19.8			18.9			1.60			C		
3	62.1			22.6			21.6			1.60			C		
4	62.4			21.5			20.5			1.60			C		

Facility Overall Results			
Space Mean Speed, mi/h	62.4	Density, veh/mi/ln	20.3
Average Travel Time, min	1.60	Density, pc/mi/ln	21.2
Messages			
Comments			



2034 Build
AM Peak Hour



Merge & Diverge Segments

LEGEND		
LOS	DENSITY (pc/ln/mi)	COLOR
A	0-10	
B	10-20	
C	20-28	
D	28-35	
E	35 +	
F	Dem. > Cap.	

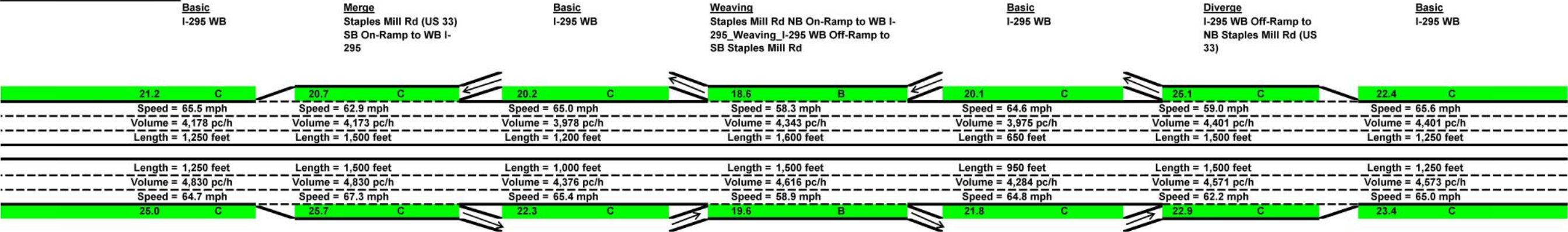
Weave Segments

LEGEND		
LOS	DENSITY (pc/ln/mi)	COLOR
A	0-10	
B	10-20	
C	20-28	
D	28-35	
E	35-43	
F	43+	

Basic Segments

LEGEND		
LOS	DENSITY (pc/ln/mi)	COLOR
A	0-11	
B	11-18	
C	18-26	
D	26-35	
E	35-45	
F	45+	

2034 Build
PM Peak Hour



* Values are for demonstrative purposes and may not reflect actual or anticipated conditions/results

Project Information				
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Analyst	Kimley-Horn	Date	9/2/2025
Agency		Analysis Year	2034
Jurisdiction		Time Period Analyzed	Build AM Peak Hour
Project Description	Mountain Road Technology Park	Unit	United States Customary

Facility Global Input									
1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100
101	102	103	104	105	106	107	108	109	110
111	112	113	114	115	116	117	118	119	120
121	122	123	124	125	126	127	128	129	130
131	132	133	134	135	136	137	138	139	140
141	142	143	144	145	146	147	148	149	150
151	152	153	154	155	156	157	158	159	160
161	162	163	164	165	166	167	168	169	170
171	172	173	174	175	176	177	178	179	180
181	182	183	184	185	186	187	188	189	190
191	192	193	194	195	196	197	198	199	200
201	202	203	204	205	206	207	208	209	210
211	212	213	214	215	216	217	218	219	220
221	222	223	224	225	226	227	228	229	230
231	232	233	234	235	236	237	238	239	240
241	242	243	244	245	246	247	248	249	250
251	252	253	254	255	256	257	258	259	260
261	262	263	264	265	266	267	268	269	270
271	272	273	274	275	276	277	278	279	280
281	282	283	284	285	286	287	288	289	290
291	292	293	294	295	296	297	298	299	300
301	302	303	304	305	306	307	308	309	310
311	312	313	314	315	316	317	318	319	320
321	322	323	324	325	326	327	328	329	330
331	332	333	334	335	336	337	338	339	340
341	342	343	344	345	346	347	348	349	350
351	352	353	354	355	356	357	358	359	360
361	362	363	364	365	366	367	368	369	370
371	372	373	374	375	376	377	378	379	380
381	382	383	384	385	386	387	388	389	390
391	392	393	394	395	396	397	398	399	400
401	402	403	404	405	406	407	408	409	410
411	412	413	414	415	416	417	418	419	420
421	422	423	424	425	426	427	428	429	430

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45.0
Queue Discharge Capacity Drop, %	7	Total Segments	7
Total Time Periods	4	Time Period Duration, min	15
Facility Length, mi	1.70		

Facility Segment Data									
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No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic	I-295 EB	1250	3
2	Diverge	Diverge	I-295 EB Off-Ramp to SB Staples Mill Rd (US 33)	1500	3
3	Basic	Basic	I-295 EB	1000	3
4	Weaving	Weaving	Staples Mill SB On-Ramp to EB I-295_Weaving_I-295 EB Off-Ramp to NB Staples Mill	1500	4
5	Basic	Basic	I-295 EB	950	3
6	Merge	Merge	Staples Mill NB On-Ramp to EB I-295	1500	3
7	Basic	Basic	I-295 EB	1250	3

