Traffic Impact Study

# View High Sports Complex

## Lee’s Summit, Missouri

Prepared For:

**Engineering Solutions**

Date:

**December 2024**

Kimley»Horn

# Traffic Impact Study

# View High Sports Complex

Lee's Summit, Missouri

**Prepared for:**
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12/10/2024

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# TABLES

## EXHIBITS (SEE APPENDIX A)

# 1.0 INTRODUCTION

This report serves as the traffic impact study for the View High Sports Complex development, generally located in the northeast and southeast corners of the View High Drive & Ashurst Drive intersection in Lee's Summit, Missouri, adjacent to the city limits. The location of the development is shown on **Exhibit 1** in **Appendix A**.

## 1.1 REPORT PURPOSE AND OBJECTIVES

The purpose of this study is to address traffic and transportation impacts of the proposed development on surrounding streets and intersections. This traffic impact study was prepared based on criteria set forth by the City of Lee's Summit *Access Management Code*. The following information is provided.

- A description and map of the existing and proposed street network to be affected by the proposed development. This information includes existing and proposed roadway characteristics and existing traffic volumes.
- Trip generation calculations based on the *Institute of Traffic Engineers (ITE) Trip Generation Manual, 11th Edition*, for the proposed development. In addition, projected trip distributions onto the street network are provided.
- Analysis of impacts of the traffic generated by the proposed development on the street network, including analysis of peak period levels of service (LOS), delay times, and queuing at study area intersections.
- Evaluation of conformance with access management guidelines.
- Discussion of potential improvements and traffic management measures identified to mitigate operational concerns.

In summary, the study is to determine the trip generation of the View High Sports Complex development, assign new development trips to the street network, analyze various scenarios to determine the impacts of proposed site traffic, and identify potential mitigation measures needed to achieve acceptable operations at the study intersections.

# 2.0 PREVIOUS STUDIES

Several previous traffic studies have been completed for development near the site. The Summit Church development is a 43-acre site that includes a 67,000 square-foot church building with a 1,500-seat worship venue, which was built in two phases. The north site drive, referred to as Drive B in this study, is located approximately 430 feet east of the View High Drive and Chipman Road intersection. The south site drive (Ashurst Drive) is located approximately 900 feet south of Chipman Road and 635 feet north of the 109th Street and View High Drive intersection. A 6-acre portion of the site along the west edge of the site between View High Drive and Drive B was planned to be developed as a commercial site. The site also includes 15 acres of undeveloped land located south of Ashurst Drive, and no land uses were planned for that area.

The original traffic impact study for this development was completed in August of 2015 and was titled The Summit Church Traffic Impact Study. The traffic study for the approved development included a discussion of development phasing and timing of the improvements identified. The study stated that the north and south site drives were to be constructed with the initial phases of the development. The initial phase was to include approximately half of the church building and worship venue spaces. The second phase included the remaining church and worship venue spaces and the commercial site.

Turn lane improvements were identified at the View High Drive and Ashurst Drive intersection with the second phase of the development. These improvements include constructing a median break and southbound left-turn lane with a minimum of 200 feet of storage plus an appropriate taper. A northbound right-turn lane with a minimum of 150 feet of storage plus an appropriate taper was also recommended at the View High Drive and Ashurst Drive. These improvements have not been constructed at the time of this study.

An update to the original traffic impact study was prepared in April of 2020. The updated study evaluated both phases of the church without any commercial development. For the updated study, a traffic signal was assumed at the intersection of View High Drive and Chipman Road as part of the City of Lee's Summit's Chipman Road improvements project. The updated study found that the improvements identified in the original traffic study for the View High Drive and Ashurst Drive intersection were not necessary without the commercial development.

# 3.0 EXISTING CONDITIONS

## 3.1 STUDY AREA

At the time of this study, both phases of the Summit Church have been constructed. Drive B separating the church and commercial site has been partially constructed, extending south from Chipman Road approximately 250 feet and providing access to the church's parking area before terminating. Drive B is not continuous to Ashurst Drive. Ashurst Drive has been constructed and provides right-in, right-out access at View High Drive before extending east to connect to a single-family neighborhood. The commercial area to the west of the church has not been developed.

Through discussion with City staff, the following intersections were included within the study area for the traffic analysis. The list provides the existing intersection control for each of the study intersections.

- View High Drive & Ashurst Drive (Side Street Stop)
- View High Drive & Chipman Road (Side Street Stop)
- Chipman Road & Drive B (Side Street Stop)

## 3.2 STREET NETWORK

The existing street network within the study area includes View High Drive, Chipman Road, and Ashurst Drive. The following provides a summary of the existing street network within the study area:

**View High Drive** is a two-lane divided primary arterial roadway with a wide raised median located to the west of the proposed development site. View High Drive previously had two through lanes in both directions. However, View High Drive has been restriped to accommodate buffered bike lanes, resulting in one through lane in each direction. There is a sidewalk along the east side of View High Drive and a shared-use path along the west side through the study area. The posted speed limit is 45 miles per hour (mph). Approximately one-half mile north of the site there is a diamond interchange at View High Drive and I-470. The city limits run along the east side of View High Drive, and the roadway is located within Kansas City, Missouri.

**Chipman Road** is a two-lane undivided minor arterial roadway that is located north of the proposed development site. Chipman Road was under construction as part of the City's Chipman Road improvements project at the time of this study. The improvements include widening Chipman Road to three lanes with a center two-way left-turn lane, curb and gutter, sidewalk, and a shared-use path. The posted speed limit along Chipman Road is 35 mph.

**Ashurst Drive** is a two-lane local roadway that runs east-west through the proposed development site. Ashurst Drive provides right-in, right-out access at View High Drive and extends east to connect to a single-family neighborhood. There are no sidewalk facilities along Ashurst Drive.

## 3.3 TRAFFIC DATA COLLECTION

Turning movement counts were collected at the View High Drive & Ashurst Drive intersection on Thursday, November 21, 2024, and Saturday, November 23, 2024. The turning movement count data collected is included in **Appendix B**. The PM peak hour occurred between 4:45 PM and 5:45 PM, and the Saturday peak hour occurred between 12:15 PM and 1:15 PM. Traffic counts were not collected at the Chipman Road study intersections because Chipman Road was closed for construction at the time of this study.

The PM peak hour turning movement counts from the 2015 traffic impact study were compared to the counts collected for this study. The through volumes on View High Drive were very similar in the 2015 and 2024 counts. To account for the current closure of Chipman Road, the turning movements from the 2015

counts at the View High Drive & Chipman Road intersection were added to the 2024 PM peak hour count volumes and distributed through the study intersections.

For the Saturday peak hour counts, the PM peak hour turning movements from the 2015 counts at the View High Drive & Chipman Road intersection were factored based on the ratio of the Saturday peak hour to the PM peak hour. It was found that the Saturday peak hour volumes collected at View High Drive & Ashurst Drive are approximately 62% of the PM peak hour volumes. The factored turning movement volumes were added to the 2024 Saturday peak hour count volumes and distributed through the study intersections.

The Existing Conditions peak hour turning movement volumes are shown on **Exhibit 2**. The existing geometry with lane configurations and intersection control at the study intersections is shown on **Exhibit 3**. The lane configurations and intersection controls reflect conditions when the Chipman Road improvements project is completed.

# 4.0 PROPOSED DEVELOPMENT

## 4.1 SITE DESCRIPTION

The proposed development includes a large building south of Ashurst Drive that contains a playing surface that can be divided into three small soccer fields, six basketball courts, and an office area. Four outdoor pickleball courts are proposed to be located directly east of the building. A drive aisle separates the pickleball courts from a full-size soccer field located in the eastern portion of the site. The proposed development plan also includes a commercial pad site in the northeast corner of the View High Drive and Ashurst Drive intersection.

## 4.2 SITE CIRCULATION

The sports complex portion of the proposed development site will be accessed from three new driveways along Ashurst Drive. A large surface parking area is located in the southwestern portion of the proposed development site, with additional parking provided along the drive aisle that runs parallel to the south side of Ashurst Drive. The drive aisle in the western parking area will extend to the south property line, to allow for a future street connection to the south. The commercial site will be accessed by a new driveway along Drive B.

## 4.3 TRIP GENERATION

Trip generation estimates were prepared using the *ITE Trip Generation Manual,* 11th Edition. **Table 1** shows the expected trips to be generated by the proposed development. The total trip generation is anticipated to be 5,117 daily trips, 469 trips during the PM peak hour (226 entering and 243 exiting), and 250 trips during the Saturday peak hour (132 entering and 118 exiting).

**TABLE 1: TRIP GENERATION**

| Land Use Description | ITE Code | Intensity / Units | Daily | PM Peak Hour | | | SAT Peak Hour | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | In | Out | Total | In | Out | Total |
| Soccer Complex | 488 | 1 Field | 71 | 11 | 5 | 16 | 18 | 19 | 37 |
| Recreational Community Center | 495 | 157,181 Square Feet | 4,525 | 184 | 206 | 390 | 91 | 77 | 168 |
| Retail (<40k) | 822 | 6,900 Square Feet | 521 | 30 | 30 | 60 | 23 | 22 | 45 |
| Total Development Trips | | | 5,117 | 226 | 243 | 469 | 132 | 118 | 250 |

**Appendix D** provides the data from the *ITE Trip Generation Manual* that were used to determine the trip generation of the proposed site. The Saturday peak hour trips for the community center are significantly less than the PM peak hour trips. However, it is likely that the proposed development will be heavily utilized on weekends. To provide a conservative analysis, the PM peak hour trip generation was used for both the weekday PM peak hour and Saturday peak hour analysis scenarios.

## 4.4 PROJECT TRIP DISTRIBUTION AND ASSIGNMENT

The estimated trips generated by the proposed development were assigned to the street network based on the trip distributions summarized in **Table 2**. This distribution is based on existing traffic patterns, the surrounding street network, area demographics, and engineering judgement.

**TABLE 2: TRIP DISTRIBUTION**

| Direction To/From | Percentage |
|---|---|
| North on View High Drive | 75% |
| South on View High Drive | 20% |
| East on Chipman Road | 5% |
| Total | 100% |

A large portion of the traffic generated by the development is expected to travel to/from the north on View High Drive to access I-470 and the regional highway network. The detailed distribution patterns through the study intersections are shown on **Exhibit 4**. **Exhibit 5** shows the resulting development trip assignment.

The proposed development trip assignments were added to the Existing Conditions traffic volumes. **Exhibit 6** illustrates the Existing plus Development Conditions peak hour traffic volumes.

# 5.0 ACCESS MANAGEMENT

The City of Lee's Summit *Access Management Code* provides guidance for the design of driveways, access spacing, and the need for turn lanes at intersections. These items are discussed in the following paragraphs.

## 5.1 ACCESS SPACING

The *Access Management Code* does not include minimum spacing requirements for driveways along local streets such as Ashurst Drive. The driveway serving both the sports complex and commercial development is located approximately 275 feet east of the View High Drive & Ashurst Drive intersection and 150 feet west of the Summit Church driveway. The middle driveway serving the sports complex is located approximately 175 feet east of the Summit Church driveway. The proposed driveway on the east side of the development site is located approximately 275 feet east of the middle driveway serving the sports complex.

## 5.2 AUXILIARY TURN LANES

The site is accessed from View High Drive at Ashurst Drive. Currently this intersection allows right-in/right-out access only. Through discussions with Kansas City staff, it was determined that a full-access median break is not desirable because it would be within the upstream functional area of the 109$^{th}$ Street & View High Drive intersection, should it be signalized in the future. The Ashurst Drive intersection is not within the downstream functional area, therefore the southbound left-turn movement could be allowed at View High Drive & Ashurst Drive.

The *Access Management Code* also provides standards for left- and right-turn lanes based on traffic volumes and street classification. According to the *Access Management Code*, left-turn lanes are required at all median openings on roadways with medians. Therefore, a southbound left-turn lane will be required at the View High Drive & Ashurst Drive intersection. The *Access Management Code* states that the minimum length of a left-turn lane is 200 feet plus an appropriate taper at the intersection of an arterial street with a street that is not an arterial street.

The *Access Management Code* requires right-turn lanes on arterial streets at each intersecting street or driveway where the right-turn volume on the major arterial street is projected to be at least 30 vehicles in any hour. The northbound right-turn volume at the View High Drive & Ashurst Drive intersection is expected to exceed 30 vehicles during the PM and Saturday peak hours. Thus, a northbound right-turn lane is warranted at the View High Drive & Ashurst Drive intersection. According to the *Access Management Code*, right-turn lanes are required to have a minimum storage length of 150 feet plus an appropriate taper at the intersection of an arterial street with a street that is not an arterial street.

## 5.3 CIRCULATION IMPROVEMENTS

Since the westbound left-turn movement will not be allowed at the View High Drive & Ashurst Drive intersection, other circulation improvements are necessary to allow site traffic to exit and travel south on View High Drive. Drive B should be constructed to connect from Ashurst Drive to the stub street where the north site drive ends 250 feet south of Chipman Road. This will provide a connection to Chipman Road to provide a circulation route to the signalized View High Drive & Chipman Road intersection.

**Exhibit 7** illustrates the Existing plus Development lane configurations and intersections controls.

# 6.0 INTERSECTION CAPACITY ANALYSIS

## 6.1 LEVEL OF SERVICE OVERVIEW

Intersection capacity analysis was performed at the study intersections for the following scenarios:

- Existing Conditions
- Existing plus Development Conditions

The capacity analysis was performed for the weekday PM and Saturday peak hours using Synchro traffic modeling software to determine intersection delay and level of service (LOS). Calculations were performed based on the methodologies outlined in the *Highway Capacity Manual* (HCM), 7th Edition, which is published by the Transportation Research Board.

LOS is a qualitative measure used by traffic engineers to describe the operations of an intersection. It ranges from A to F, with A being the best and F being the worst level of operation. LOS A conditions are characterized by minimal vehicle delay and free-flow conditions, while LOS F is characterized by long vehicle delay – usually when demand exceeds available roadway capacity. **Table 3** shows the definition of LOS for unsignalized and signalized intersections.

**TABLE 3: LEVEL OF SERVICE**

| Level of Service | Average Control Delay (seconds/vehicle) at: | |
|---|---|---|
| | Unsignalized Intersections | Signalized Intersections |
| A | 0 – 10 | 0 – 10 |
| B | > 10 – 15 | > 10 – 20 |
| C | > 15 – 25 | > 20 – 35 |
| D | > 25 – 35 | > 35 – 55 |
| E | > 35 – 50 | > 55 – 80 |
| F | > 50 | > 80 |

Levels of service are evaluated based on the movement groupings which are required to yield to other traffic. Typically, these are left turns off the major street and the side street approaches for two-way stop-controlled intersections. For signalized intersections each movement grouping is evaluated, and LOS is evaluated for the intersection as a whole.

The City of Lee's Summit has adopted LOS C as the minimum desirable LOS. However, LOS D and E may be considered acceptable for low to moderate traffic volumes, the availability of alternate routes, and the duration of activity resulting in lower LOS.

The volume-to-capacity (v/c) ratio is a secondary measure of intersection performance. The v/c ratio represents the sufficiency of an intersection to accommodate the vehicular demand. A v/c ratio less than 0.85 generally indicates that adequate capacity is available, and vehicles are not expected to experience significant queues and delays. As the v/c ratio approaches 1.0, traffic flow may become unstable, and delay and queuing conditions may occur. Once the demand exceeds the capacity (a v/c ratio greater than 1.0), traffic flow is unstable and excessive delay and queuing is expected.

Traffic queues were also evaluated as part of the analyses. Long traffic queues which extend beyond the amount of storage available, either between intersections or within turn lanes, can have significant impacts

on operations. The 95th percentile vehicular queues were analyzed to ensure the analyses are reflective of the physical constraints of the study intersections and to identify if additional storage is needed for turn lanes. The 95th percentile queue represents the queue length that has only a 5% chance of being exceeded during the analysis period.

## 6.2 EXISTING CONDITIONS ANALYSIS

Capacity analysis was conducted for Existing Conditions at the study intersections to determine baseline conditions for the existing analysis year and to calibrate the models. The analysis was performed for weekday PM and Saturday peak hours and is based on the traffic volumes, lane configurations, and traffic controls shown on **Exhibits 2** and **3**. The Synchro reports are provided in **Appendix E**.

**Table 4** provides a summary of the capacity analysis at the study intersections.

**TABLE 4: EXISTING PEAK HOUR CONDITIONS**

| Intersection | Control | Movement | Operational Analysis Results | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | PM Peak Hour | | | | SAT Peak Hour | | | |
| | | | Delay (sec/veh) | LOS | 95% Queue | v/c | Delay (sec/veh) | LOS | 95% Queue | v/c |
| View High Drive & Ashurst Drive | Side Street Stop | WBR | 13.2 | B | < 50' | 0.02 | 11.1 | B | < 50' | 0.02 |
| View High Drive & Chipman Road | Signalized | WBL | 20.1 | C | 73' | 0.47 | 14.5 | B | < 50' | 0.33 |
| | | WBR | 19.1 | B | < 50' | 0.34 | 13.9 | B | < 50' | 0.24 |
| | | NBT/R | 10.5 | B | 332' | 0.78 | 8.9 | A | 173' | 0.67 |
| | | SBL | 7.0 | A | < 50' | 0.33 | 4.8 | A | < 50' | 0.17 |
| | | SBT/R | 3.7 | A | 206' | 0.58 | 2.9 | A | 72' | 0.35 |
| | | Overall | 7.9 | A | -- | -- | 6.6 | A | -- | -- |
| Chipman Road & Drive B | Side Street Stop | WBL | 7.8 | A | < 50' | 0.01 | 7.6 | A | < 50' | 0.01 |
| | | NBL | 11.2 | A | < 50' | 0.01 | 9.9 | A | < 50' | 0.01 |
| | | NBR | 9.8 | A | < 50' | 0.01 | 9.1 | A | < 50' | 0.01 |

Based on the analysis, the study intersections operate at acceptable levels of service when a traffic signal is installed at the View High Drive & Chipman Road intersection. Some queuing is expected in the northbound and southbound through lanes of View High Drive when the Chipman Road intersection is signalized. The queues are expected to clear with each cycle of the signal, which is indicated by the LOS A and B conditions.