Facility Segment Data									
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Segment 1: Basic	
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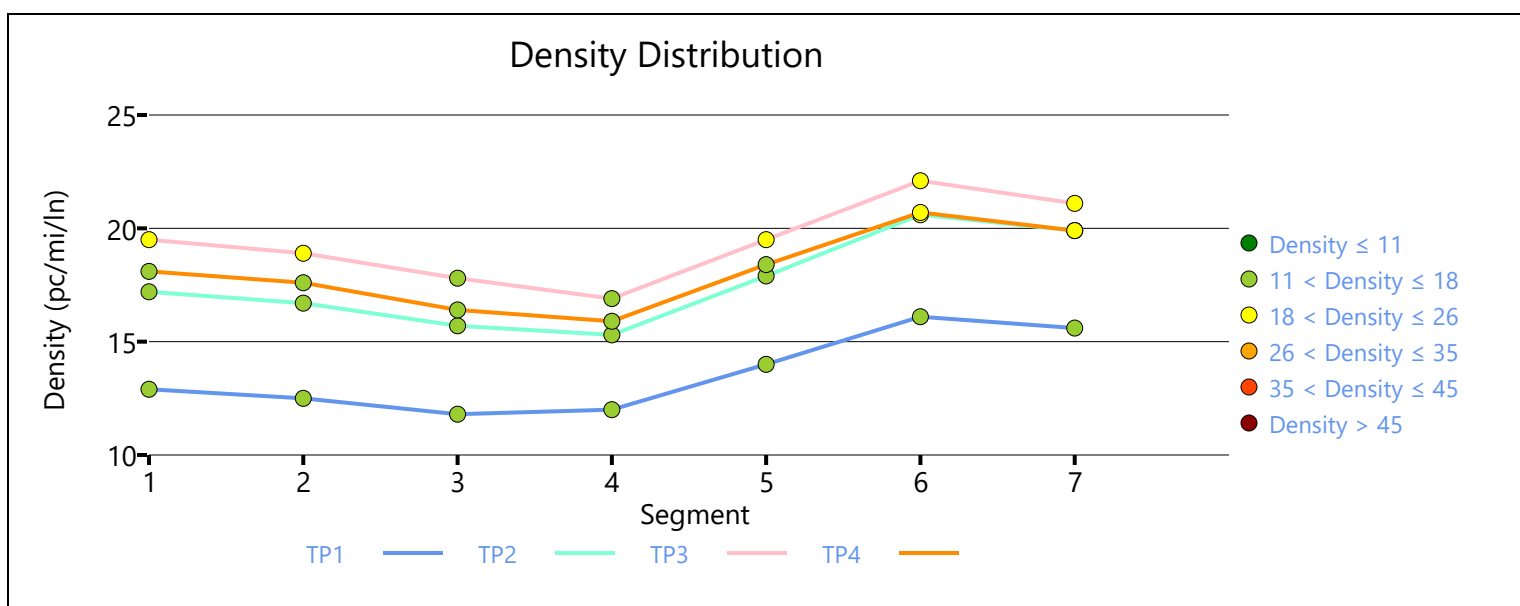
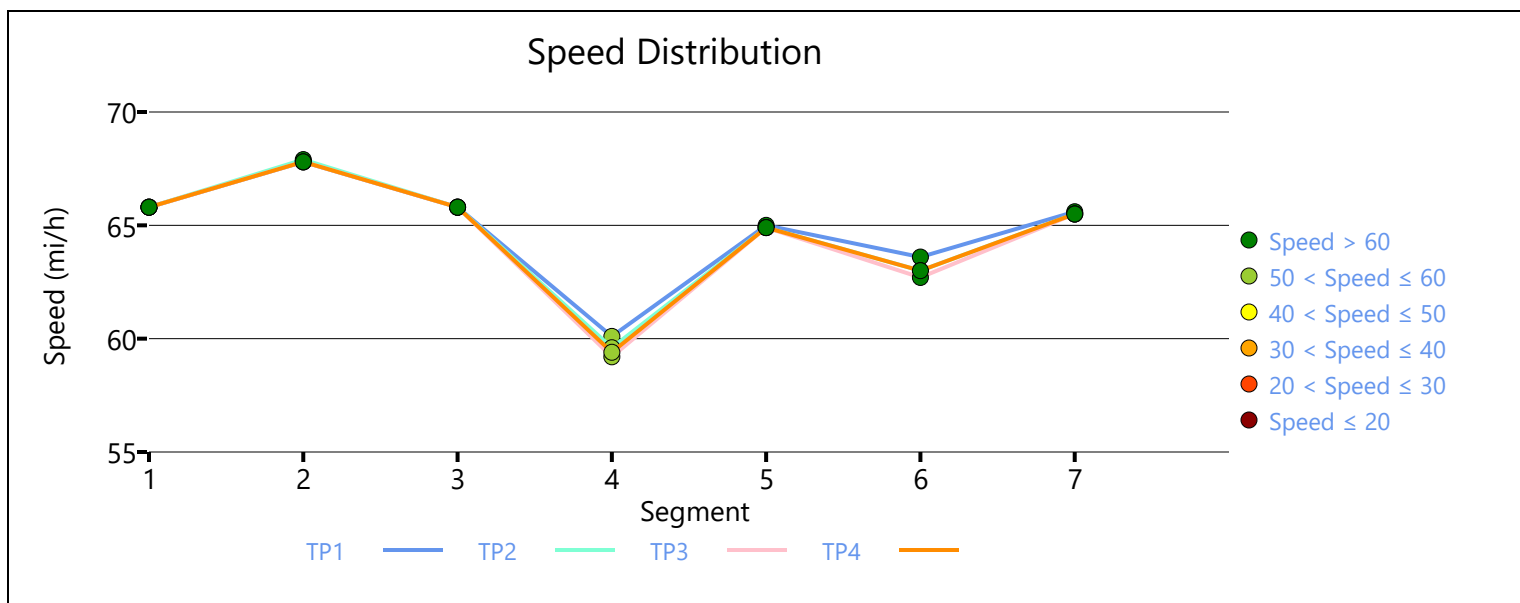
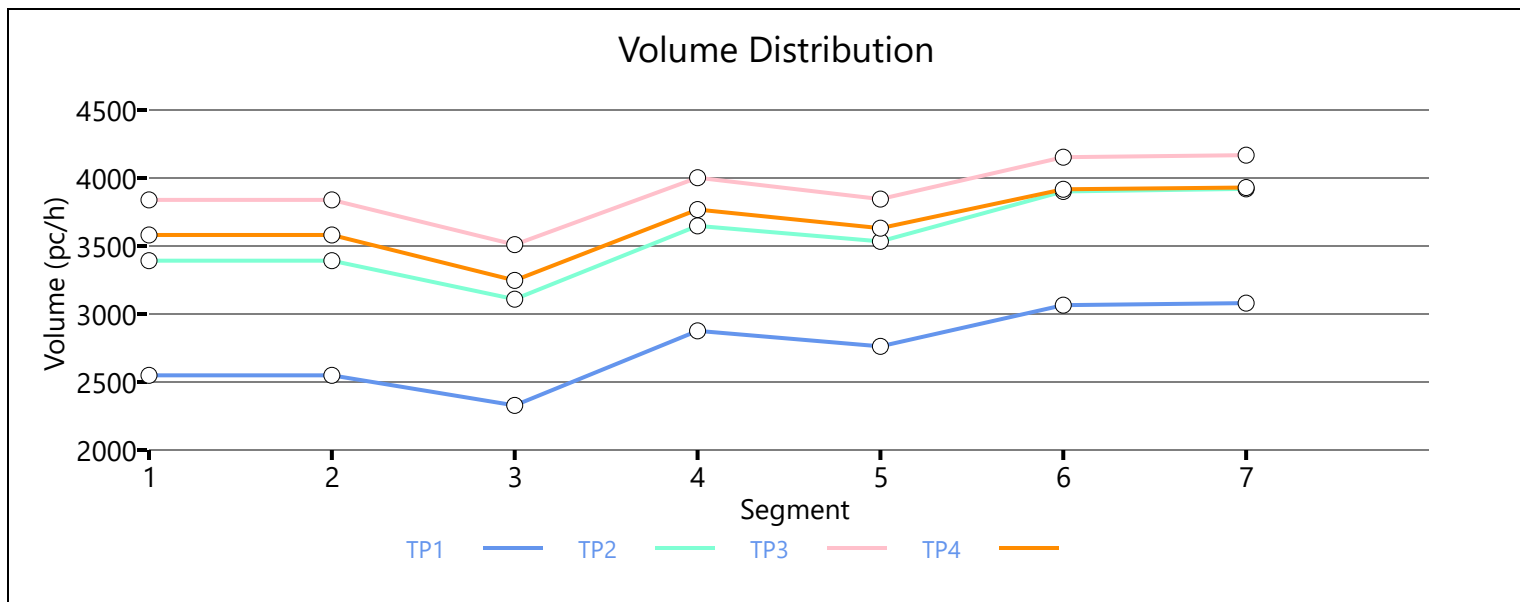
Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	1.00	0.934	2549	7074	0.36	65.8	12.9	B
2	1.00	0.934	3392	7074	0.48	65.8	17.2	B
3	1.00	0.934	3839	7074	0.54	65.8	19.5	C
4	1.00	0.934	3581	7074	0.51	65.8	18.1	C

Segment 2: Diverge									
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Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	1.00	1.00	0.934	0.980	2549	211	7200	2200	0.35	0.10	67.8	64.8	12.5	14.2	B
2	1.00	1.00	0.934	0.980	3392	269	7200	2200	0.47	0.12	67.9	64.6	16.7	18.7	B
3	1.00	1.00	0.934	0.980	3839	314	7200	2200	0.53	0.14	67.8	64.5	18.9	21.0	C
4	1.00	1.00	0.934	0.980	3581	318	7200	2200	0.50	0.14	67.8	64.5	17.6	19.7	B

Segment 3: Basic

Space Mean Speed, mi/h	64.3	Density, veh/mi/ln	16.0
Average Travel Time, min	1.60	Density, pc/mi/ln	17.1
Messages			
Comments			



HCS7 Freeway Facilities Report

Project Information

Analyst	Kimley-Horn	Date	9/2/2025
Agency		Analysis Year	2034
Jurisdiction		Time Period Analyzed	Build AM Peak Hour
Project Description	Mountain Road Technology Park	Unit	United States Customary

Facility Global Input

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45.0
Queue Discharge Capacity Drop, %	7	Total Segments	7
Total Time Periods	4	Time Period Duration, min	15
Facility Length, mi	1.70		

Facility Segment Data

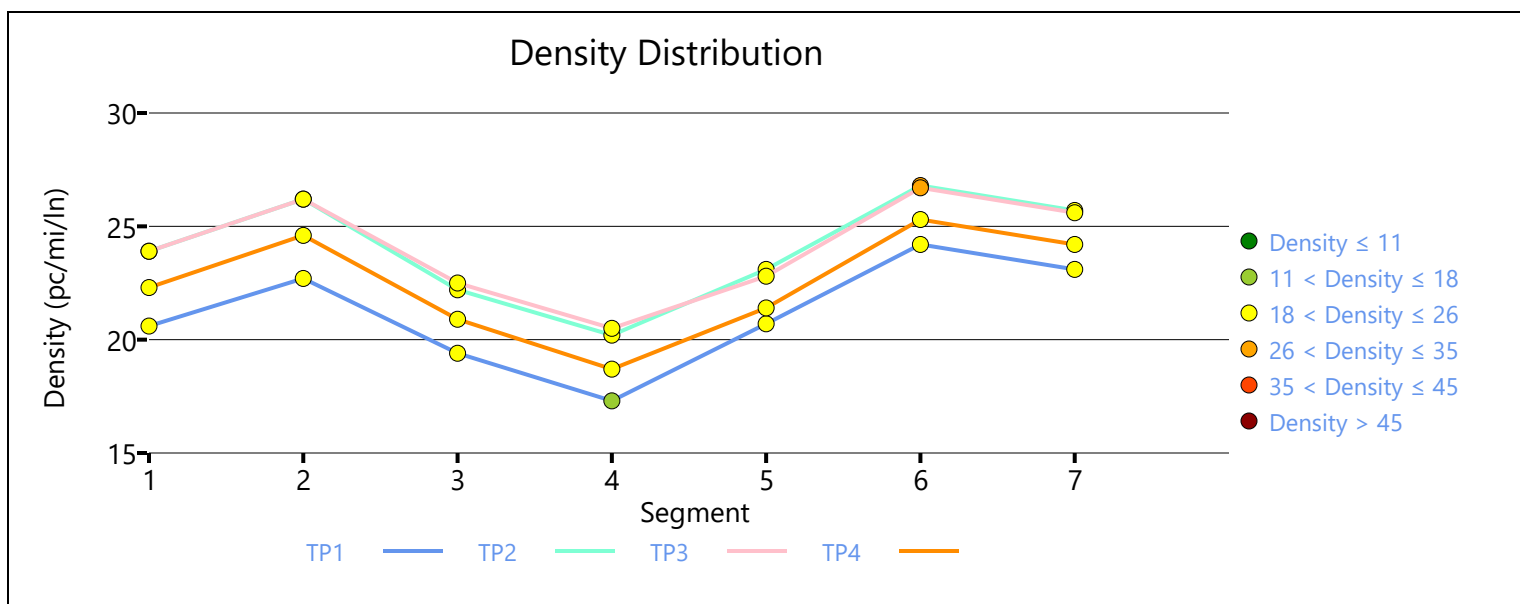
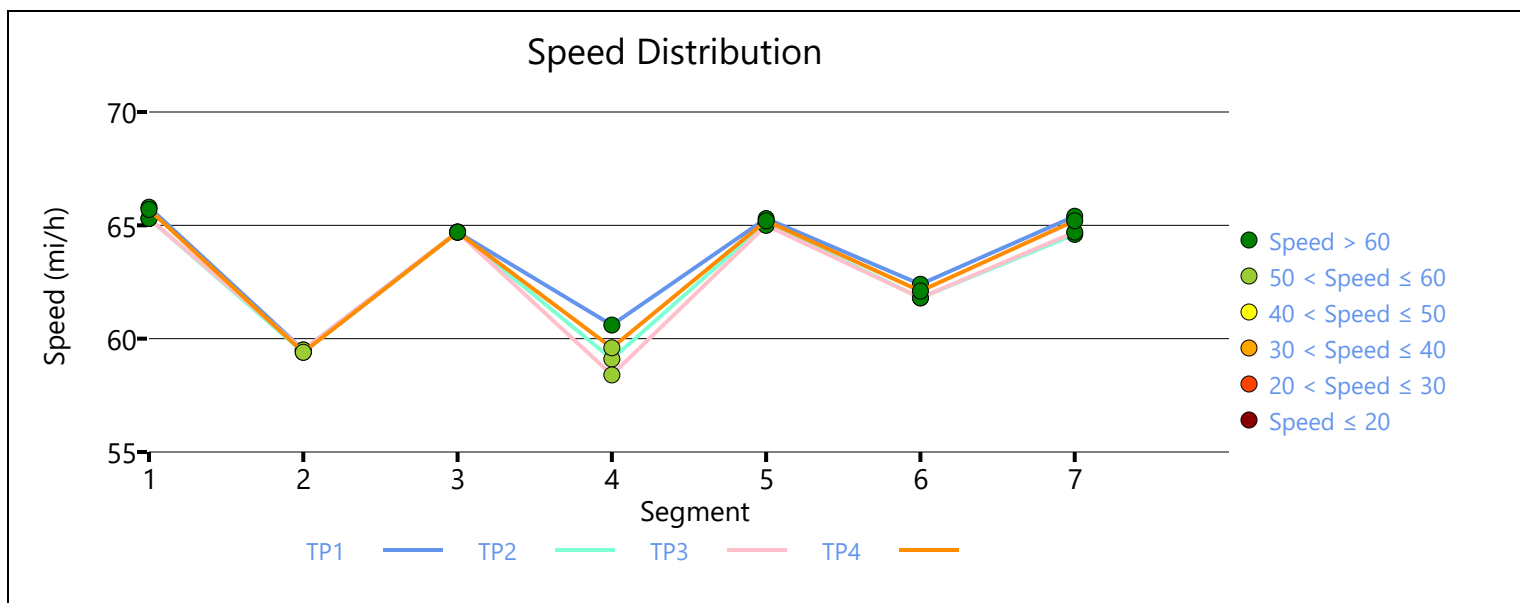
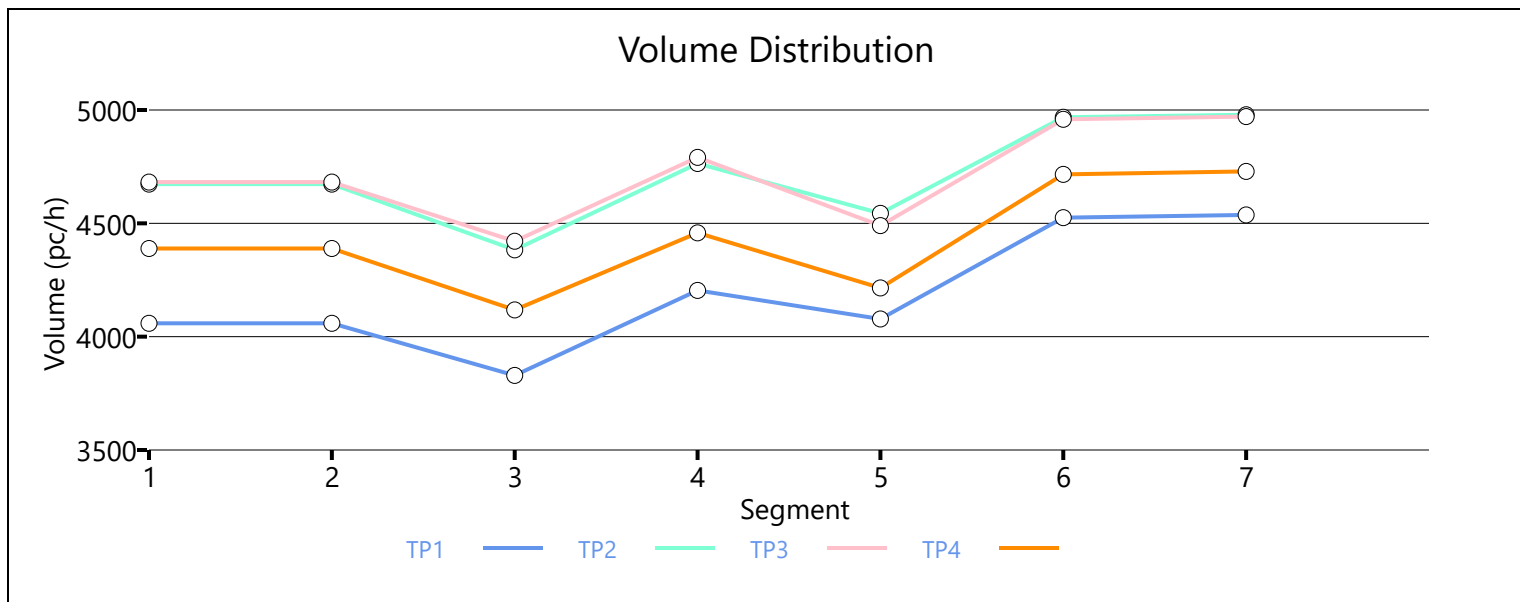
No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic	I-295 WB	1250	3
2	Diverge	Diverge	I-295 WB Off-Ramp to NB Staples Mill Rd (US 33)	1500	3
3	Basic	Basic	I-295 WB	650	3
4	Weaving	Weaving	Staples Mill Rd NB On-Ramp to WB I-295_Weaving_I-295 WB Off-Ramp to SB Staples Mill Rd	1600	4
5	Basic	Basic	I-295 WB	1200	3
6	Merge	Merge	Staples Mill Rd (US 33) SB On-Ramp to WB I-295	1500	3
7	Basic	Basic	I-295 WB	1250	3