## 6.3 EXISTING PLUS DEVELOPMENT CONDITIONS ANALYSIS

Capacity analysis was conducted for Existing plus Development Conditions at the study intersections to determine the impacts of the proposed site traffic. The analysis was performed for weekday PM and Saturday peak hours and is based on the traffic volumes, lane configurations, and traffic controls shown on **Exhibits 6** and **7**. The Synchro reports are provided in **Appendix E.**

**Table 5** provides a summary of the capacity analysis at the study intersections.

**TABLE 5: EXISTING PLUS DEVELOPMENT PEAK HOUR CONDITIONS**

| Intersection | Control | Movement | Operational Analysis Results | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | PM Peak Hour | | | | SAT Peak Hour | | | |
| | | | Delay (sec/veh) | LOS | 95% Queue | V/C | Delay (sec/veh) | LOS | 95% Queue | V/C |
| View High Drive & Ashurst Drive | Side Street Stop | WBR | 18.3 | C | < 50' | 0.41 | 13.5 | B | < 50' | 0.30 |
| | | SBL | 10.1 | B | < 50' | 0.19 | 9.0 | A | < 50' | 0.15 |
| View High Drive & Chipman Road | Signalized | WBL | 27.6 | C | 151' | 0.67 | 19.0 | B | 83' | 0.53 |
| | | WBR | 24.8 | C | < 50' | 0.43 | 17.4 | B | < 50' | 0.33 |
| | | NBT/R | 12.1 | B | 577' | 0.84 | 10.3 | B | 302' | 0.76 |
| | | SBL | 11.2 | B | 79' | 0.47 | 6.3 | A | < 50' | 0.25 |
| | | SBT/R | 4.7 | A | 384' | 0.68 | 3.4 | A | 139' | 0.45 |
| | | Overall | 10.2 | B | -- | -- | 8.2 | A | -- | -- |
| Chipman Road & Drive B | Side Street Stop | WBL | 7.9 | A | < 50' | 0.01 | 7.7 | A | < 50' | 0.01 |
| | | NBL | 12.7 | B | < 50' | 0.16 | 10.9 | B | < 50' | 0.12 |
| | | NBR | 10.0 | A | < 50' | 0.03 | 9.3 | A | < 50' | 0.02 |

The results in **Table 5** indicate that the study intersections are projected to operate acceptably with the addition of site generated trips from the proposed development and the improvements identified. Some longer queues are projected in the northbound and southbound through lanes of View High Drive. However, the northbound queue does not extend to the intersection with Ashurst Drive. The signalized intersection was analyzed with at 120-second cycle length. A shorter cycle length would reduce queues and improve operations at the intersection.

# 7.0 CONCLUSIONS AND RECOMMENDATIONS

A traffic impact study for the View High Sports Complex development has been prepared by Kimley-Horn. The development is generally located in the northeast and southeast corners of the View High Drive & Ashurst Drive intersection in Lee's Summit, Missouri, adjacent to the city limits. The purpose of this study was to assess the impact of the proposed development on the surrounding transportation system. The following provides a summary of the analysis.

Intersection capacity analysis was performed at the study intersections for the following scenarios:

- Existing Conditions
- Existing plus Development Conditions

The study intersections are projected to operate at acceptable levels of service when a traffic signal is installed at the View High Drive & Chipman Road intersection following completion of the Chipman Road improvements project.

The proposed development is projected to generate 5,117 daily trips, 469 trips during the PM peak hour (226 entering and 243 exiting), and 250 trips during the Saturday peak hour (132 entering and 118 exiting). The Saturday peak hour trips for the community center are significantly less than the PM peak hour trips. However, it is likely that the proposed development will be heavily utilized on weekends. The PM peak hour trips were used to evaluate the Saturday peak hour scenario.

The sports complex portion of the proposed development site will be accessed from three new driveways spaced 350 to 400 feet apart along Ashurst Drive. The commercial site will be accessed by a new driveway along Drive B.

Several improvements are needed at the intersection of View High Drive & Ashurst Drive per the City of Lee's Summit *Access Management* Code to accommodate development traffic. A summary of the improvements at the intersection are listed below:

*View High Drive & Ashurst Drive*

- Construct a median break and a southbound left-turn lane with a minimum storage length of 200 feet plus an appropriate taper.
- Construct a northbound right-turn lane with a minimum storage length of 150 feet plus an appropriate taper.

*Drive B*

- Construct the north/south roadway from Ashurst Drive to connect to the existing stub street 250 feet south of Chipman Road.

The study intersections are projected to operate acceptably with the aforementioned improvements. Some longer queues are projected in the northbound and southbound through lanes of View High Drive. However, the northbound queue does not extend to the intersection with Ashurst Drive.