Facility Segment Data

Segment 1: Basic															
Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
1	1.00		0.956		4059		7074		0.57		65.8		20.6		C
2	1.00		0.956		4673		7074		0.66		65.3		23.9		C
3	1.00		0.956		4682		7074		0.66		65.3		23.9		C
4	1.00		0.956		4389		7074		0.62		65.7		22.3		C
Segment 2: Diverge															
Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	1.00	1.00	0.956	0.980	4059	223	7200	1900	0.56	0.12	59.5	53.8	22.7	23.2	C
2	1.00	1.00	0.956	0.980	4673	283	7200	1900	0.65	0.15	59.4	53.7	26.2	26.2	C
3	1.00	1.00	0.956	0.980	4682	255	7200	1900	0.65	0.13	59.5	53.7	26.2	26.1	C
4	1.00	1.00	0.956	0.980	4389	264	7200	1900	0.61	0.14	59.4	53.7	24.6	24.8	C

Segment 3: Basic															
Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
1	1.00		0.956		3829		7074		0.54		64.7		19.4		C
2	1.00		0.956		4383		7074		0.62		64.7		22.2		C
3	1.00		0.956		4421		7074		0.62		64.7		22.5		C
4	1.00		0.956		4118		7074		0.58		64.7		20.9		C
Segment 4: Weaving															
Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
1	1.00		0.956		4204		8608		0.49		60.6		17.3		B
2	1.00		0.956		4764		8588		0.55		59.1		20.2		C
3	1.00		0.956		4791		8540		0.56		58.4		20.5		C
4	1.00		0.956		4458		8572		0.52		59.6		18.7		B
Segment 5: Basic															
Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
1	1.00		0.956		4078		7074		0.58		65.3		20.7		C
2	1.00		0.956		4544		7074		0.64		65.1		23.1		C
3	1.00		0.956		4490		7074		0.63		65.0		22.8		C
4	1.00		0.956		4215		7074		0.60		65.2		21.4		C
Segment 6: Merge															
Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	1.00	1.00	0.956	0.980	4525	447	7200	2000	0.63	0.22	62.4	60.6	24.2	23.0	C
2	1.00	1.00	0.956	0.980	4968	424	7200	2000	0.69	0.21	61.8	60.0	26.8	25.0	C
3	1.00	1.00	0.956	0.980	4959	469	7200	2000	0.69	0.23	61.8	60.0	26.7	25.1	C
4	1.00	1.00	0.956	0.980	4716	501	7200	2000	0.66	0.25	62.1	60.3	25.3	24.0	C
Segment 7: Basic															
Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
1	1.00		0.956		4537		7074		0.64		65.4		23.1		C
2	1.00		0.956		4979		7074		0.70		64.6		25.7		C
3	1.00		0.956		4971		7074		0.70		64.7		25.6		C
4	1.00		0.956		4729		7074		0.67		65.2		24.2		C
Facility Time Period Results															
T	Speed, mi/h			Density, pc/mi/ln			Density, veh/mi/ln			Travel Time, min			LOS		
1	63.0			21.0			20.1			1.60			C		
2	62.3			23.9			22.8			1.60			C		
3	62.2			23.9			22.9			1.60			C		
4	62.6			22.4			21.4			1.60			C		

Facility Overall Results			
Space Mean Speed, mi/h	62.5	Density, veh/mi/ln	21.8
Average Travel Time, min	1.60	Density, pc/mi/ln	22.8
Messages			
Comments			



Project Information				
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Analyst	Kimley-Horn	Date	9/2/2025
Agency		Analysis Year	2034
Jurisdiction		Time Period Analyzed	Build PM Peak Hour
Project Description	Mountain Road Technology Park	Unit	United States Customary

Facility Global Input	
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Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45.0
Queue Discharge Capacity Drop, %	7	Total Segments	7
Total Time Periods	4	Time Period Duration, min	15
Facility Length, mi	1.70		

Facility Segment Data									
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No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic	I-295 EB	1250	3
2	Diverge	Diverge	I-295 EB Off-Ramp to SB Staples Mill Rd (US 33)	1500	3
3	Basic	Basic	I-295 EB	1000	3
4	Weaving	Weaving	Staples Mill SB On-Ramp to EB I-295_Weaving_I-295 EB Off-Ramp to NB Staples Mill	1500	4
5	Basic	Basic	I-295 EB	950	3
6	Merge	Merge	Staples Mill NB On-Ramp to EB I-295	1500	3
7	Basic	Basic	I-295 EB	1250	3

Facility Segment Data									
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Segment 1: Basic	
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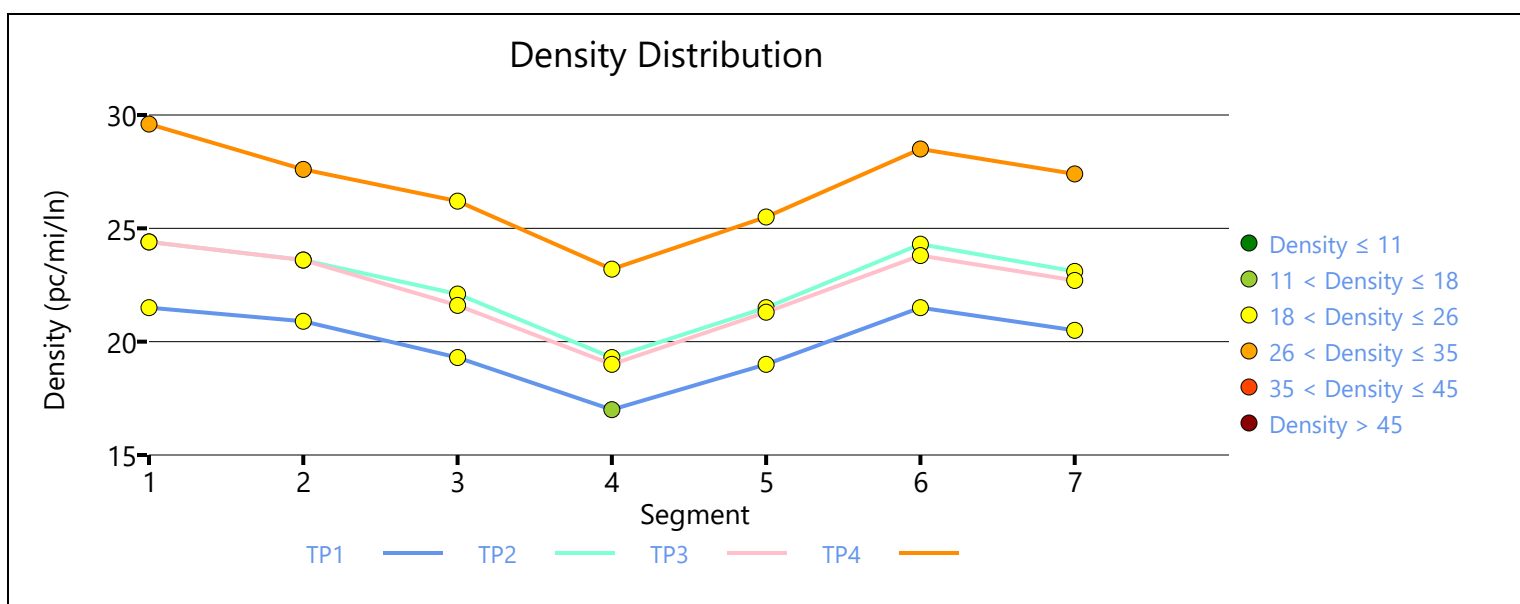
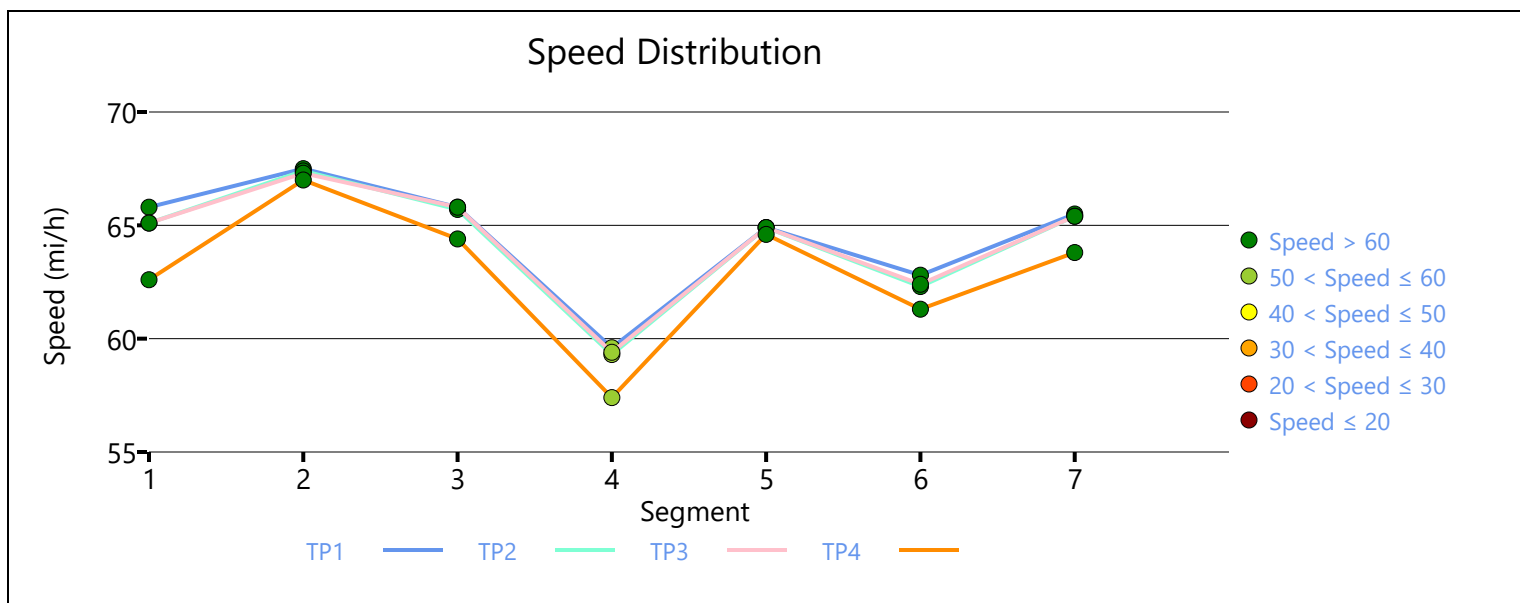
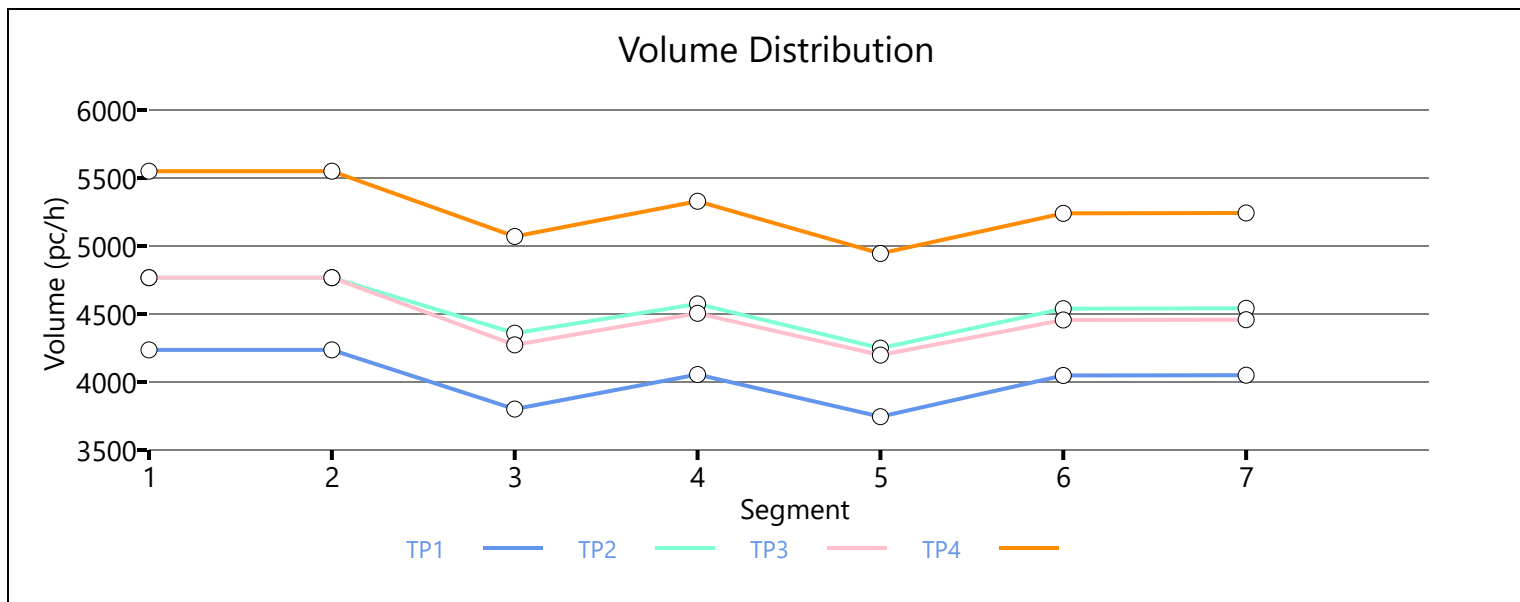
Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	1.00	0.971	4236	7074	0.60	65.8	21.5	C
2	1.00	0.971	4767	7074	0.67	65.1	24.4	C
3	1.00	0.971	4767	7074	0.67	65.1	24.4	C
4	1.00	0.971	5550	7074	0.78	62.6	29.6	D

Segment 2: Diverge									
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Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	1.00	1.00	0.971	0.980	4236	431	7200	2200	0.59	0.20	67.5	64.2	20.9	23.0	C
2	1.00	1.00	0.971	0.980	4767	404	7200	2200	0.66	0.18	67.4	64.3	23.6	25.4	C
3	1.00	1.00	0.971	0.980	4767	490	7200	2200	0.66	0.22	67.3	64.1	23.6	25.5	C
4	1.00	1.00	0.971	0.980	5550	476	7200	2200	0.77	0.22	67.0	64.1	27.6	28.8	D

Segment 3: Basic									
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Space Mean Speed, mi/h	63.7	Density, veh/mi/ln	22.1
Average Travel Time, min	1.60	Density, pc/mi/ln	22.8
Messages			
Comments			