# APPENDIX

Appendix A: EXHIBITS

Appendix B: TURNING MOVEMENT COUNTS

Appendix C: SITE PLAN

Appendix D: ITE TRIP GENERATION MANUAL SHEETS

Appendix E: SYNCHRO REPORTS

# Appendix A: Exhibits

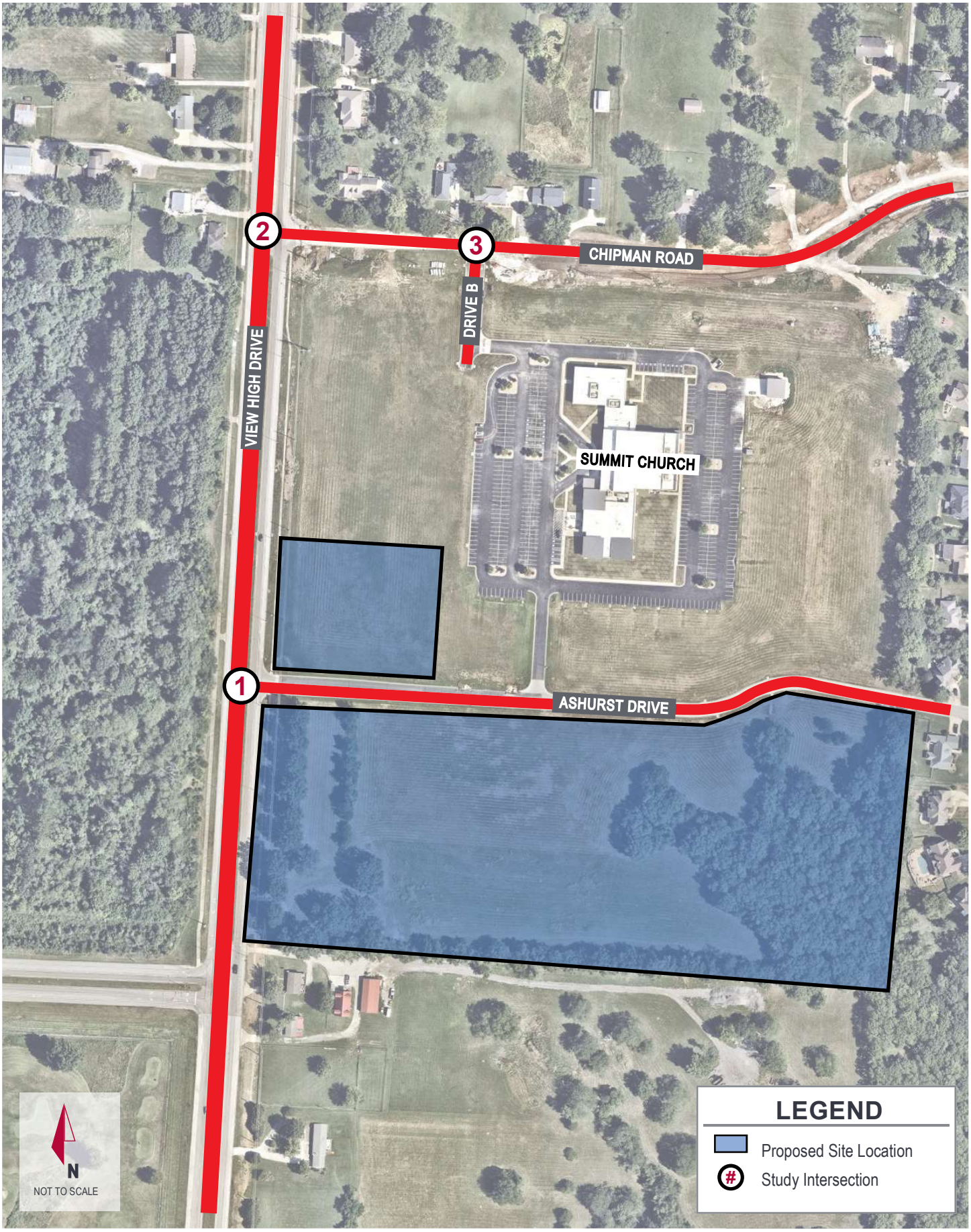


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EXHIBIT 1

**SITE LOCATION AND STUDY AREA**

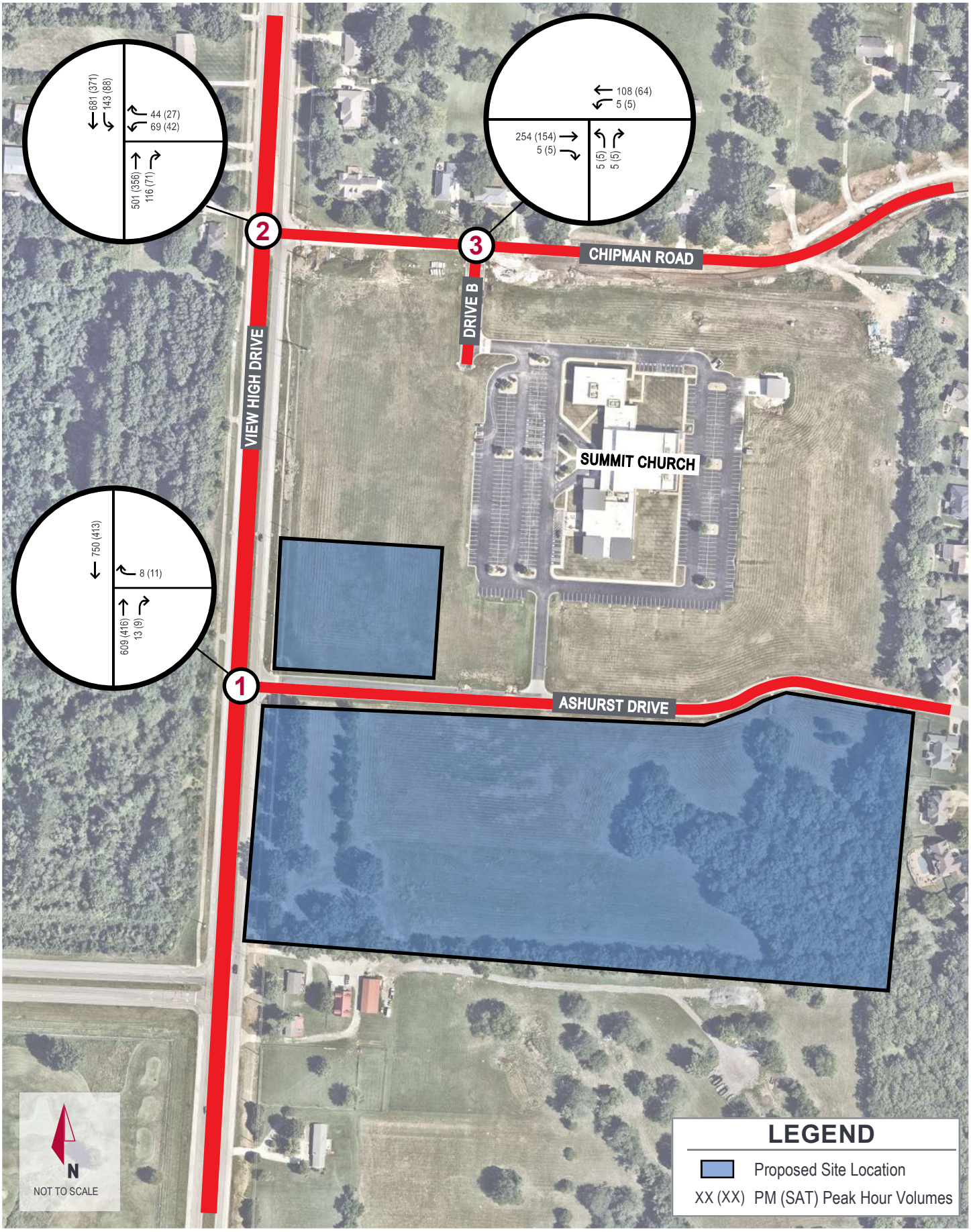


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EXHIBIT 2

# EXISTING CONDITIONS PEAK HOUR TRAFFIC VOLUMES

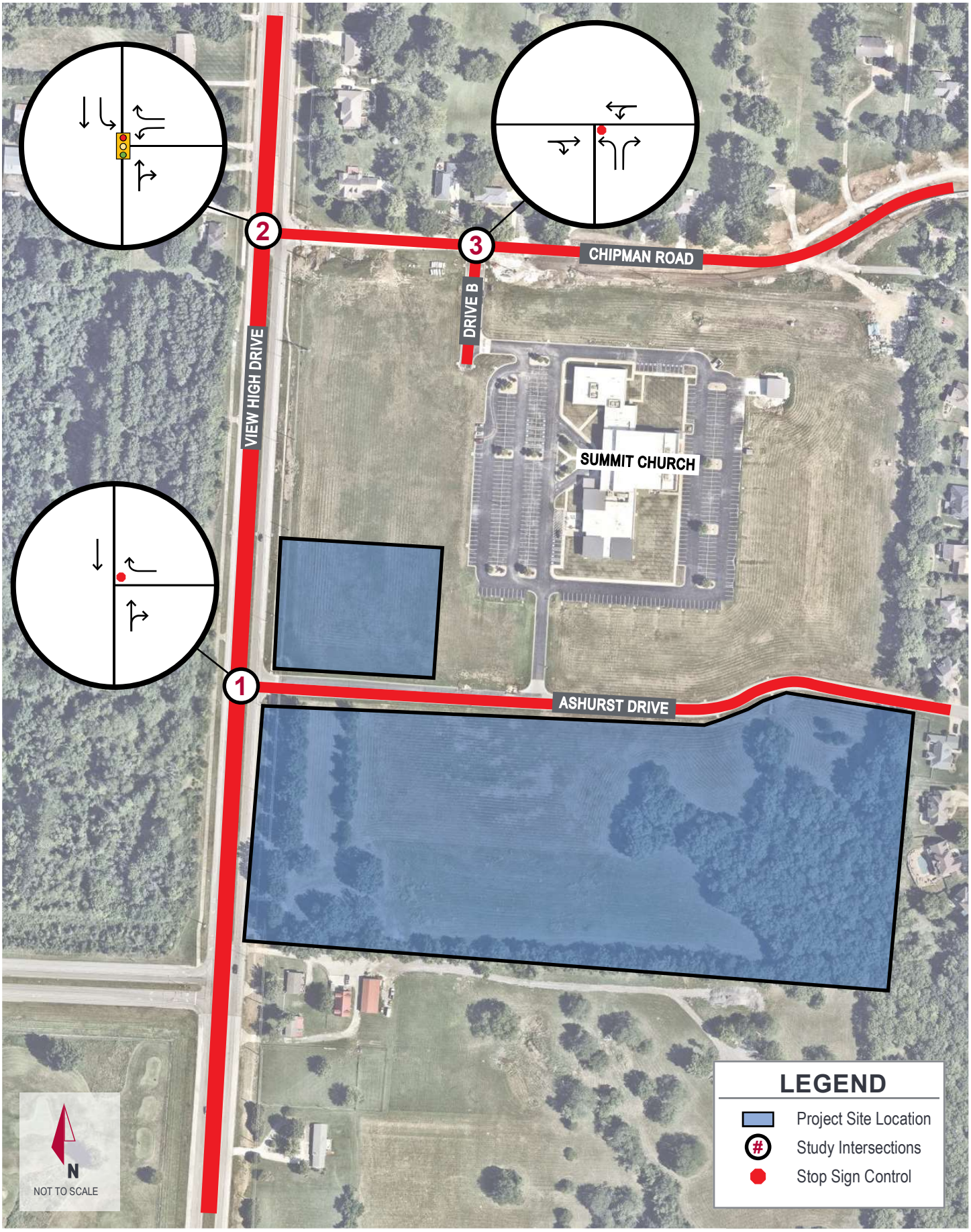


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EXHIBIT 3

# EXISTING GEOMETRY AND INTERSECTION CONTROL

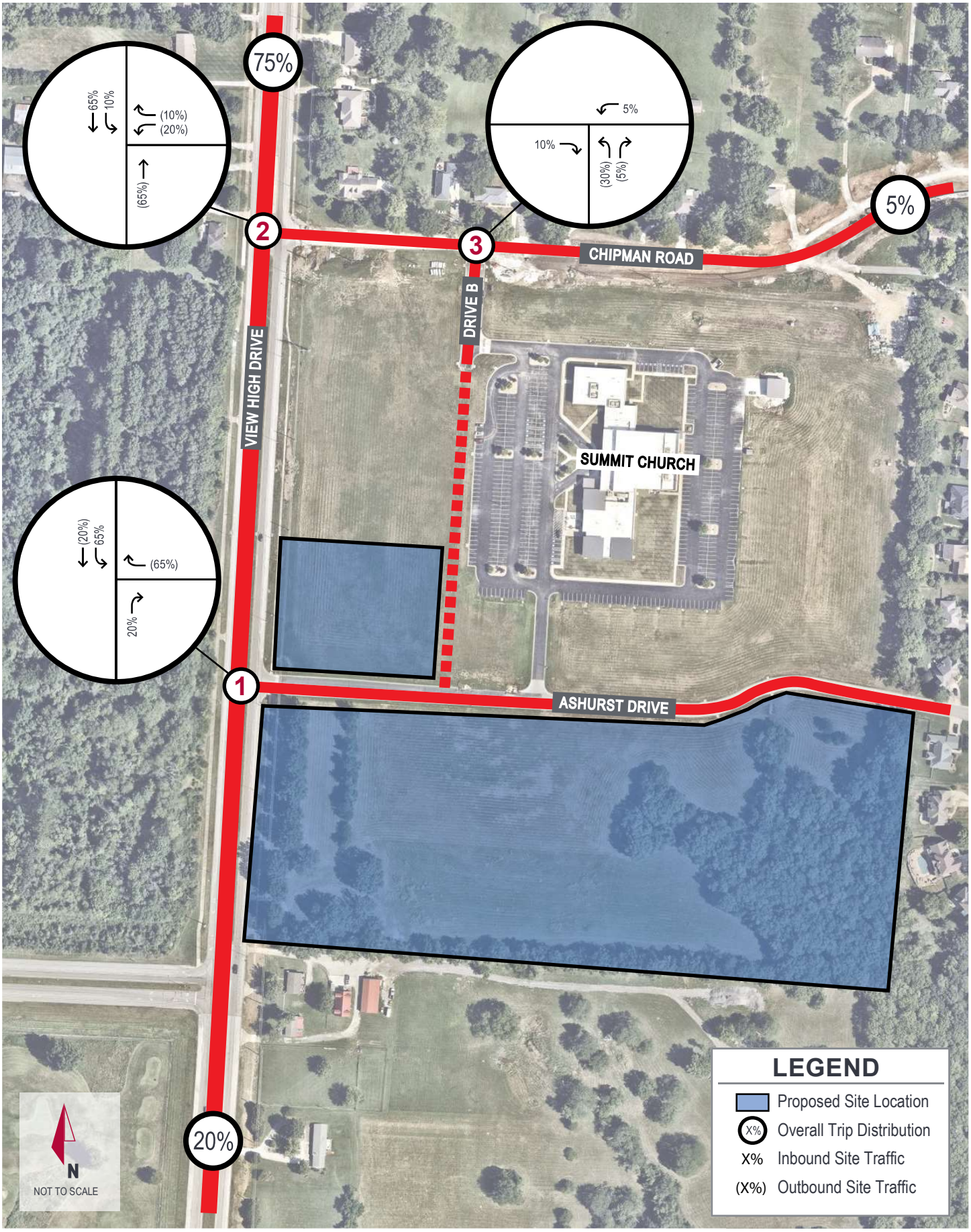


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EXHIBIT 4

**SITE TRIP DISTRIBUTION**

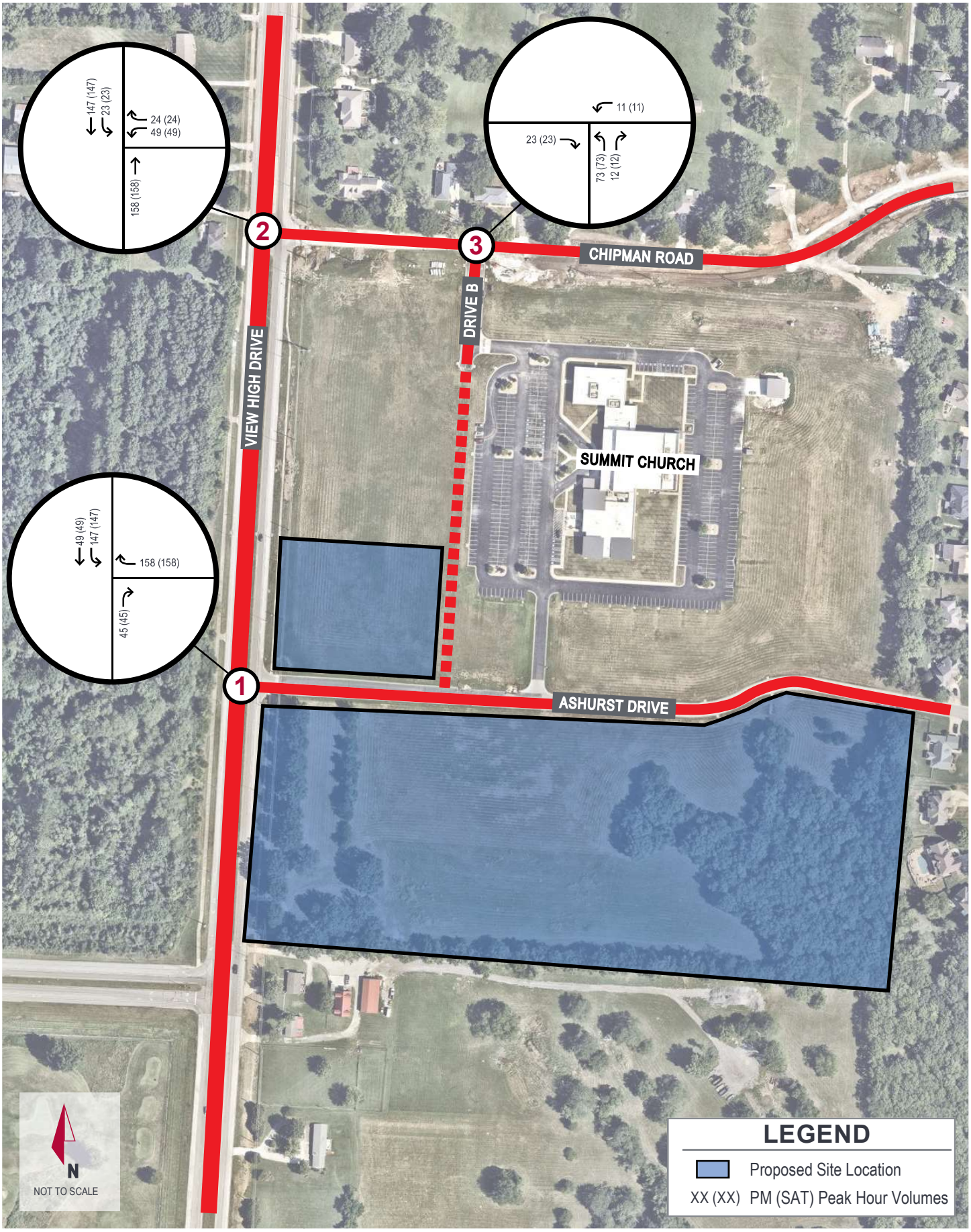


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EXHIBIT 5

**PROJECT TRAFFIC**

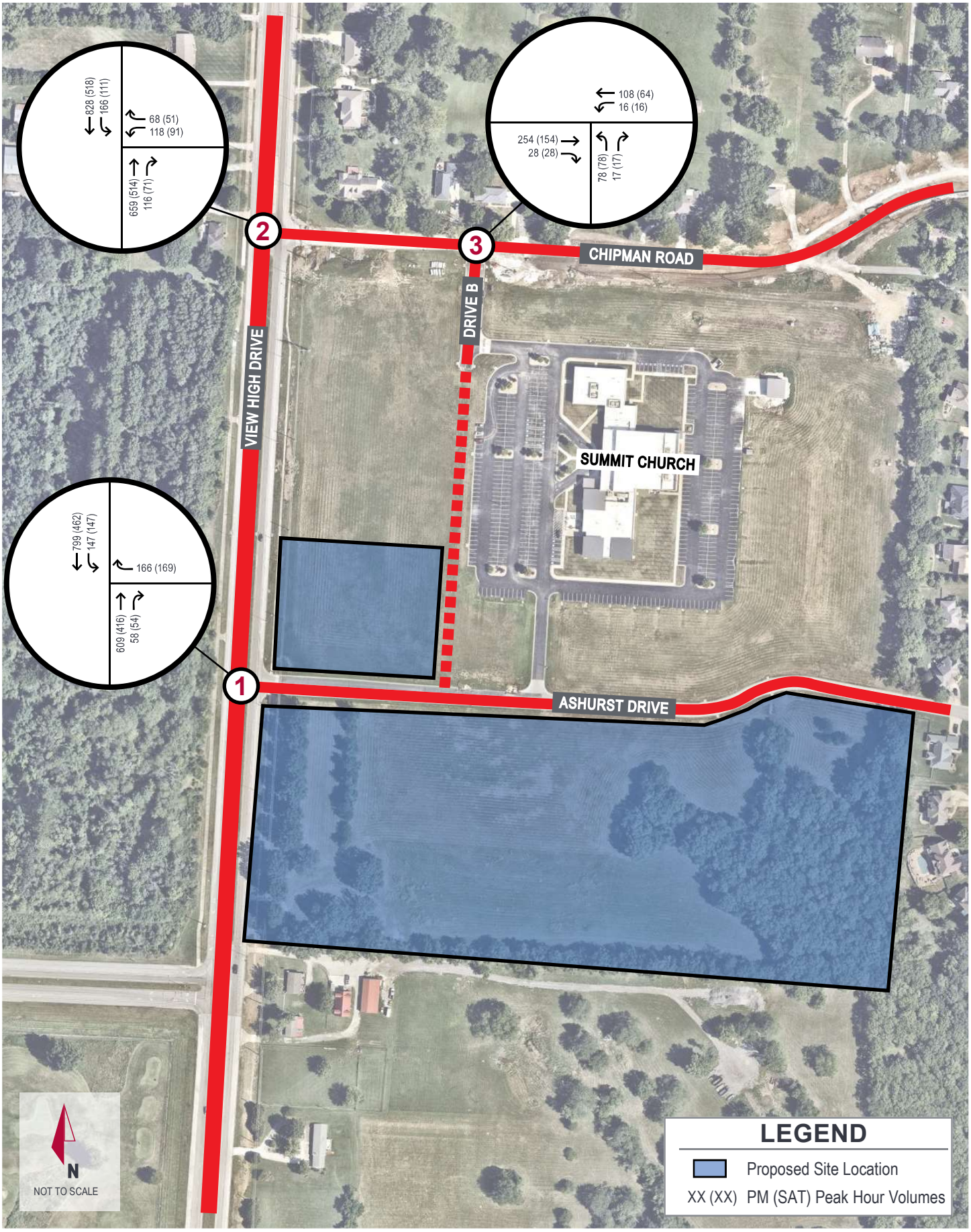


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EXHIBIT 6

# EXISTING PLUS DEVELOPMENT PEAK HOUR TRAFFIC VOLUMES

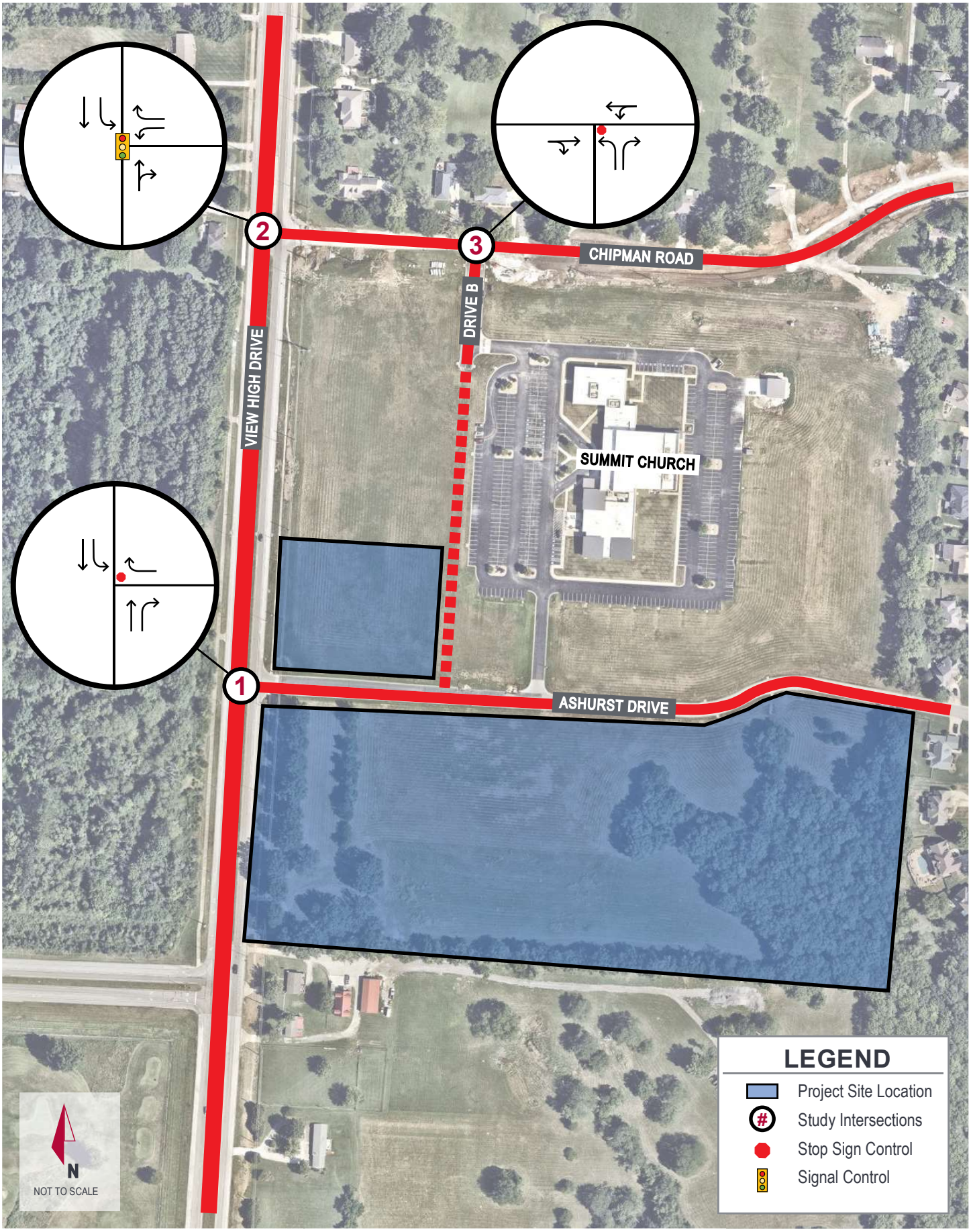


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EXHIBIT 7

**EXISTING PLUS DEVELOPMENT GEOMETRY AND INTERSECTION CONTROL**

# Appendix B: Turning Movement Counts

## View High Drive & Ashurst Drive - TMC

Thu Nov 21, 2024
Full Length (4 PM-6 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 1250051, Location: 38.925565, -94.449988

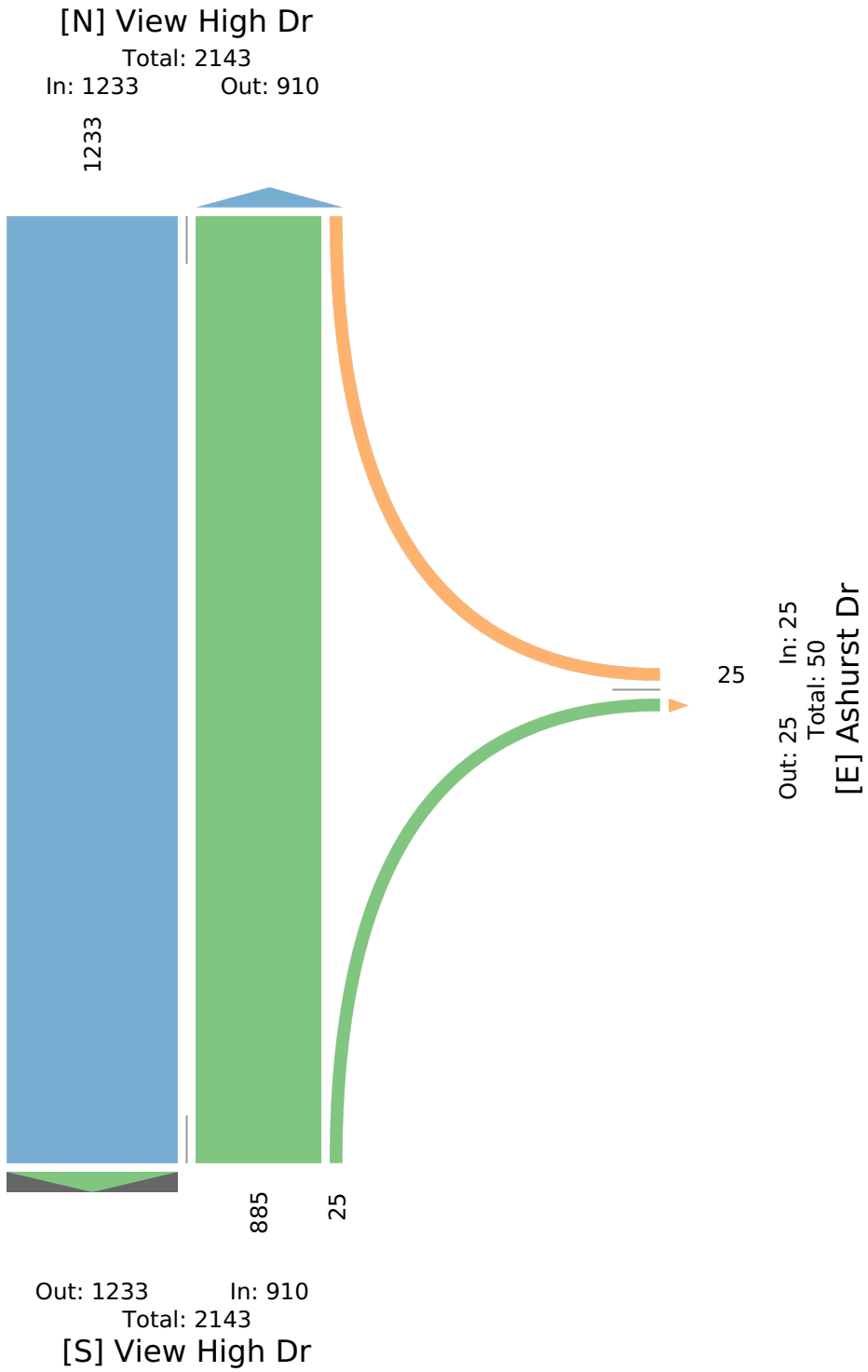
Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

| Leg<br>Direction | Ashurst Dr<br>Westbound | | | | View High Dr<br>Northbound | | | | View High Dr<br>Southbound | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Time | L | R | U | **App** | T | R | U | **App** | L | T | U | **App** | **Int** |
| 2024-11-21 4:00PM | 0 | 4 | 0 | **4** | 93 | 2 | 0 | **95** | 0 | 119 | 0 | **119** | **218** |
| 4:15PM | 0 | 4 | 0 | **4** | 106 | 2 | 0 | **108** | 0 | 139 | 0 | **139** | **251** |
| 4:30PM | 0 | 5 | 0 | **5** | 127 | 4 | 0 | **131** | 0 | 124 | 0 | **124** | **260** |
| 4:45PM | 0 | 3 | 0 | **3** | 111 | 3 | 0 | **114** | 0 | 165 | 0 | **165** | **282** |
| Hourly Total | 0 | 16 | 0 | **16** | 437 | 11 | 0 | **448** | 0 | 547 | 0 | **547** | **1011** |
| 5:00PM | 0 | 1 | 0 | **1** | 147 | 5 | 0 | **152** | 0 | 180 | 0 | **180** | **333** |
| 5:15PM | 0 | 2 | 0 | **2** | 126 | 3 | 0 | **129** | 0 | 171 | 0 | **171** | **302** |
| 5:30PM | 0 | 2 | 0 | **2** | 109 | 2 | 0 | **111** | 0 | 165 | 0 | **165** | **278** |
| 5:45PM | 0 | 4 | 0 | **4** | 66 | 4 | 0 | **70** | 0 | 170 | 0 | **170** | **244** |
| Hourly Total | 0 | 9 | 0 | **9** | 448 | 14 | 0 | **462** | 0 | 686 | 0 | **686** | **1157** |
| **Total** | 0 | 25 | 0 | **25** | 885 | 25 | 0 | **910** | 0 | 1233 | 0 | **1233** | **2168** |
| **% Approach** | 0% | 100% | 0% | **-** | 97.3% | 2.7% | 0% | **-** | 0% | 100% | 0% | **-** | - |
| **% Total** | 0% | 1.2% | 0% | **1.2%** | 40.8% | 1.2% | 0% | **42.0%** | 0% | 56.9% | 0% | **56.9%** | - |
| **Lights** | 0 | 25 | 0 | **25** | 870 | 25 | 0 | **895** | 0 | 1226 | 0 | **1226** | 2146 |
| **% Lights** | 0% | 100% | 0% | **100%** | 98.3% | 100% | 0% | **98.4%** | 0% | 99.4% | 0% | **99.4%** | 99.0% |
| **Articulated Trucks** | 0 | 0 | 0 | **0** | 1 | 0 | 0 | **1** | 0 | 2 | 0 | **2** | 3 |
| **% Articulated Trucks** | 0% | 0% | 0% | **0%** | 0.1% | 0% | 0% | **0.1%** | 0% | 0.2% | 0% | **0.2%** | 0.1% |
| **Buses and Single-Unit Trucks** | 0 | 0 | 0 | **0** | 14 | 0 | 0 | **14** | 0 | 5 | 0 | **5** | 19 |
| **% Buses and Single-Unit Trucks** | 0% | 0% | 0% | **0%** | 1.6% | 0% | 0% | **1.5%** | 0% | 0.4% | 0% | **0.4%** | 0.9% |