HCS7 Freeway Facilities Report

Project Information

Analyst	Kimley-Horn	Date	9/2/2025
Agency		Analysis Year	2034
Jurisdiction		Time Period Analyzed	Build PM Peak Hour
Project Description	Mountain Road Technology Park	Unit	United States Customary

Facility Global Input

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45.0
Queue Discharge Capacity Drop, %	7	Total Segments	7
Total Time Periods	4	Time Period Duration, min	15
Facility Length, mi	1.70		

Facility Segment Data

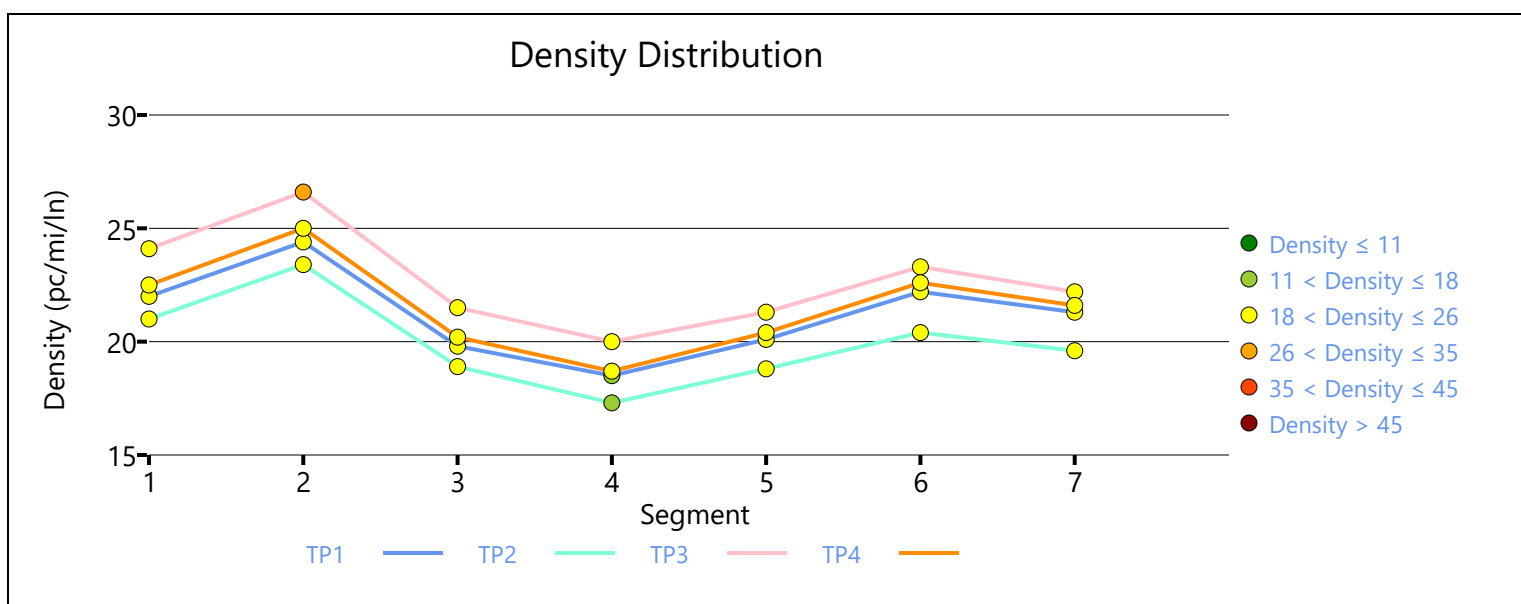
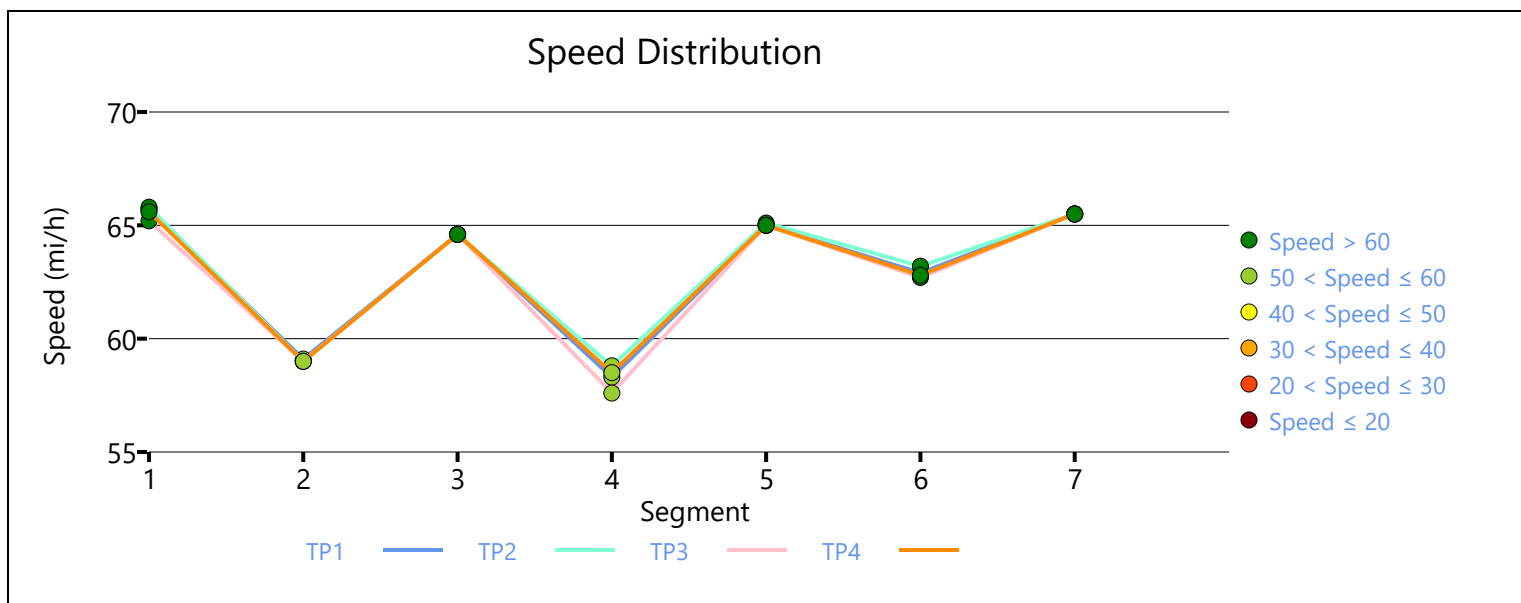
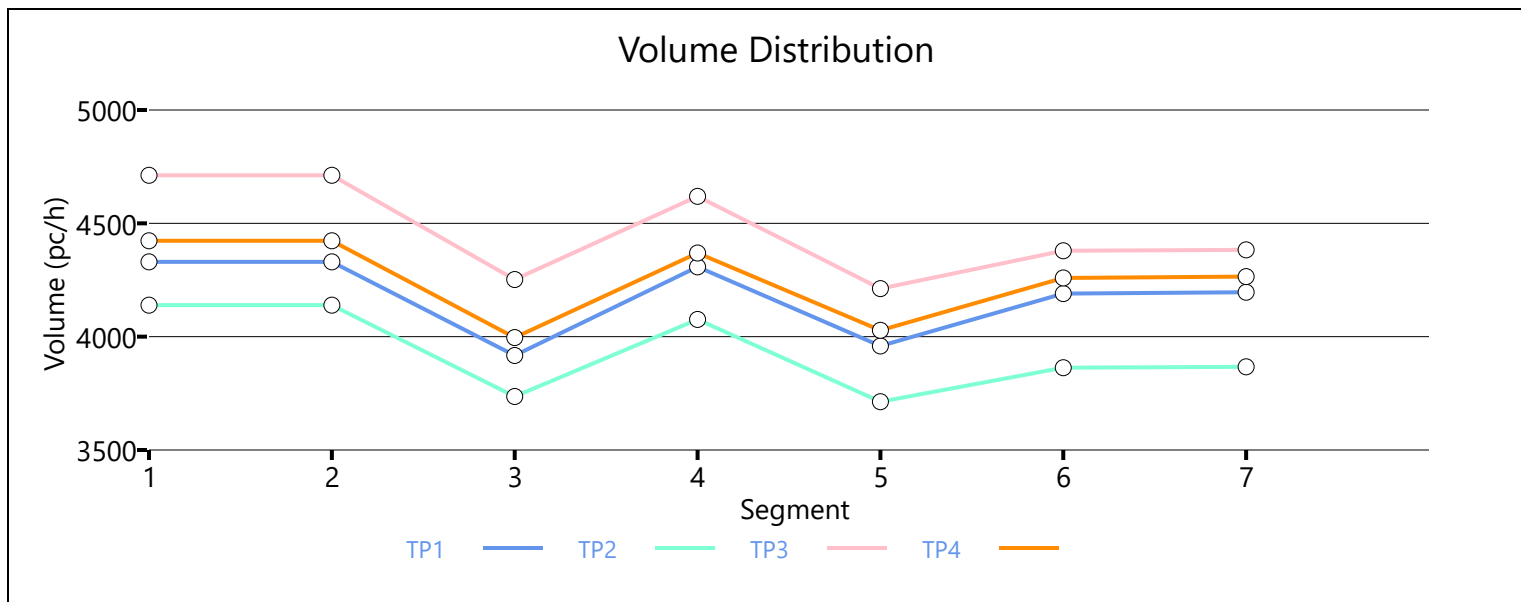
No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic	I-295 WB	1250	3
2	Diverge	Diverge	I-295 WB Off-Ramp to NB Staples Mill Rd (US 33)	1500	3
3	Basic	Basic	I-295 WB	650	3
4	Weaving	Weaving	Staples Mill Rd NB On-Ramp to WB I-295_Weaving_I-295 WB Off-Ramp to SB Staples Mill Rd	1600	4
5	Basic	Basic	I-295 WB	1200	3
6	Merge	Merge	Staples Mill Rd (US 33) SB On-Ramp to WB I-295	1500	3
7	Basic	Basic	I-295 WB	1250	3