*L: Left, R: Right, T: Thru, U: U-Turn

**View High Drive & Ashurst Drive - TMC**
Thu Nov 21, 2024
Full Length (4 PM-6 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 1250051, Location: 38.925565, -94.449988

Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US



## View High Drive & Ashurst Drive - TMC

Thu Nov 21, 2024
PM Peak (4:45 PM - 5:45 PM) - Overall Peak Hour
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 1250051, Location: 38.925565, -94.449988

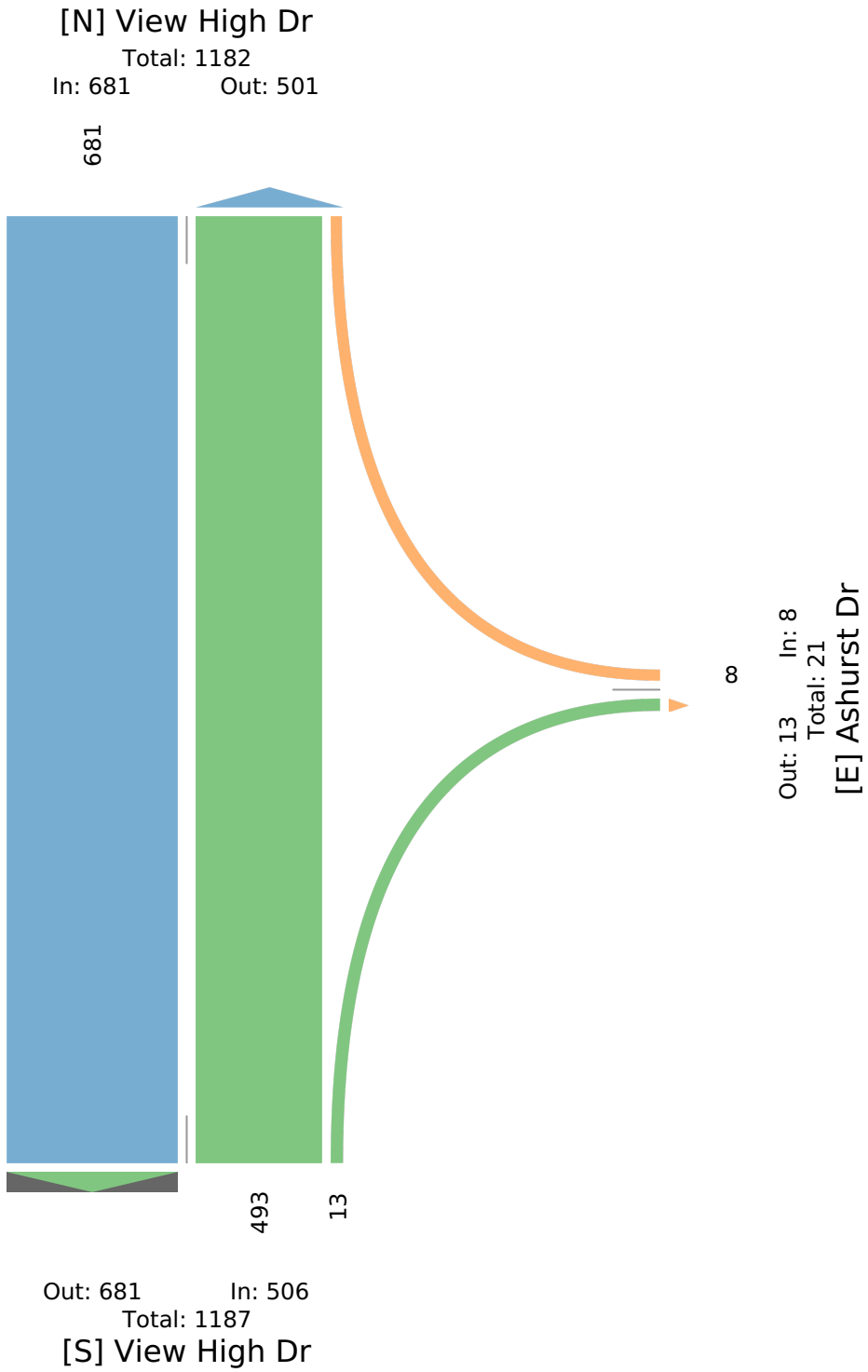
Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

| Leg | Ashurst Dr | | | | View High Dr | | | | View High Dr | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Direction | Westbound | | | | Northbound | | | | Southbound | | | | |
| Time | L | R | U | **App** | T | R | U | **App** | L | T | U | **App** | **Int** |
| 2024-11-21 4:45PM | 0 | 3 | 0 | **3** | 111 | 3 | 0 | **114** | 0 | 165 | 0 | **165** | **282** |
| 5:00PM | 0 | 1 | 0 | **1** | 147 | 5 | 0 | **152** | 0 | 180 | 0 | **180** | **333** |
| 5:15PM | 0 | 2 | 0 | **2** | 126 | 3 | 0 | **129** | 0 | 171 | 0 | **171** | **302** |
| 5:30PM | 0 | 2 | 0 | **2** | 109 | 2 | 0 | **111** | 0 | 165 | 0 | **165** | **278** |
| **Total** | 0 | 8 | 0 | **8** | 493 | 13 | 0 | **506** | 0 | 681 | 0 | **681** | **1195** |
| **% Approach** | 0% | 100% | 0% | **-** | 97.4% | 2.6% | 0% | **-** | 0% | 100% | 0% | **-** | - |
| **% Total** | 0% | 0.7% | 0% | **0.7%** | 41.3% | 1.1% | 0% | **42.3%** | 0% | 57.0% | 0% | **57.0%** | - |
| **PHF** | - | 0.667 | - | **0.667** | 0.838 | 0.650 | - | **0.832** | - | 0.946 | - | **0.946** | 0.897 |
| **Lights** | 0 | 8 | 0 | **8** | 482 | 13 | 0 | **495** | 0 | 677 | 0 | **677** | 1180 |
| **% Lights** | 0% | 100% | 0% | **100%** | 97.8% | 100% | 0% | **97.8%** | 0% | 99.4% | 0% | **99.4%** | 98.7% |
| **Articulated Trucks** | 0 | 0 | 0 | **0** | 1 | 0 | 0 | **1** | 0 | 1 | 0 | **1** | 2 |
| **% Articulated Trucks** | 0% | 0% | 0% | **0%** | 0.2% | 0% | 0% | **0.2%** | 0% | 0.1% | 0% | **0.1%** | 0.2% |
| **Buses and Single-Unit Trucks** | 0 | 0 | 0 | **0** | 10 | 0 | 0 | **10** | 0 | 3 | 0 | **3** | 13 |
| **% Buses and Single-Unit Trucks** | 0% | 0% | 0% | **0%** | 2.0% | 0% | 0% | **2.0%** | 0% | 0.4% | 0% | **0.4%** | 1.1% |

*L: Left, R: Right, T: Thru, U: U-Turn

**View High Drive & Ashurst Drive - TMC**
Thu Nov 21, 2024
PM Peak (4:45 PM - 5:45 PM) - Overall Peak Hour
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 1250051, Location: 38.925565, -94.449988

Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US



## View High Drive & Ashurst Drive - TMC

Sat Nov 23, 2024
Full Length (12 PM-2 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 1250050, Location: 38.925565, -94.449988

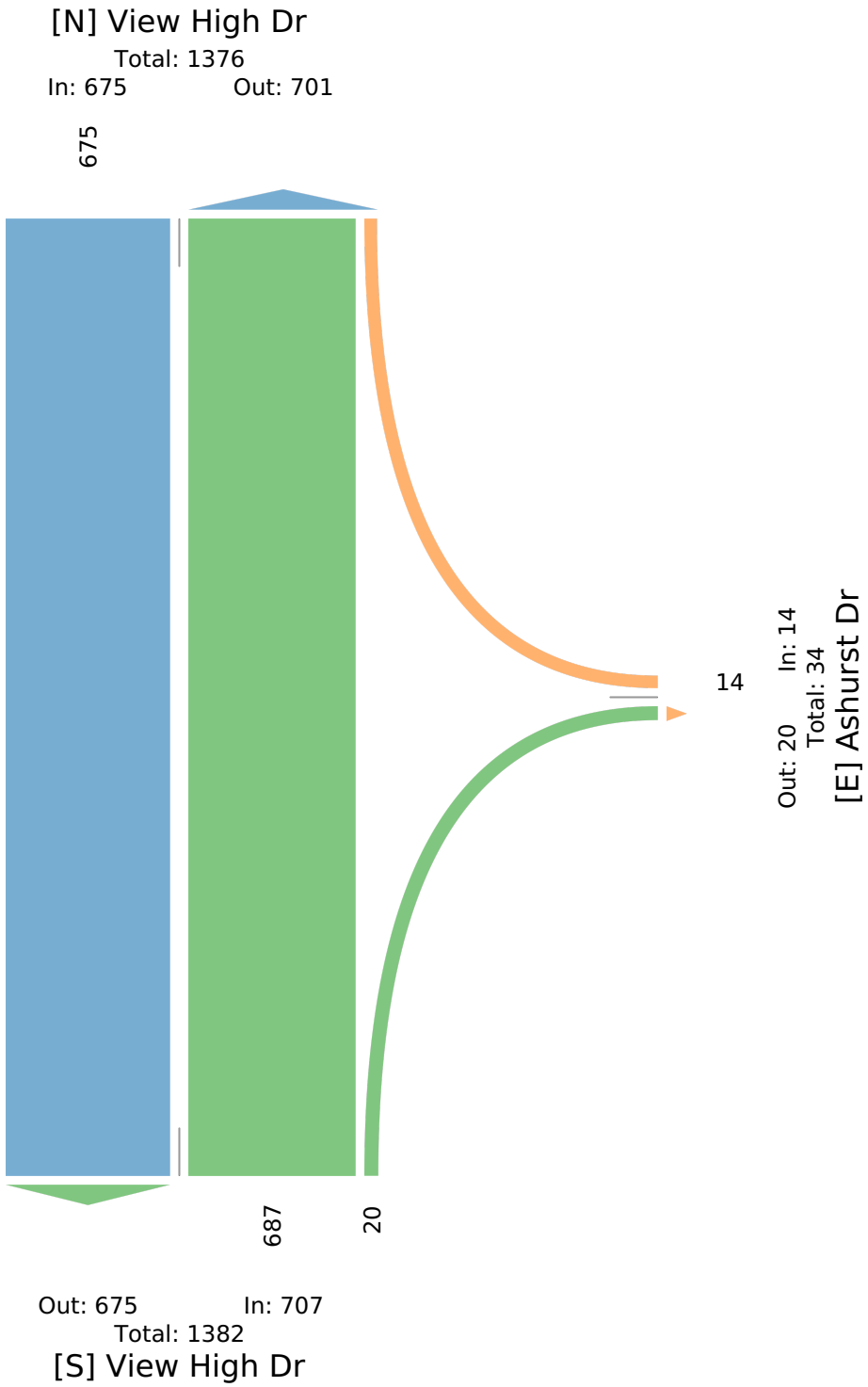
Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

| Leg<br>Direction | Ashurst Dr<br>Westbound | | | | View High Dr<br>Northbound | | | | View High Dr<br>Southbound | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Time | L | R | U | **App** | T | R | U | **App** | L | T | U | **App** | **Int** |
| 2024-11-23 12:00PM | 0 | 2 | 0 | **2** | 83 | 1 | 0 | **84** | 0 | 85 | 0 | **85** | **171** |
| 12:15PM | 0 | 3 | 0 | **3** | 74 | 2 | 0 | **76** | 0 | 108 | 0 | **108** | **187** |
| 12:30PM | 0 | 5 | 0 | **5** | 100 | 3 | 0 | **103** | 0 | 76 | 0 | **76** | **184** |
| 12:45PM | 0 | 1 | 0 | **1** | 81 | 2 | 0 | **83** | 0 | 97 | 0 | **97** | **181** |
| Hourly Total | 0 | 11 | 0 | **11** | 338 | 8 | 0 | **346** | 0 | 366 | 0 | **366** | **723** |
| 1:00PM | 0 | 2 | 0 | **2** | 90 | 2 | 0 | **92** | 0 | 90 | 0 | **90** | **184** |
| 1:15PM | 0 | 1 | 0 | **1** | 104 | 3 | 0 | **107** | 0 | 66 | 0 | **66** | **174** |
| 1:30PM | 0 | 0 | 0 | **0** | 78 | 3 | 0 | **81** | 0 | 70 | 0 | **70** | **151** |
| 1:45PM | 0 | 0 | 0 | **0** | 77 | 4 | 0 | **81** | 0 | 83 | 0 | **83** | **164** |
| Hourly Total | 0 | 3 | 0 | **3** | 349 | 12 | 0 | **361** | 0 | 309 | 0 | **309** | **673** |
| **Total** | 0 | 14 | 0 | **14** | 687 | 20 | 0 | **707** | 0 | 675 | 0 | **675** | **1396** |
| **% Approach** | 0% | 100% | 0% | **-** | 97.2% | 2.8% | 0% | **-** | 0% | 100% | 0% | **-** | - |
| **% Total** | 0% | 1.0% | 0% | **1.0%** | 49.2% | 1.4% | 0% | **50.6%** | 0% | 48.4% | 0% | **48.4%** | - |
| **Lights** | 0 | 14 | 0 | **14** | 685 | 20 | 0 | **705** | 0 | 674 | 0 | **674** | 1393 |
| **% Lights** | 0% | 100% | 0% | **100%** | 99.7% | 100% | 0% | **99.7%** | 0% | 99.9% | 0% | **99.9%** | 99.8% |
| **Articulated Trucks** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 |
| **% Articulated Trucks** | 0% | 0% | 0% | **0%** | 0% | 0% | 0% | **0%** | 0% | 0% | 0% | **0%** | 0% |
| **Buses and Single-Unit Trucks** | 0 | 0 | 0 | **0** | 2 | 0 | 0 | **2** | 0 | 1 | 0 | **1** | 3 |
| **% Buses and Single-Unit Trucks** | 0% | 0% | 0% | **0%** | 0.3% | 0% | 0% | **0.3%** | 0% | 0.1% | 0% | **0.1%** | 0.2% |

*L: Left, R: Right, T: Thru, U: U-Turn

**View High Drive & Ashurst Drive - TMC**
Sat Nov 23, 2024
Full Length (12 PM-2 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 1250050, Location: 38.925565, -94.449988

Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US



## View High Drive & Ashurst Drive - TMC

Sat Nov 23, 2024
Midday Peak (WKND) (12:15 PM - 1:15 PM) - Overall Peak Hour
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 1250050, Location: 38.925565, -94.449988

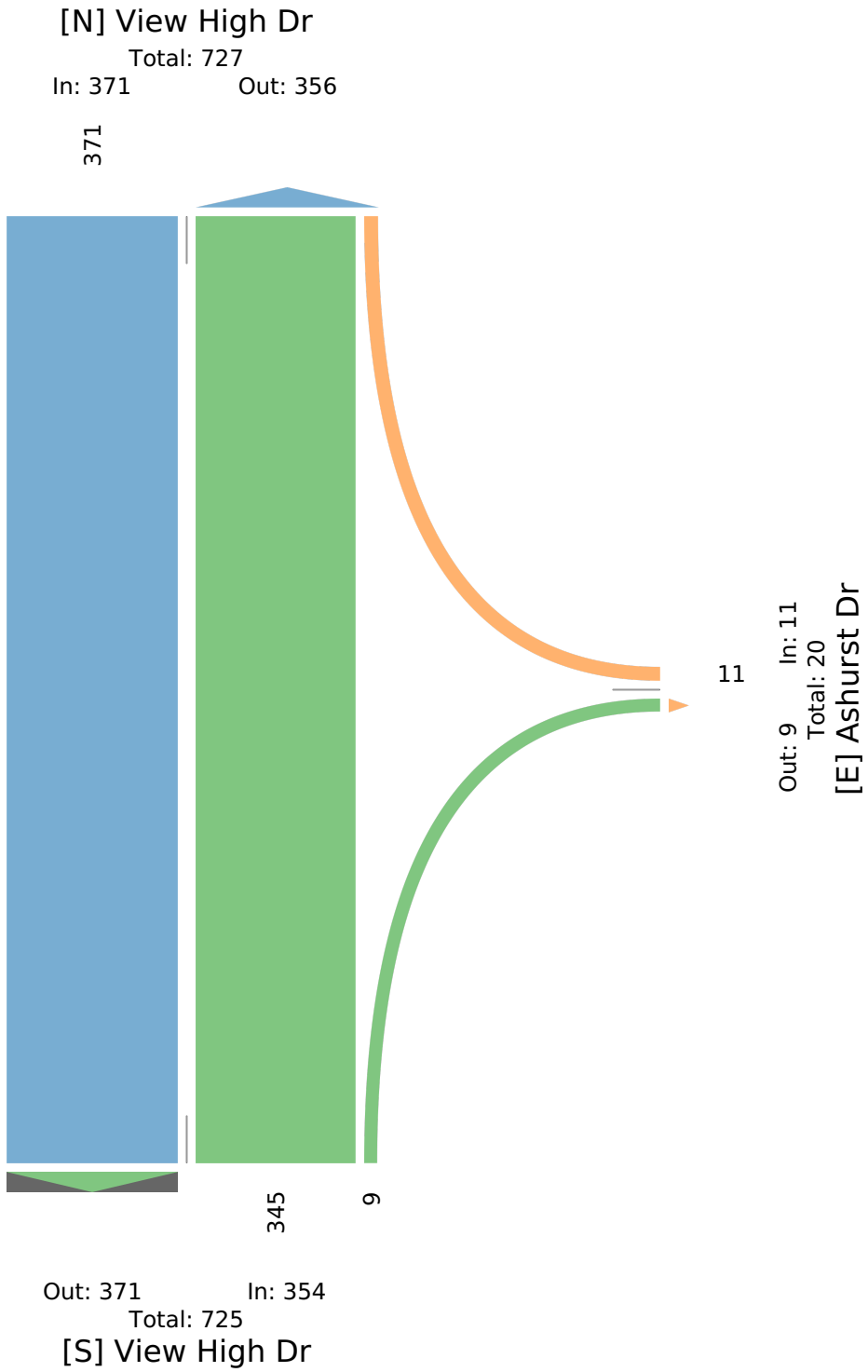
GEWALT HAMILTON ASSOCIATES, INC.
Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

| Leg | Ashurst Dr | | | | View High Dr | | | | View High Dr | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Direction | Westbound | | | | Northbound | | | | Southbound | | | | |
| Time | L | R | U | **App** | T | R | U | **App** | L | T | U | **App** | **Int** |
| 2024-11-23 12:15PM | 0 | 3 | 0 | **3** | 74 | 2 | 0 | **76** | 0 | 108 | 0 | **108** | **187** |
| 12:30PM | 0 | 5 | 0 | **5** | 100 | 3 | 0 | **103** | 0 | 76 | 0 | **76** | **184** |
| 12:45PM | 0 | 1 | 0 | **1** | 81 | 2 | 0 | **83** | 0 | 97 | 0 | **97** | **181** |
| 1:00PM | 0 | 2 | 0 | **2** | 90 | 2 | 0 | **92** | 0 | 90 | 0 | **90** | **184** |
| **Total** | 0 | 11 | 0 | **11** | 345 | 9 | 0 | **354** | 0 | 371 | 0 | **371** | **736** |
| **% Approach** | 0% | 100% | 0% | **-** | 97.5% | 2.5% | 0% | **-** | 0% | 100% | 0% | **-** | - |
| **% Total** | 0% | 1.5% | 0% | **1.5%** | 46.9% | 1.2% | 0% | **48.1%** | 0% | 50.4% | 0% | **50.4%** | - |
| **PHF** | - | 0.550 | - | **0.550** | 0.863 | 0.750 | - | **0.859** | - | 0.859 | - | **0.859** | 0.984 |
| **Lights** | 0 | 11 | 0 | **11** | 345 | 9 | 0 | **354** | 0 | 370 | 0 | **370** | 735 |
| **% Lights** | 0% | 100% | 0% | **100%** | 100% | 100% | 0% | **100%** | 0% | 99.7% | 0% | **99.7%** | 99.9% |
| **Articulated Trucks** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 |
| **% Articulated Trucks** | 0% | 0% | 0% | **0%** | 0% | 0% | 0% | **0%** | 0% | 0% | 0% | **0%** | 0% |
| **Buses and Single-Unit Trucks** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 1 | 0 | **1** | 1 |
| **% Buses and Single-Unit Trucks** | 0% | 0% | 0% | **0%** | 0% | 0% | 0% | **0%** | 0% | 0.3% | 0% | **0.3%** | 0.1% |

*L: Left, R: Right, T: Thru, U: U-Turn

**View High Drive & Ashurst Drive - TMC**
Sat Nov 23, 2024
Midday Peak (WKND) (12:15 PM - 1:15 PM) - Overall Peak Hour
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 1250050, Location: 38.925565, -94.449988

Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US



## View High Drive & Ashurst Drive - TMC

Sat Nov 23, 2024
PM Peak (WKND) (1 PM - 2 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 1250050, Location: 38.925565, -94.449988

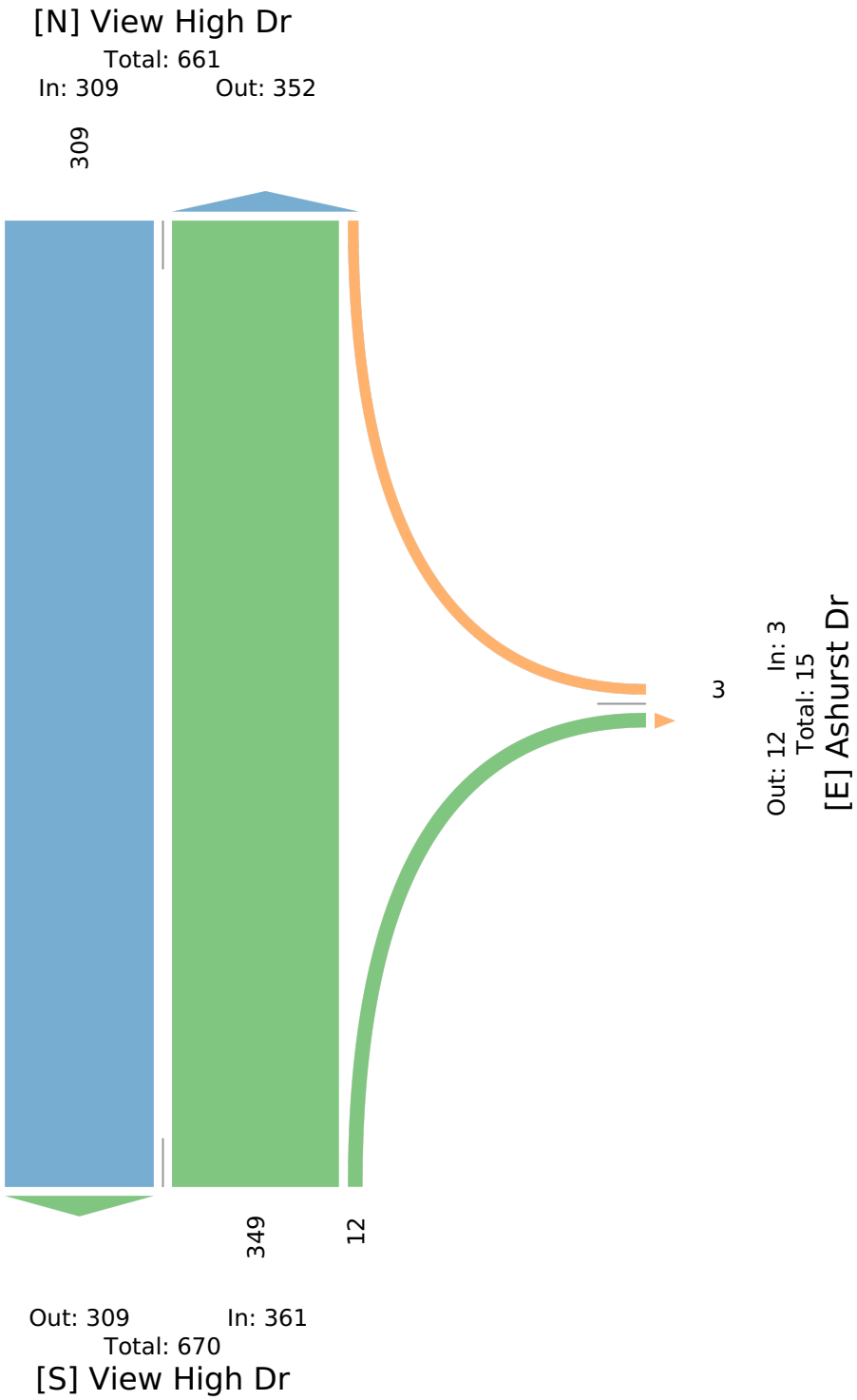
Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

| Leg<br>Direction | Ashurst Dr<br>Westbound | | | | View High Dr<br>Northbound | | | | View High Dr<br>Southbound | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Time | L | R | U | **App** | T | R | U | **App** | L | T | U | **App** | **Int** |
| 2024-11-23 1:00PM | 0 | 2 | 0 | **2** | 90 | 2 | 0 | **92** | 0 | 90 | 0 | **90** | **184** |
| 1:15PM | 0 | 1 | 0 | **1** | 104 | 3 | 0 | **107** | 0 | 66 | 0 | **66** | **174** |
| 1:30PM | 0 | 0 | 0 | **0** | 78 | 3 | 0 | **81** | 0 | 70 | 0 | **70** | **151** |
| 1:45PM | 0 | 0 | 0 | **0** | 77 | 4 | 0 | **81** | 0 | 83 | 0 | **83** | **164** |
| **Total** | 0 | 3 | 0 | **3** | 349 | 12 | 0 | **361** | 0 | 309 | 0 | **309** | **673** |
| **% Approach** | 0% | 100% | 0% | **-** | 96.7% | 3.3% | 0% | **-** | 0% | 100% | 0% | **-** | - |
| **% Total** | 0% | 0.4% | 0% | **0.4%** | 51.9% | 1.8% | 0% | **53.6%** | 0% | 45.9% | 0% | **45.9%** | - |
| **PHF** | - | 0.375 | - | **0.375** | 0.839 | 0.750 | - | **0.843** | - | 0.858 | - | **0.858** | 0.914 |
| **Lights** | 0 | 3 | 0 | **3** | 347 | 12 | 0 | **359** | 0 | 309 | 0 | **309** | 671 |
| **% Lights** | 0% | 100% | 0% | **100%** | 99.4% | 100% | 0% | **99.4%** | 0% | 100% | 0% | **100%** | 99.7% |
| **Articulated Trucks** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 | 0 | 0 | **0** | 0 |
| **% Articulated Trucks** | 0% | 0% | 0% | **0%** | 0% | 0% | 0% | **0%** | 0% | 0% | 0% | **0%** | 0% |
| **Buses and Single-Unit Trucks** | 0 | 0 | 0 | **0** | 2 | 0 | 0 | **2** | 0 | 0 | 0 | **0** | 2 |
| **% Buses and Single-Unit Trucks** | 0% | 0% | 0% | **0%** | 0.6% | 0% | 0% | **0.6%** | 0% | 0% | 0% | **0%** | 0.3% |

*L: Left, R: Right, T: Thru, U: U-Turn

**View High Drive & Ashurst Drive - TMC**
Sat Nov 23, 2024
PM Peak (WKND) (1 PM - 2 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 1250050, Location: 38.925565, -94.449988

Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US



# Appendix C: Site Plan

# VIEW HIGH SPORTS COMPLEX

## Preliminary Development Plan

### Section 3, Township 47 North, Range 32 West

### LEE'S SUMMIT, JACKSON COUNTY, MISSOURI

*PROPERTY DESCRIPTION*

ALL PAVING ON THE PARKING LOT WILL COMPLY WITH THE UNIFIED DEVELOPMENT ORDINANCE ARTICLE 8 IN TERMS OF PAVING THICKNESS AND BASE

**OIL - GAS WELLS**
ACCORDING TO EDWARD ALTON MAY JR'S ENVIRONMENTAL IMPACT STUDY OF ABANDONED OIL AND GAS WELLS IN LEE'S SUMMIT, MISSOURI IN 1995, THERE ARE NOT OIL AND GAS WELLS WITHIN 185 FEET OF THE PROPERTY AS SURVEYED HEREON.

**SURVEY AND PLAT NOTES:**
**THE SUBJECT PROPERTY SURVEYED LIES WITHIN A FLOOD ZONE DESIGNATED ZONE (X), AREAS LOCATED OUTSIDE THE 100 YEAR FLOOD PLAIN, PER F.E.M.A. MAP, COMMUNITY PANEL NO.** 29095C0412G **EFFECTIVE DATE: JANUARY 20, 2017.**

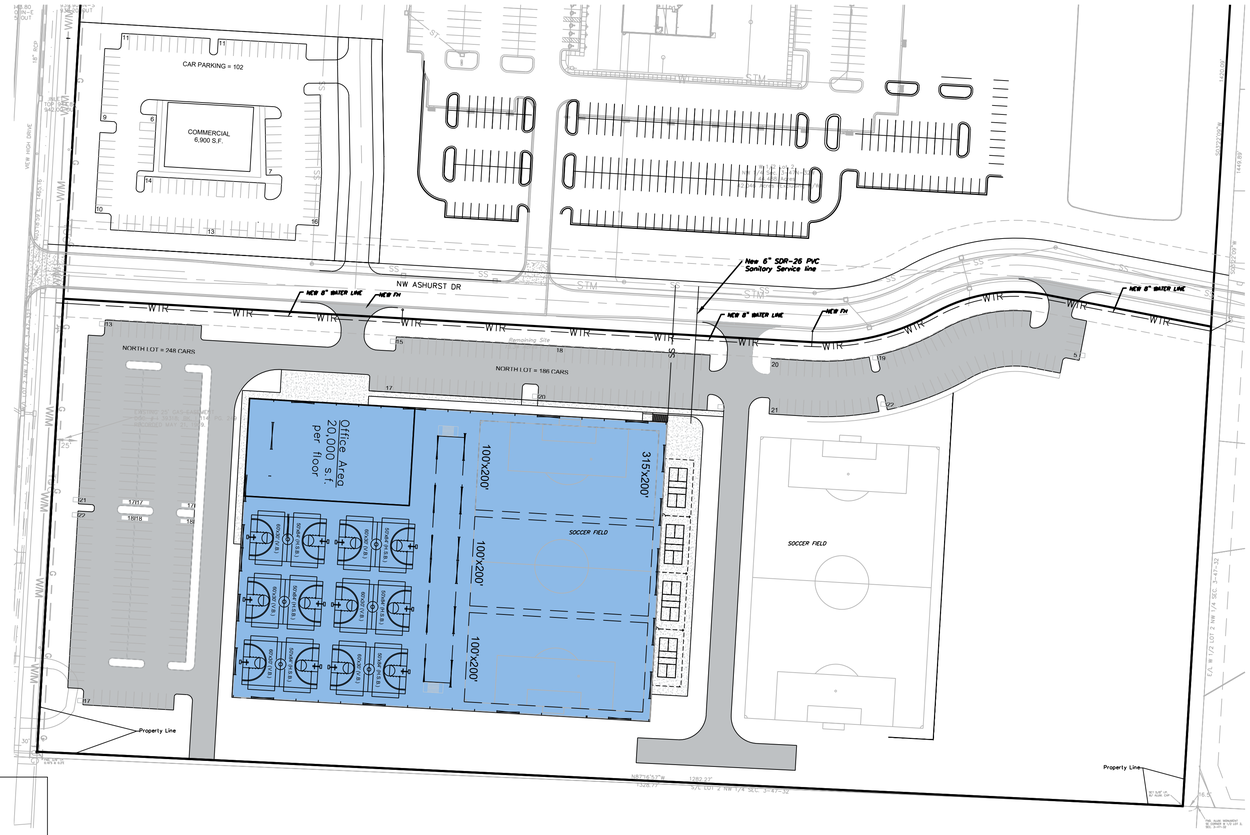
## UTILITY COMPANIES:

THE FOLLOWING LIST OF UTILITY COMPANIES IS PROVIDED FOR INFORMATION ONLY. WE DO NOT OFFER ANY GUARANTEE OR WARRANTY THAT THIS LIST IS COMPLETE OR ACCURATE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING ALL UTILITY COMPANIES THAT MAY BE AFFECTED BY THE PROPOSED CONSTRUCTION AND VERIFYING THE ACTUAL LOCATION OF EACH UTILITY LINE. THE CONTRACTOR SHALL NOTIFY ENGINEERING SOLUTIONS AT 816.623.9888 OF ANY CONFLICT WITH PROPOSED IMPROVEMENTS.

EVERGY ~ 298-1196
MISSOURI GAS ENERGY ~ 756-5261
SOUTHWESTERN BELL TELEPHONE ~ 761-5011
COMCAST CABLE ~ 795-1100
WILLIAMS PIPELINE ~ 422-6300
CITY OF LEE'S SUMMIT PUBLIC WORKS ~ 969-1800
CITY OF LEE'S SUMMIT PUBLIC WORKS INSPECTIONS ~ 969-1800
CITY OF LEE'S SUMMIT WATER UTILITIES ~ 969-1900
MISSOURI ONE CALL (DIG RITE) ~ 1-800-344-7483

## GENERAL NOTES:

1 ~ ALL CONSTRUCTION SHALL CONFORM TO THE CITY OF LEE'S SUMMIT DESIGN AND CONSTRUCTION MANUAL AS ADOPTED BY ORDINANCE 5813.
2 ~ ALL REQUIRED EASEMENTS WITHIN THE BOUNDARY OF THIS PROJECT SHALL BE PROVIDED BY SEPARATE DOCUMENT
3 ~ ANY REQUIRED EASEMENT LOCATED OUTSIDE OF THE BOUNDARY OF THIS PROJECT SHALL BE PROVIDED FOR BY SEPARATE INSTRUMENT PRIOR TO ISSUANCE OF CONSTRUCTION PERMITS.
4 ~ THE CONTRACTOR SHALL CONTACT THE CITY'S DEVELOPMENT SERVICES ENGINEERING INSPECTORS 48 HOURS PRIOR TO ANY LAND DISTURBANCE WORK AT (816) 969-1200.
5 ~ THE CONTRACTOR SHALL NOTIFY ENGINEERING SOLUTIONS AT 816.623.9888 OF ANY CONFLICT WITH THE IMPROVEMENTS PROPOSED BY THESE PLANS AND SITE CONDITIONS.
6 ~ THE CONTRACTOR SHALL NOTIFY THE CITY ENGINEER AND OBTAIN THE APPROPRIATE BLASTING PERMITS FOR A REQUIRED BLASTING. IF BLASTING IS ALLOWED, ALL BLASTING SHALL CONFORM TO STATE REGULATIONS AND LOCAL ORDINANCES.




## SITE LOCATION MAP

SCALE" 1"=50'


..\..\VICINITY MAP.png

*Vicinity Map*

*INDEX OF SHEETS:*



*Site Impervious Area*

| | |
|---|---|
| Total Area | 15.20 acres (661,895.09 sq. ft.) |
| Commercial Office Site | |
| Site Area | 15.20 Acres |
| Building | 157,181 sq. ft. |
| Parking | 144,652 sq. ft |
| Sidewalk | 20,078 sq. ft |
| Impervious Area | 321,911 sq. ft (68.9% of Site) |
| Floor-Area-Ratio | 48.6% |

Parking:
Provided
339 Standard (0 ADA Accessible)

Required
339 Standard (0 ADA Accessible)

Total Parking Spaces 38

Current Zoning: PMIX
Proposed Zoning: PMIX

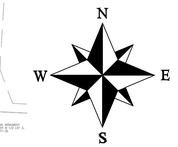
*Site Improvement Notes*

*Sanitary Sewer Improvements*
*~The site will utilize the existing sanitary sewer on the north side of SW Village Park Dr.*

*Water Main Improvements*
*~The site will utilize the existing water on the south side of SW Village Park Dr.*

*Storm Sewer*
*~Enclosed pipe systems and inlets will collect and convey the onsite storm water runoff and direct it toward the existing public storm sewer system.*

*Storm Water Detention*
*~N/A*




LEGEND:

| | |
|---|---|
| Existing Underground Power | UGP |
| Existing Conc. Curb & Gutter | |
| Existing Wood Fence | X |
| Existing Gas Main | GAS |
| Existing Water Main | W |
| Existing Storm Sewer | STM |
| Existing Sanitary Sewer | SAN |
| Existing Underground Telephone | UGT |
| Existing Overhead Power | OHE |
| Proposed Storm Sewer | ST |
| Proposed Sanitary Sewer | SS |
| Proposed Underground Power | UGT |
| Proposed Gas Service | GAS |
| Proposed 8" D.I.P. Water | W |
| Proposed Electrical Service | UGP |

ENGINEERING SOLUTIONS
ENGINEERING & SURVEYING
50 SE 30TH STREET
LEE'S SUMMIT, MO 64082
P:(816) 623-9888 F:(816)623-9849

Professional Registration
Missouri
Engineering 2005032186-D
Surveying 2005008319-D
Kansas
Engineering E-1695
Surveying LS-218
Oklahoma
Engineering 6254
Nebraska
Engineering CA2821

View High Sports Complex
Lee's Summit, Jackson County, Missouri

Project: VIEW HIGH SPORTS COMPLEX, LSMO
Issue Date: June 17, 2024

OVERALL Site Plan PLAN
Construction Plans for:
View High Sports Complex
Lee's Summit, Jackson County, Missouri

STATE OF MISSOURI
MATTHEW J SCHLICHT
NUMBER PE-2006019708
PROFESSIONAL ENGINEER

Matthew J. Schlicht
MO PE 2006019708
KS PE 19071
OK PE 25226

REVISIONS

C.100

# Appendix D: ITE Trip Generation Manual Data

# Land Use: 488
# Soccer Complex

## Description

A soccer complex is an outdoor facility that is used for non-professional soccer games. It may consist of multiple fields. The size of each field within the land use may vary to accommodate games for different age groups. On-site amenities may include stadium seating, a fitness trail, an activities shelter, aquatic center, picnic grounds, basketball and tennis courts, and a playground. Public park (Land Use 411) is a related use.