Facility Segment Data

Segment 1: Basic															
Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
1	1.00		0.955		4330		7074		0.61		65.7		22.0		C
2	1.00		0.955		4139		7074		0.59		65.8		21.0		C
3	1.00		0.955		4712		7074		0.67		65.2		24.1		C
4	1.00		0.955		4423		7074		0.63		65.6		22.5		C
Segment 2: Diverge															
Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	1.00	1.00	0.955	0.980	4330	402	7200	1900	0.60	0.21	59.1	53.4	24.4	24.8	C
2	1.00	1.00	0.955	0.980	4139	393	7200	1900	0.57	0.21	59.0	53.4	23.4	23.9	C
3	1.00	1.00	0.955	0.980	4712	448	7200	1900	0.65	0.24	59.0	53.3	26.6	26.6	C
4	1.00	1.00	0.955	0.980	4423	416	7200	1900	0.61	0.22	59.0	53.3	25.0	25.2	C

Segment 3: Basic															
Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
1	1.00		0.955		3917		7074		0.55		64.6		19.8		C
2	1.00		0.955		3736		7074		0.53		64.6		18.9		C
3	1.00		0.955		4252		7074		0.60		64.6		21.5		C
4	1.00		0.955		3996		7074		0.56		64.6		20.2		C
Segment 4: Weaving															
Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
1	1.00		0.955		4308		8444		0.51		58.3		18.5		B
2	1.00		0.955		4076		8440		0.48		58.8		17.3		B
3	1.00		0.955		4619		8456		0.55		57.6		20.0		B
4	1.00		0.955		4369		8468		0.52		58.5		18.7		B
Segment 5: Basic															
Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
1	1.00		0.955		3959		7074		0.56		65.0		20.1		C
2	1.00		0.955		3713		7074		0.52		65.1		18.8		C
3	1.00		0.955		4212		7074		0.60		65.0		21.3		C
4	1.00		0.955		4028		7074		0.57		65.0		20.4		C
Segment 6: Merge															
Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	1.00	1.00	0.955	0.980	4190	231	7200	2000	0.58	0.12	62.9	61.1	22.2	20.8	C
2	1.00	1.00	0.955	0.980	3863	150	7200	2000	0.54	0.08	63.2	61.4	20.4	19.1	B
3	1.00	1.00	0.955	0.980	4379	167	7200	2000	0.61	0.08	62.7	60.9	23.3	21.6	C
4	1.00	1.00	0.955	0.980	4259	231	7200	2000	0.59	0.12	62.8	61.0	22.6	21.2	C
Segment 7: Basic															
Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
1	1.00		0.955		4196		7074		0.59		65.5		21.3		C
2	1.00		0.955		3867		7074		0.55		65.5		19.6		C
3	1.00		0.955		4383		7074		0.62		65.5		22.2		C
4	1.00		0.955		4265		7074		0.60		65.5		21.6		C
Facility Time Period Results															
T	Speed, mi/h			Density, pc/mi/ln			Density, veh/mi/ln			Travel Time, min			LOS		
1	62.4			21.1			20.2			1.60			C		
2	62.5			19.9			19.0			1.60			C		
3	62.1			22.7			21.6			1.60			C		
4	62.4			21.5			20.6			1.60			C		

Facility Overall Results			
Space Mean Speed, mi/h	62.4	Density, veh/mi/ln	20.3
Average Travel Time, min	1.60	Density, pc/mi/ln	21.3
Messages			
Comments			



Appendix F: Trip Generation

Mountain Road Technology Park

Build (Peak Construction) Conditions Trip Generation

Peak Construction Workforce

600-800 employees per shift (2 buildings under construction)

Anticipated Hourly Arrival/Departure Volumes

Start Time	In	Out	Total	Distribution of Peak Period
AM Peak Hour				
4:00 AM	72	8	80	10%
5:00 AM	216	24	240	30%
6:00 AM	360	40	400	50%
7:00 AM	72	8	80	10%
PM Peak Hour				
2:00 PM	8	72	80	10%
3:00 PM	40	360	400	50%
4:00 PM	24	216	240	30%
5:00 PM	8	72	80	10%

Morning peak hour directional distribution used for the anticipated trips entering/exiting was assumed to be 90% entering, 10% exiting

Evening peak hour directional distribution used for the anticipated trips entering/exiting was assumed to be 10% entering, 90% exiting

Build Conditions Trip Generation

Estimated Number of Employees for Proposed Development

Land Use	Scale	Rate	Estimated # of Employees
Data Center Campus	900 Megawatts (MW)	39 employees per 100 MW	351

Weighted Average Trip Generation Rates per Bowman Assessment

Scenario	Scale
Weekday Daily	4.24 per employee
Weekday AM peak hour	0.53 per employee
Weekday PM peak hour	0.17 per employee

Trip Generation Calculation

Land Use	Scale	Weekday Daily Trips	Weekday AM Peak Hour			Weekday PM Peak Hour		
			In	Out	Total	In	Out	Total
Data Center Campus	351 employees	1488	102	84	186	18	42	60

*ITE Trip Generation Manual, 11th Edition directional distribution was used for the anticipated trips entering/exiting the site during the AM and PM peak hours