## Additional Data

***Caution should be used when applying these data. Peaking at soccer complexes typically occurred in time periods shorter than 1 hour. These peaking periods may have durations of 10 to 15 minutes. To assist in the future analysis of this land use, it is important to collect driveway counts in 10-minute intervals.***

The technical appendices provide supporting information on time-of-day distributions for this land use. The appendices can be accessed through either the ITETripGen web app or the trip generation resource page on the ITE website (https://www.ite.org/technical-resources/topics/trip-and-parking-generation/).

The sites were surveyed in the 1990s and the 2010s in California, Colorado, Hawaii, Indiana, New Jersey, and Washington.

## Source Numbers

377, 519, 565, 722, 856, 908, 952, 956, 1004

# Soccer Complex
(488)

**Vehicle Trip Ends vs:** **Fields**
**On a:** **Weekday**

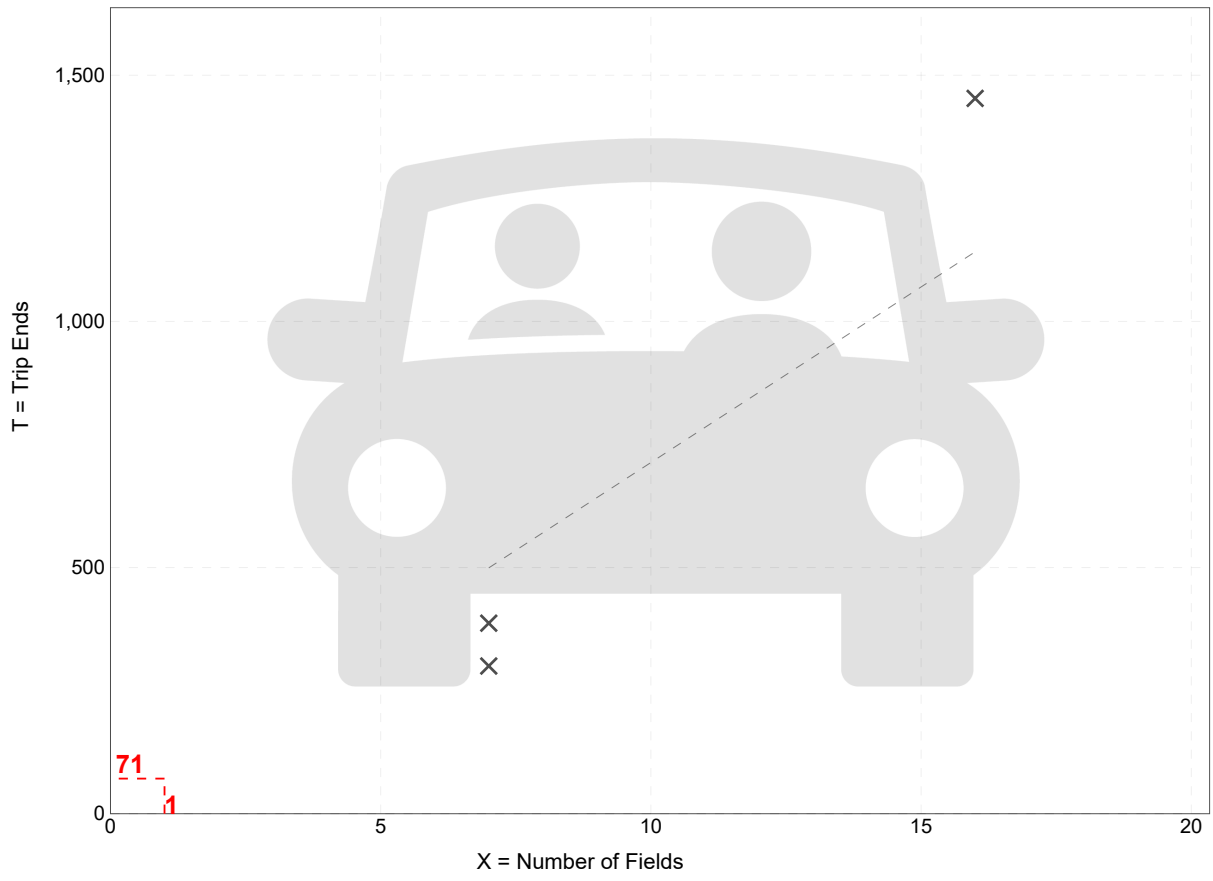
**Setting/Location:** **General Urban/Suburban**
Number of Studies: 3
Avg. Num. of Fields: 10
Directional Distribution: 50% entering, 50% exiting

## Vehicle Trip Generation per Field

| Average Rate | Range of Rates | Standard Deviation |
|---|---|---|
| 71.33 | 42.86 - 90.81 | 26.03 |

## Data Plot and Equation

***Caution – Small Sample Size***




**Fitted Curve Equation: Not Given**

**$R^2$= ****

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# Soccer Complex
(488)

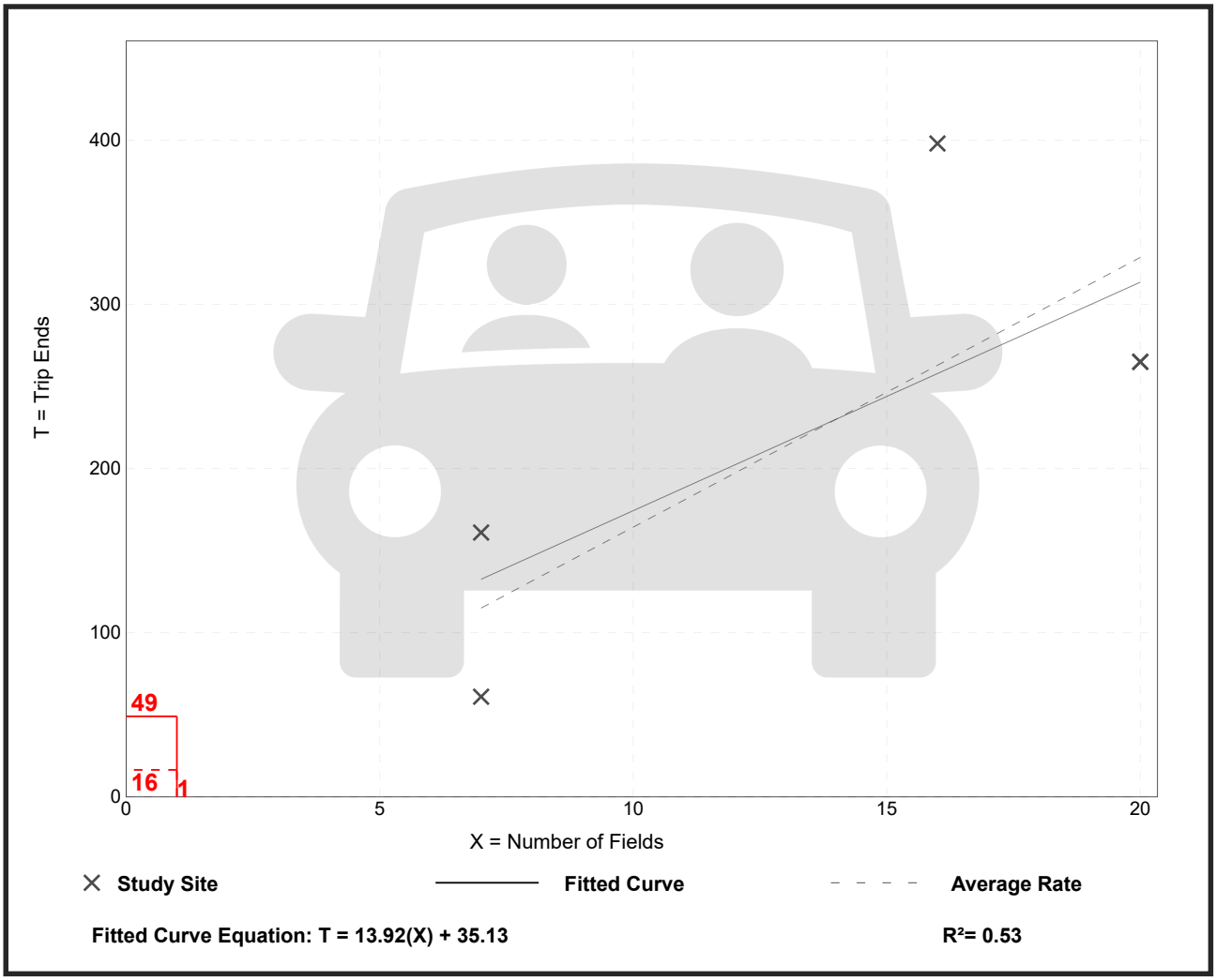
**Vehicle Trip Ends vs:** **Fields**
**On a:** **Weekday,**
**Peak Hour of Adjacent Street Traffic,**
**One Hour Between 4 and 6 p.m.**
**Setting/Location:** **General Urban/Suburban**
Number of Studies: 5
Avg. Num. of Fields: 14
Directional Distribution: 66% entering, 34% exiting

## Vehicle Trip Generation per Field

| Average Rate | Range of Rates | Standard Deviation |
|---|---|---|
| 16.43 | 8.71 - 24.88 | 6.36 |

## Data Plot and Equation

***Caution – Small Sample Size***




**Fitted Curve Equation: T = 13.92(X) + 35.13**

**$R^2$= 0.53**

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# Soccer Complex
(488)

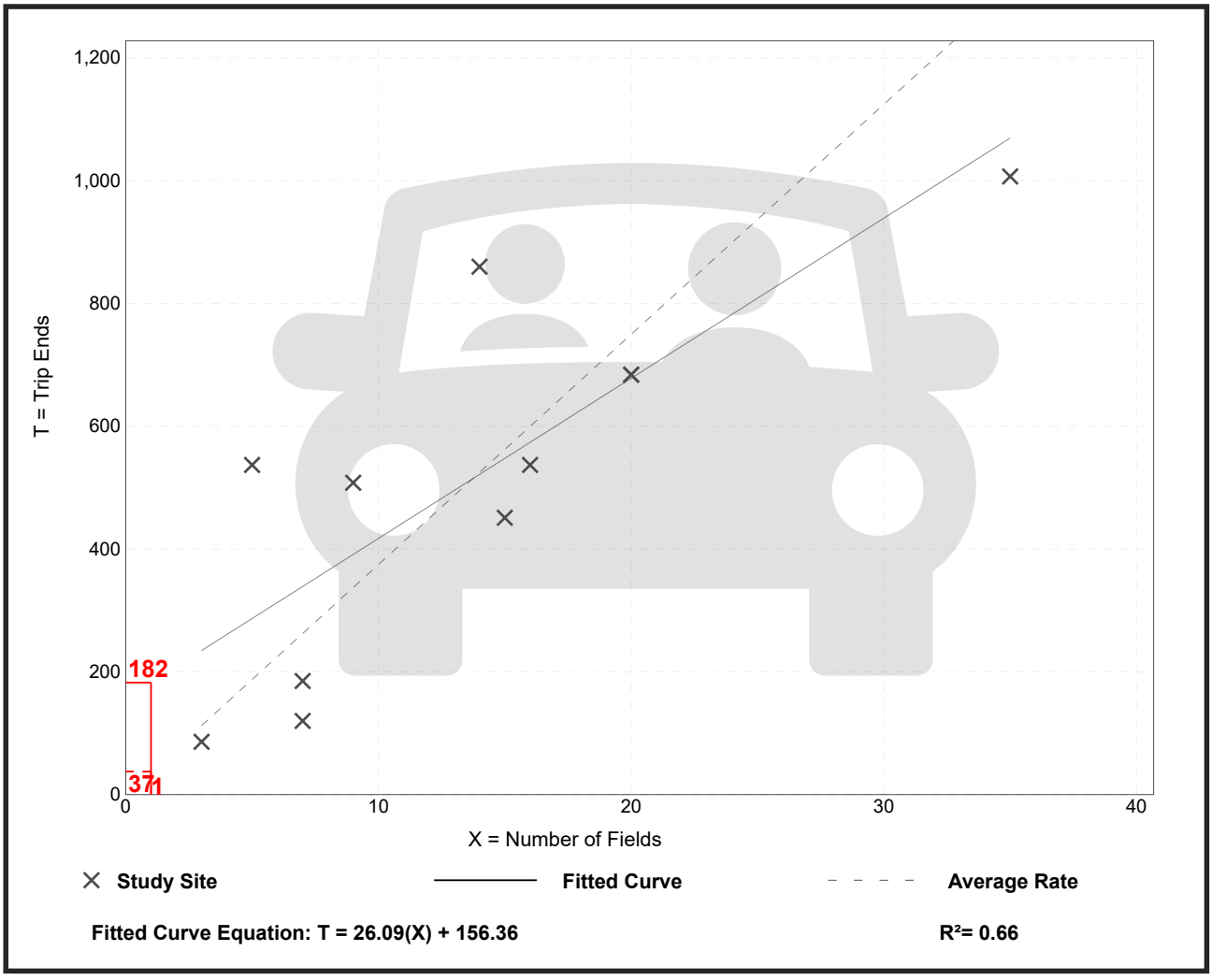
**Vehicle Trip Ends vs:** **Fields**
**On a:** **Saturday, Peak Hour of Generator**

**Setting/Location:** **General Urban/Suburban**
Number of Studies: 11
Avg. Num. of Fields: 14
Directional Distribution: 48% entering, 52% exiting

## Vehicle Trip Generation per Field

| Average Rate | Range of Rates | Standard Deviation |
|---|---|---|
| 37.48 | 17.14 - 107.40 | 17.87 |

## Data Plot and Equation

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# Land Use: 495
# Recreational Community Center

## Description

A recreational community center is a stand-alone public facility similar to and including YMCAs. These facilities often include classes and clubs for adults and children, a day care or nursery school, meeting rooms and other social facilities, swimming pools and whirlpools, saunas, tennis, racquetball, handball, pickle ball, basketball and volleyball courts; outdoor athletic fields/courts, exercise classes, weightlifting and gymnastics equipment, locker rooms, and a restaurant or snack bar. Public access is typically allowed and a membership fee may be charged. Racquet/tennis club (Land Use 491), health/fitness club (Land Use 492), and athletic club (Land Use 493) are related land uses.

## Additional Data

The technical appendices provide supporting information on time-of-day distributions for this land use. The appendices can be accessed through either the ITETripGen web app or the trip generation resource page on the ITE website (https://www.ite.org/technical-resources/topics/trip-and-parking-generation/).

The sites were surveyed in the 1980s, the 1990s, the 2000s, the 2010s, and the 2020s in Alberta (CAN), Arizona, Indiana, Minnesota, New Hampshire, New York, Oregon, Pennsylvania, Tennessee, and Utah.

## Source Numbers

281, 410, 443, 571, 618, 705, 719, 850, 866, 971, 1055

# Recreational Community Center
(495)

**Vehicle Trip Ends vs:** **1000 Sq. Ft. GFA**
**On a:** **Weekday**

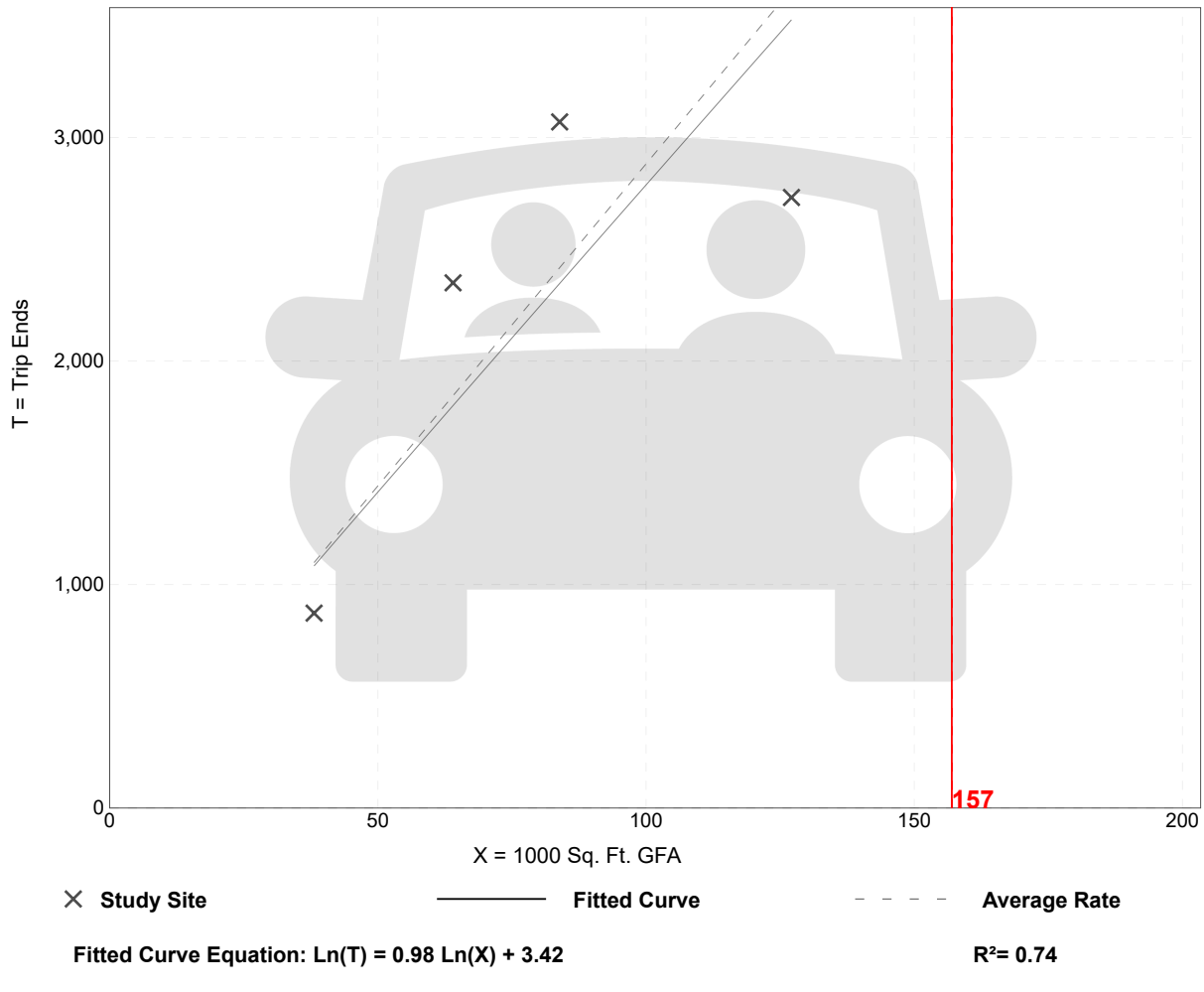
**Setting/Location:** **General Urban/Suburban**
Number of Studies: 4
Avg. 1000 Sq. Ft. GFA: 78
Directional Distribution: 50% entering, 50% exiting

## Vehicle Trip Generation per 1000 Sq. Ft. GFA

| Average Rate | Range of Rates | Standard Deviation |
|---|---|---|
| 28.82 | 21.49 - 36.71 | 8.56 |

## Data Plot and Equation

***Caution – Small Sample Size***




**Fitted Curve Equation: Ln(T) = 0.98 Ln(X) + 3.42**

**$R^2$= 0.74**

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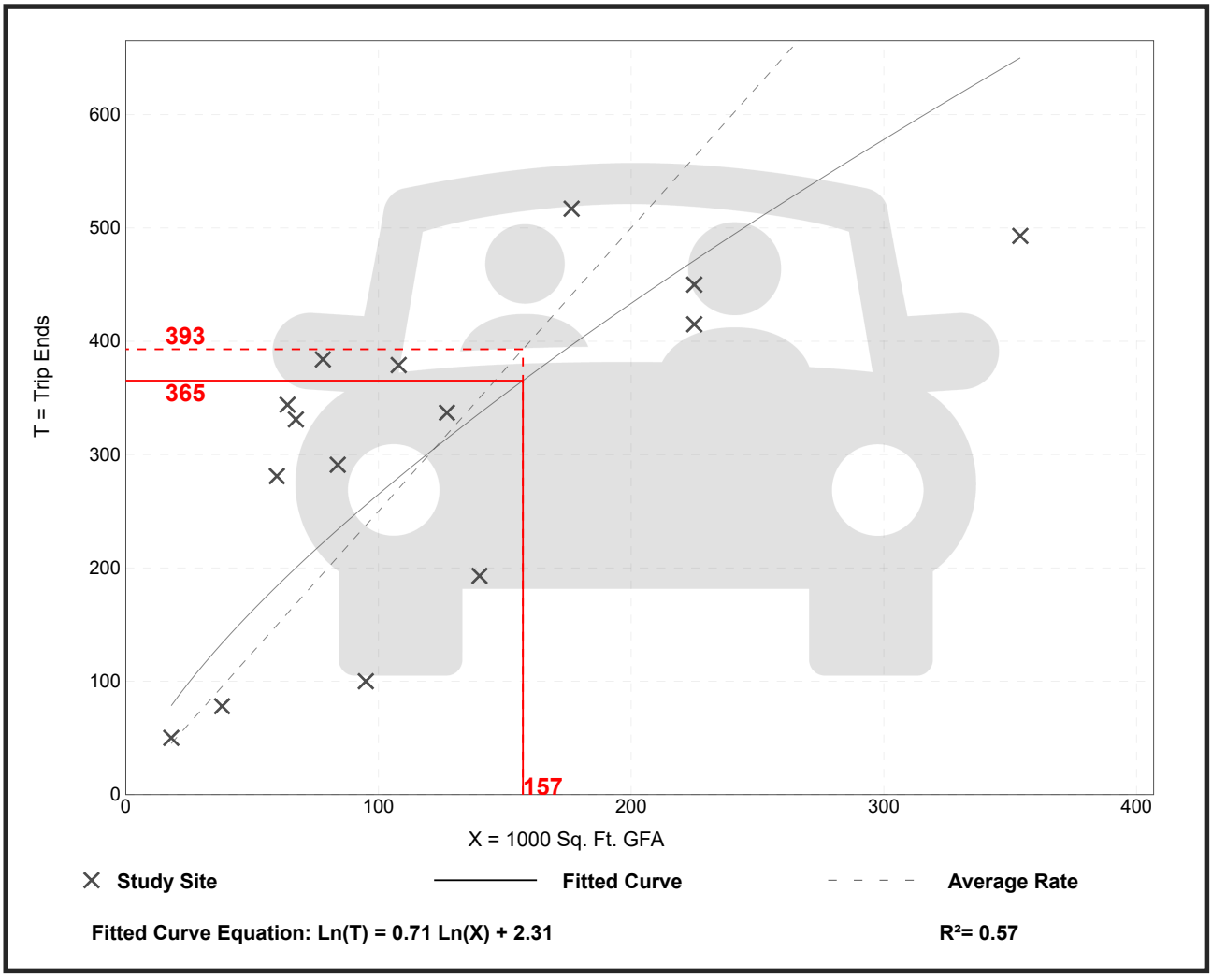
# Recreational Community Center
(495)

**Vehicle Trip Ends vs:** **1000 Sq. Ft. GFA**
**On a:** **Weekday,**
**Peak Hour of Adjacent Street Traffic,**
**One Hour Between 4 and 6 p.m.**
**Setting/Location:** **General Urban/Suburban**
Number of Studies: 15
Avg. 1000 Sq. Ft. GFA: 124
Directional Distribution: 47% entering, 53% exiting

## Vehicle Trip Generation per 1000 Sq. Ft. GFA

| Average Rate | Range of Rates | Standard Deviation |
|---|---|---|
| 2.50 | 1.05 - 5.37 | 1.28 |

## Data Plot and Equation

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# Recreational Community Center
(495)

**Vehicle Trip Ends vs:** **1000 Sq. Ft. GFA**
**On a:** **Saturday, Peak Hour of Generator**

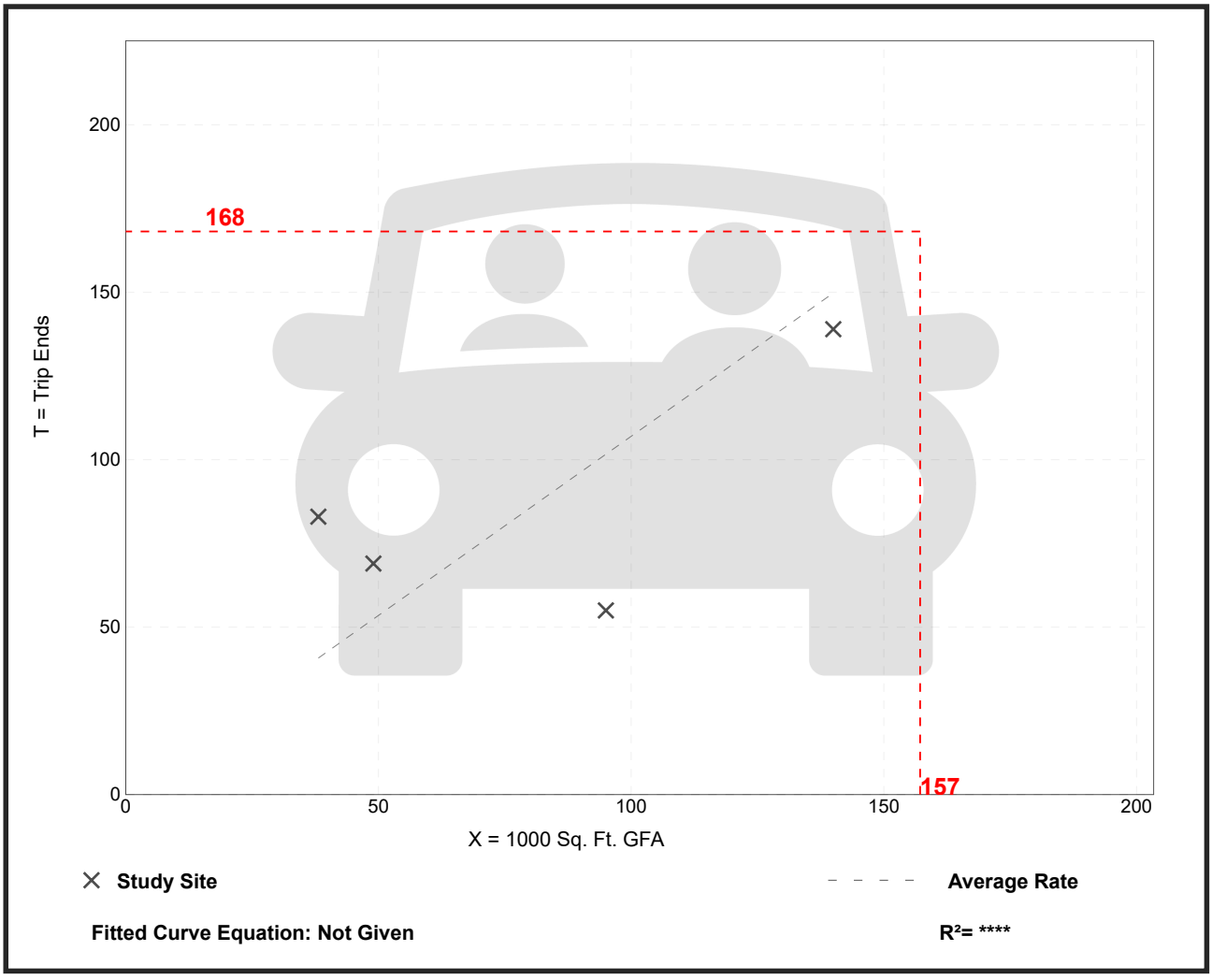
**Setting/Location:** **General Urban/Suburban**
Number of Studies: 4
Avg. 1000 Sq. Ft. GFA: 81
Directional Distribution: 54% entering, 46% exiting

## Vehicle Trip Generation per 1000 Sq. Ft. GFA

| Average Rate | Range of Rates | Standard Deviation |
|---|---|---|
| 1.07 | 0.58 - 2.18 | 0.56 |

## Data Plot and Equation

***Caution – Small Sample Size***

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# Land Use: 822
# Strip Retail Plaza (<40k)

## Description

A strip retail plaza is an integrated group of commercial establishments that is planned, developed, owned, and managed as a unit. Each study site in this land use has less than 40,000 square feet of gross leasable area (GLA). Because a strip retail plaza is open-air, the GLA is the same as the gross floor area of the building.

The 40,000 square feet GFA threshold between strip retail plaza and shopping plaza (Land Use 821) was selected based on an examination of the overall shopping center/plaza database. No shopping plaza with a supermarket as its anchor is smaller than 40,000 square feet GLA.

Shopping center (>150k) (Land use 820), shopping plaza (40-150k) (Land Use 821), and factory outlet center (Land Use 823) are related uses.

## Additional Data

The technical appendices provide supporting information on time-of-day distributions for this land use. The appendices can be accessed through either the ITETripGen web app or the trip generation resource page on the ITE website (https://www.ite.org/technical-resources/topics/trip-and-parking-generation/).

The sites were surveyed in the 1980s, the 1990s, the 2000s, and the 2010s in Alberta (CAN), California, Delaware, Florida, New Jersey, Ontario (CAN), South Dakota, Vermont, Washington, and Wisconsin.

## Source Numbers

304, 358, 423, 428, 437, 507, 715, 728, 936, 960, 961, 974, 1009

# Strip Retail Plaza (<40k)
(822)

**Vehicle Trip Ends vs:** **1000 Sq. Ft. GLA**
**On a:** **Weekday**

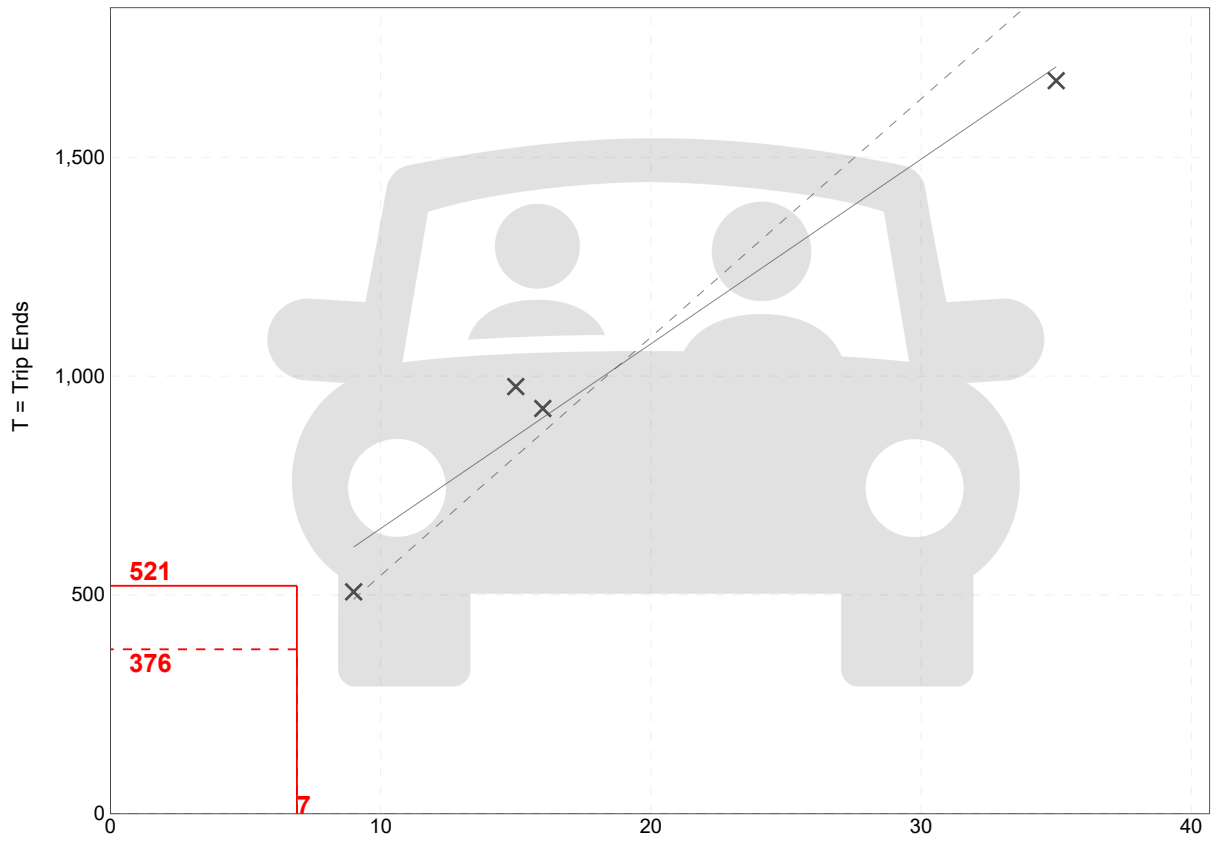
**Setting/Location:** **General Urban/Suburban**
Number of Studies: 4
Avg. 1000 Sq. Ft. GLA: 19
Directional Distribution: 50% entering, 50% exiting

## Vehicle Trip Generation per 1000 Sq. Ft. GLA

| Average Rate | Range of Rates | Standard Deviation |
|---|---|---|
| 54.45 | 47.86 - 65.07 | 7.81 |

## Data Plot and Equation

***Caution – Small Sample Size***




**Fitted Curve Equation: T = 42.20(X) + 229.68**

**$R^2$= 0.96**

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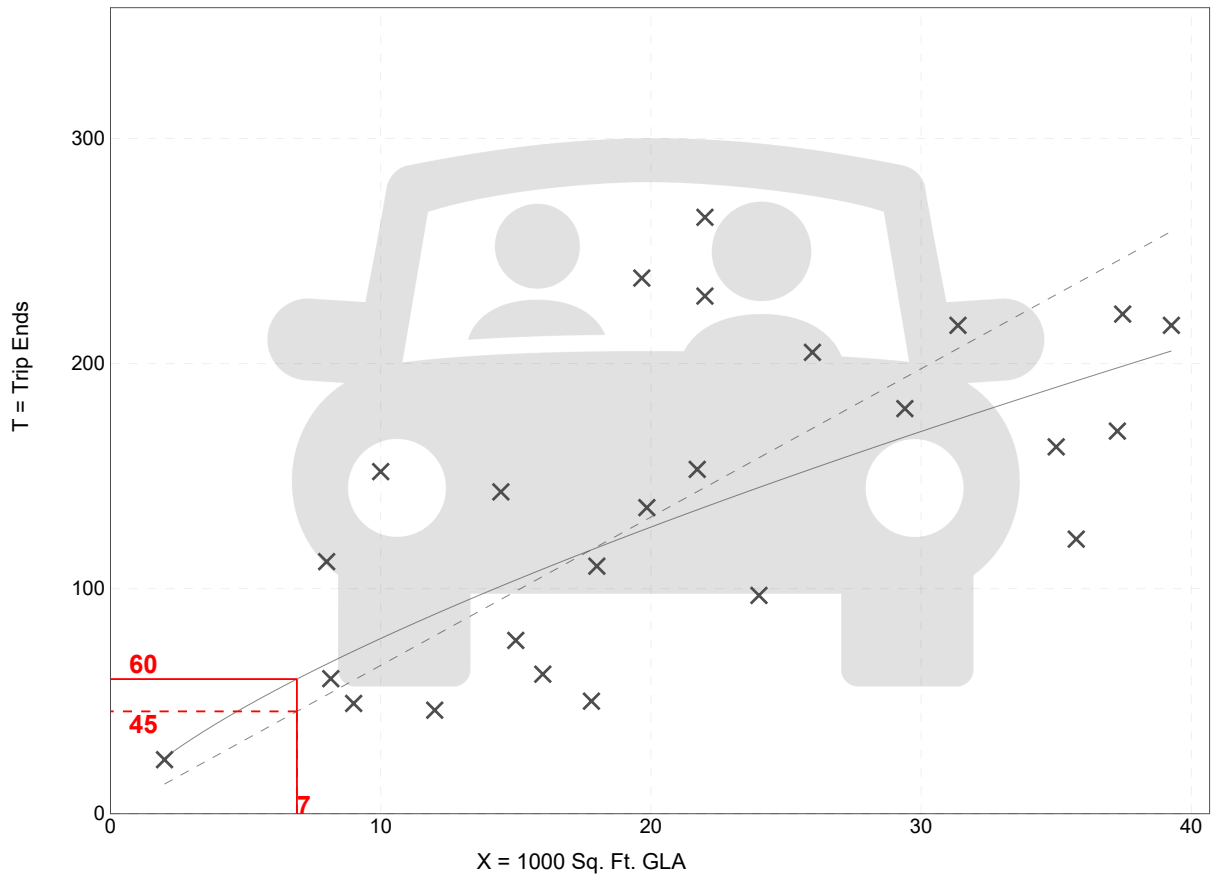
# Strip Retail Plaza (<40k)
(822)