Appendix G: Turn Lane Warrants

Turn Lane Warrants

6. US-33/Staples Mill Road and Project Driveway 2

Right Turn Treatment

Mountain Road Technology Park – 2034 Build
(Peak Construction) Conditions

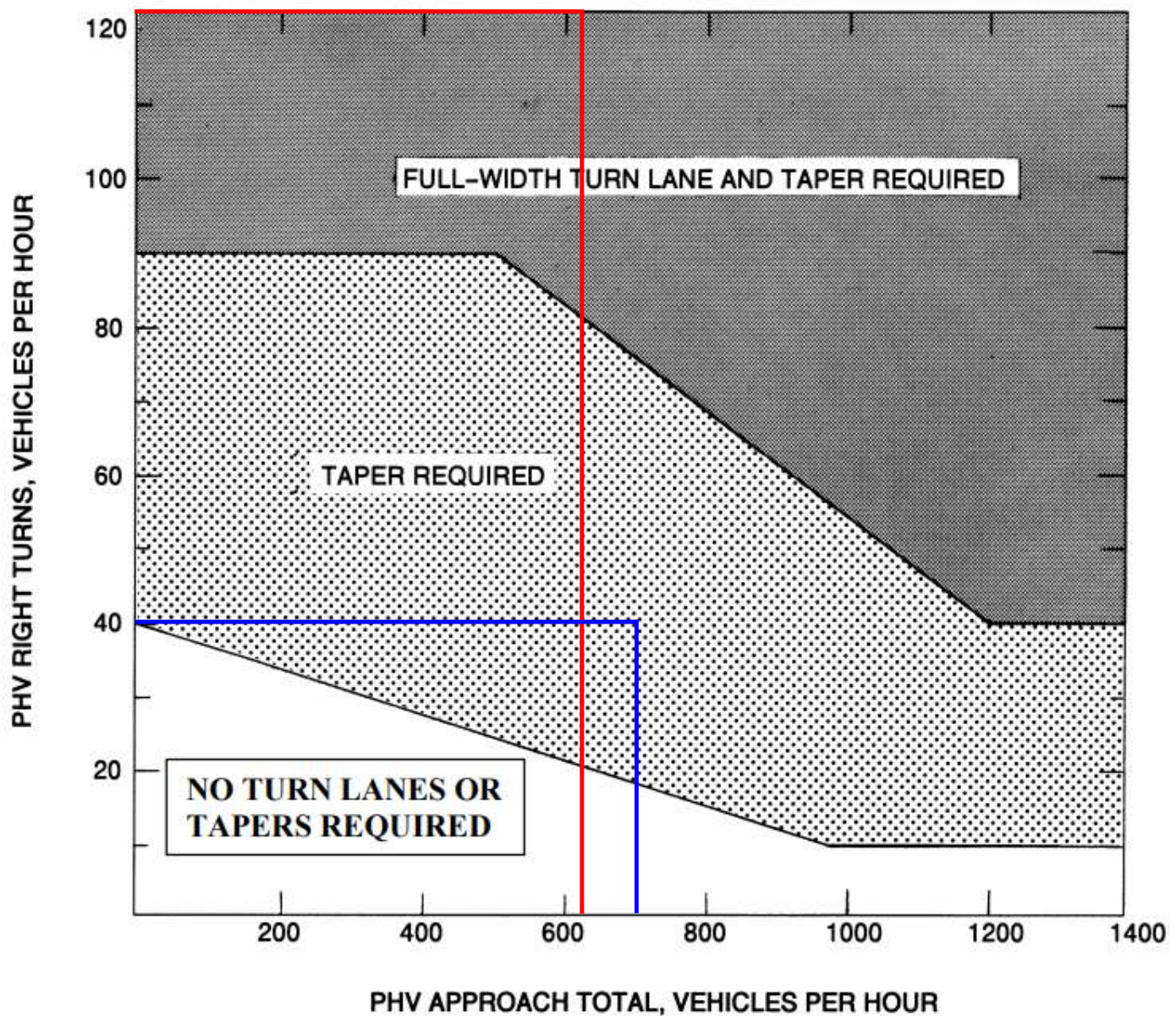


FIGURE 3-27 WARRANTS FOR RIGHT TURN TREATMENT (4-LANE HIGHWAY)

Appropriate Radius required at all Intersections and Entrances (Commercial or Private).

LEGEND

PHV - - Peak Hour Volume (also Design Hourly Volume equivalent)

■ - - AM Conditions

■ - - PM Conditions

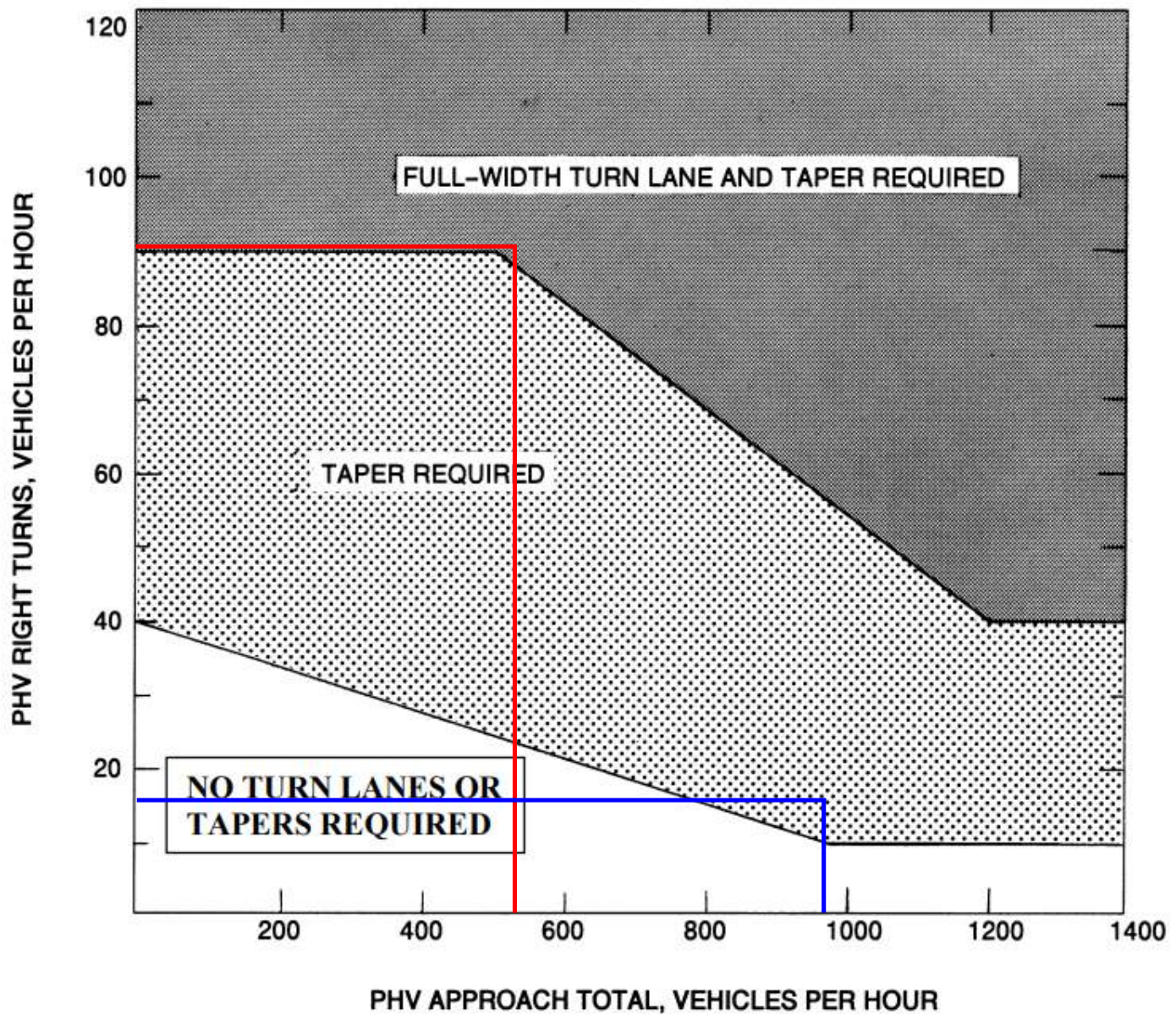


FIGURE 3-27 WARRANTS FOR RIGHT TURN TREATMENT (4-LANE HIGHWAY)

Appropriate Radius required at all Intersections and Entrances (Commercial or Private).

LEGEND

PHV - - Peak Hour Volume (also Design Hourly Volume equivalent)

■ - AM Conditions

■ - PM Conditions