**Vehicle Trip Ends vs:** **1000 Sq. Ft. GLA**
**On a:** **Weekday,**
**Peak Hour of Adjacent Street Traffic,**
**One Hour Between 4 and 6 p.m.**
**Setting/Location:** **General Urban/Suburban**
Number of Studies: 25
Avg. 1000 Sq. Ft. GLA: 21
Directional Distribution: 50% entering, 50% exiting

## Vehicle Trip Generation per 1000 Sq. Ft. GLA

| Average Rate | Range of Rates | Standard Deviation |
|---|---|---|
| 6.59 | 2.81 - 15.20 | 2.94 |

## Data Plot and Equation




**Fitted Curve Equation: Ln(T) = 0.71 Ln(X) + 2.72**

**$R^2$= 0.56**

# Strip Retail Plaza (<40k)
(822)

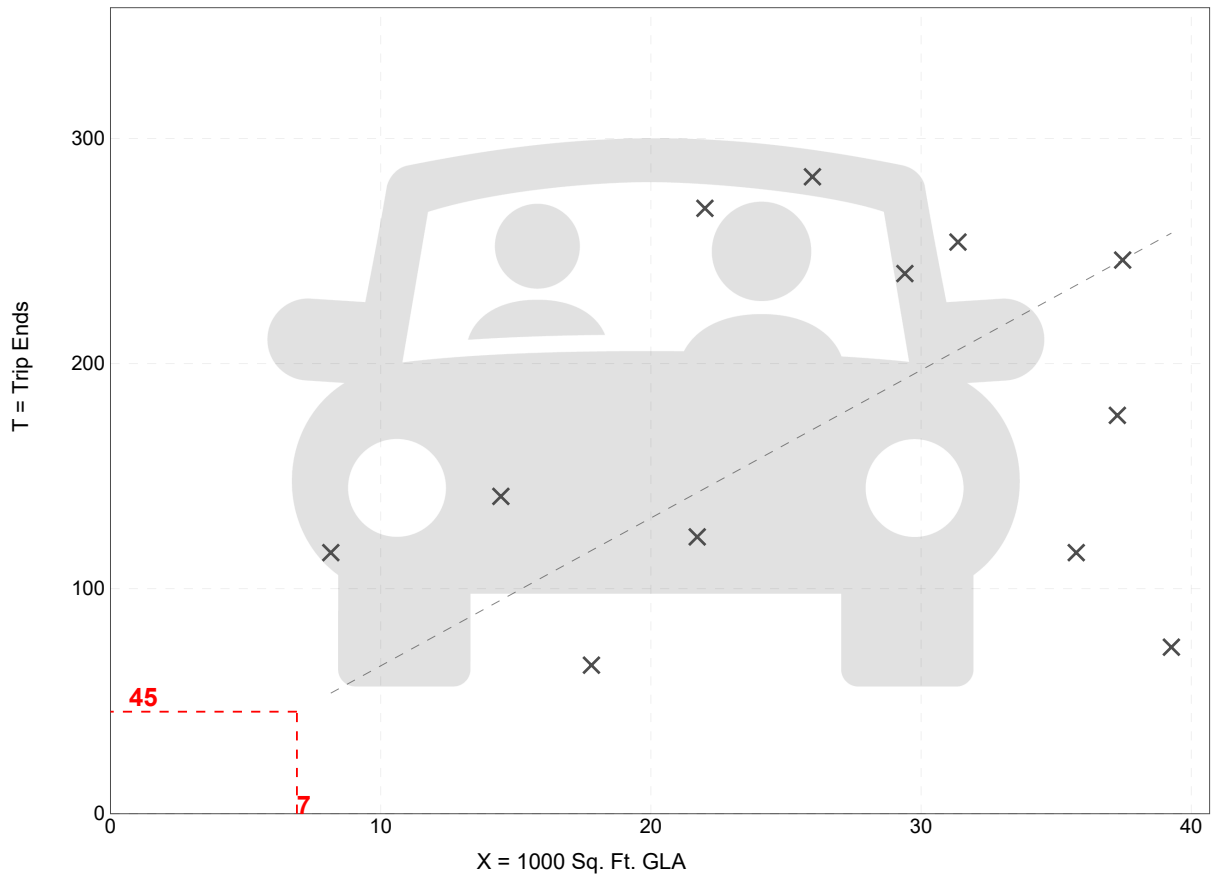
**Vehicle Trip Ends vs:** **1000 Sq. Ft. GLA**
**On a:** **Saturday, Peak Hour of Generator**

**Setting/Location:** **General Urban/Suburban**
Number of Studies: 12
Avg. 1000 Sq. Ft. GLA: 27
Directional Distribution: 51% entering, 49% exiting

## Vehicle Trip Generation per 1000 Sq. Ft. GLA

| Average Rate | Range of Rates | Standard Deviation |
|---|---|---|
| 6.57 | 1.88 - 14.23 | 3.45 |

## Data Plot and Equation




**Fitted Curve Equation: Not Given**

**$R^2$= ****

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# Appendix E: Synchro Reports

| Intersection | |
|---|---|
| Int Delay, s/veh | 0.1 |

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 0 | 8 | 609 | 13 | 0 | 750 |
| Future Vol, veh/h | 0 | 8 | 609 | 13 | 0 | 750 |
| 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 | 90 | 90 | 90 | 90 | 90 | 90 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 0 | 9 | 677 | 14 | 0 | 833 |

| Major/Minor | Minor1 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | - | 684 | 0 | 0 | - | - |
| Stage 1 | - | - | - | - | - | - |
| Stage 2 | - | - | - | - | - | - |
| Critical Hdwy | - | 6.22 | - | - | - | - |
| Critical Hdwy Stg 1 | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - |
| Follow-up Hdwy | - | 3.318 | - | - | - | - |
| Pot Cap-1 Maneuver | 0 | 449 | - | - | 0 | - |
| Stage 1 | 0 | - | - | - | 0 | - |
| Stage 2 | 0 | - | - | - | 0 | - |
| Platoon blocked, % | | | - | - | | - |
| Mov Cap-1 Maneuver | - | 449 | - | - | - | - |
| Mov Cap-2 Maneuver | - | - | - | - | - | - |
| Stage 1 | - | - | - | - | - | - |
| Stage 2 | - | - | - | - | - | - |

| Approach | WB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s/v | 13.19 | 0 | 0 |
| HCM LOS | B | | |

| Minor Lane/Major Mvmt | NBT | NBR | WBLn1 | SBT |
|---|---|---|---|---|
| Capacity (veh/h) | - | - | 449 | - |
| HCM Lane V/C Ratio | - | - | 0.02 | - |
| HCM Control Delay (s/veh) | - | - | 13.2 | - |
| HCM Lane LOS | - | - | B | - |
| HCM 95th %tile Q(veh) | - | - | 0.1 | - |

| Lane Group | WBL | WBR | NBT | SBL | SBT |
|---|---|---|---|---|---|
| Lane Group Flow (vph) | 77 | 49 | 686 | 159 | 757 |
| v/c Ratio | 0.30 | 0.18 | 0.70 | 0.34 | 0.53 |
| Control Delay (s/veh) | 28.9 | 11.0 | 15.9 | 5.0 | 5.8 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay (s/veh) | 28.9 | 11.0 | 15.9 | 5.0 | 5.8 |
| Queue Length 50th (ft) | 23 | 0 | 170 | 13 | 99 |
| Queue Length 95th (ft) | 73 | 29 | 332 | 33 | 206 |
| Internal Link Dist (ft) | 354 | | 846 | | 728 |
| Turn Bay Length (ft) | 150 | | | 175 | |
| Base Capacity (vph) | 655 | 617 | 1798 | 577 | 1863 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.12 | 0.08 | 0.38 | 0.28 | 0.41 |

Intersection Summary

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 69 | 44 | 501 | 116 | 143 | 681 |
| Future Volume (veh/h) | 69 | 44 | 501 | 116 | 143 | 681 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 |
| Lane Width Adj. | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped-Bike Adj(A_pbT) | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | No | | No | | | No |
| Adj Sat Flow, veh/h/ln | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 77 | 49 | 557 | 129 | 159 | 757 |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 164 | 146 | 712 | 165 | 480 | 1296 |
| Arrive On Green | 0.09 | 0.09 | 0.48 | 0.48 | 0.10 | 0.69 |
| Sat Flow, veh/h | 1781 | 1585 | 1469 | 340 | 1781 | 1870 |
| Grp Volume(v), veh/h | 77 | 49 | 0 | 686 | 159 | 757 |
| Grp Sat Flow(s),veh/h/ln | 1781 | 1585 | 0 | 1809 | 1781 | 1870 |
| Q Serve(g_s), s | 1.7 | 1.2 | 0.0 | 13.2 | 1.5 | 8.7 |
| Cycle Q Clear(g_c), s | 1.7 | 1.2 | 0.0 | 13.2 | 1.5 | 8.7 |
| Prop In Lane | 1.00 | 1.00 | | 0.19 | 1.00 | |
| Lane Grp Cap(c), veh/h | 164 | 146 | 0 | 876 | 480 | 1296 |
| V/C Ratio(X) | 0.47 | 0.34 | 0.00 | 0.78 | 0.33 | 0.58 |
| Avail Cap(c_a), veh/h | 873 | 777 | 0 | 3224 | 790 | 4049 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 18.0 | 17.8 | 0.0 | 8.9 | 6.6 | 3.3 |
| Incr Delay (d2), s/veh | 2.1 | 1.3 | 0.0 | 1.6 | 0.4 | 0.4 |
| Initial Q Delay(d3), s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 0.7 | 0.5 | 0.0 | 3.1 | 0.2 | 0.2 |
| Unsig. Movement Delay, s/veh | | | | | | |
| LnGrp Delay(d), s/veh | 20.1 | 19.1 | 0.0 | 10.5 | 7.0 | 3.7 |
| LnGrp LOS | C | B | | B | A | A |
| Approach Vol, veh/h | 126 | | 686 | | | 916 |
| Approach Delay, s/veh | 19.7 | | 10.5 | | | 4.3 |
| Approach LOS | B | | B | | | A |

| Timer - Assigned Phs | 1 | 2 | | | | 6 | 8 |
|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 8.7 | 24.8 | | | | 33.5 | 8.3 |
| Change Period (Y+Rc), s | 4.5 | 4.5 | | | | 4.5 | 4.5 |
| Max Green Setting (Gmax), s | 11.5 | 74.5 | | | | 90.5 | 20.5 |
| Max Q Clear Time (g_c+I1), s | 3.5 | 15.2 | | | | 10.7 | 3.7 |
| Green Ext Time (p_c), s | 0.2 | 5.1 | | | | 5.8 | 0.3 |

| Intersection Summary | |
|---|---|
| HCM 7th Control Delay, s/veh | 7.9 |
| HCM 7th LOS | A |

| Intersection | |
|---|---|
| Int Delay, s/veh | 0.4 |

| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 254 | 5 | 5 | 108 | 5 | 5 |
| Future Vol, veh/h | 254 | 5 | 5 | 108 | 5 | 5 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | - | - | - | 0 | 0 |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 90 | 90 | 90 | 90 | 90 | 90 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 282 | 6 | 6 | 120 | 6 | 6 |

| Major/Minor | Major1 | | Major2 | | Minor1 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 0 | 0 | 288 | 0 | 416 | 285 |
| Stage 1 | - | - | - | - | 285 | - |
| Stage 2 | - | - | - | - | 131 | - |
| Critical Hdwy | - | - | 4.12 | - | 6.42 | 6.22 |
| Critical Hdwy Stg 1 | - | - | - | - | 5.42 | - |
| Critical Hdwy Stg 2 | - | - | - | - | 5.42 | - |
| Follow-up Hdwy | - | - | 2.218 | - | 3.518 | 3.318 |
| Pot Cap-1 Maneuver | - | - | 1274 | - | 593 | 754 |
| Stage 1 | - | - | - | - | 763 | - |
| Stage 2 | - | - | - | - | 895 | - |
| Platoon blocked, % | - | - | | - | | |
| Mov Cap-1 Maneuver | - | - | 1274 | - | 590 | 754 |
| Mov Cap-2 Maneuver | - | - | - | - | 590 | - |
| Stage 1 | - | - | - | - | 763 | - |
| Stage 2 | - | - | - | - | 891 | - |

| Approach | EB | WB | NB |
|---|---|---|---|
| HCM Control Delay, s/v | 0 | 0.35 | 10.48 |
| HCM LOS | | | B |

| Minor Lane/Major Mvmt | NBLn1 | NBLn2 | EBT | EBR | WBL | WBT |
|---|---|---|---|---|---|---|
| Capacity (veh/h) | 590 | 754 | - | - | 80 | - |
| HCM Lane V/C Ratio | 0.009 | 0.007 | - | - | 0.004 | - |
| HCM Control Delay (s/veh) | 11.2 | 9.8 | - | - | 7.8 | 0 |
| HCM Lane LOS | B | A | - | - | A | A |
| HCM 95th %tile Q(veh) | 0 | 0 | - | - | 0 | - |

| Intersection | |
|---|---|
| Int Delay, s/veh | 0.1 |

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 0 | 11 | 416 | 9 | 0 | 413 |
| Future Vol, veh/h | 0 | 11 | 416 | 9 | 0 | 413 |
| 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 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 0 | 12 | 452 | 10 | 0 | 449 |

| Major/Minor | Minor1 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | - | 457 | 0 | 0 | - | - |
| Stage 1 | - | - | - | - | - | - |
| Stage 2 | - | - | - | - | - | - |
| Critical Hdwy | - | 6.22 | - | - | - | - |
| Critical Hdwy Stg 1 | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - |
| Follow-up Hdwy | - | 3.318 | - | - | - | - |
| Pot Cap-1 Maneuver | 0 | 604 | - | - | 0 | - |
| Stage 1 | 0 | - | - | - | 0 | - |
| Stage 2 | 0 | - | - | - | 0 | - |
| Platoon blocked, % | | | - | - | | - |
| Mov Cap-1 Maneuver | - | 604 | - | - | - | - |
| Mov Cap-2 Maneuver | - | - | - | - | - | - |
| Stage 1 | - | - | - | - | - | - |
| Stage 2 | - | - | - | - | - | - |

| Approach | WB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s/v | 11.08 | 0 | 0 |
| HCM LOS | B | | |

| Minor Lane/Major Mvmt | NBT | NBR | WBLn1 | SBT |
|---|---|---|---|---|
| Capacity (veh/h) | - | - | 604 | - |
| HCM Lane V/C Ratio | - | - | 0.02 | - |
| HCM Control Delay (s/veh) | - | - | 11.1 | - |
| HCM Lane LOS | - | - | B | - |
| HCM 95th %tile Q(veh) | - | - | 0.1 | - |

| Lane Group | WBL | WBR | NBT | SBL | SBT |
|---|---|---|---|---|---|
| Lane Group Flow (vph) | 46 | 29 | 464 | 96 | 403 |
| v/c Ratio | 0.16 | 0.10 | 0.45 | 0.15 | 0.27 |
| Control Delay (s/veh) | 19.2 | 9.6 | 10.8 | 3.4 | 3.5 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay (s/veh) | 19.2 | 9.6 | 10.8 | 3.4 | 3.5 |
| Queue Length 50th (ft) | 10 | 0 | 85 | 7 | 35 |
| Queue Length 95th (ft) | 36 | 18 | 173 | 19 | 72 |
| Internal Link Dist (ft) | 354 | | 846 | | 728 |
| Turn Bay Length (ft) | 150 | | | 175 | |
| Base Capacity (vph) | 991 | 898 | 1822 | 829 | 1863 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.05 | 0.03 | 0.25 | 0.12 | 0.22 |

Intersection Summary

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 42 | 27 | 356 | 71 | 88 | 371 |
| Future Volume (veh/h) | 42 | 27 | 356 | 71 | 88 | 371 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 |
| Lane Width Adj. | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped-Bike Adj(A_pbT) | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | No | | No | | | No |
| Adj Sat Flow, veh/h/ln | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 46 | 29 | 387 | 77 | 96 | 403 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 138 | 123 | 574 | 114 | 558 | 1162 |
| Arrive On Green | 0.08 | 0.08 | 0.38 | 0.38 | 0.09 | 0.62 |
| Sat Flow, veh/h | 1781 | 1585 | 1515 | 301 | 1781 | 1870 |
| Grp Volume(v), veh/h | 46 | 29 | 0 | 464 | 96 | 403 |
| Grp Sat Flow(s),veh/h/ln | 1781 | 1585 | 0 | 1816 | 1781 | 1870 |
| Q Serve(g_s), s | 0.7 | 0.5 | 0.0 | 6.4 | 0.8 | 3.1 |
| Cycle Q Clear(g_c), s | 0.7 | 0.5 | 0.0 | 6.4 | 0.8 | 3.1 |
| Prop In Lane | 1.00 | 1.00 | | 0.17 | 1.00 | |
| Lane Grp Cap(c), veh/h | 138 | 123 | 0 | 688 | 558 | 1162 |
| V/C Ratio(X) | 0.33 | 0.24 | 0.00 | 0.67 | 0.17 | 0.35 |
| Avail Cap(c_a), veh/h | 1341 | 1193 | 0 | 4344 | 1140 | 5538 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 13.1 | 13.0 | 0.0 | 7.7 | 4.7 | 2.7 |
| Incr Delay (d2), s/veh | 1.4 | 1.0 | 0.0 | 1.2 | 0.1 | 0.2 |
| Initial Q Delay(d3), s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 0.3 | 0.2 | 0.0 | 1.2 | 0.0 | 0.1 |
| Unsig. Movement Delay, s/veh | | | | | | |
| LnGrp Delay(d), s/veh | 14.5 | 13.9 | 0.0 | 8.9 | 4.8 | 2.9 |
| LnGrp LOS | B | B | | A | A | A |
| Approach Vol, veh/h | 75 | | 464 | | | 499 |
| Approach Delay, s/veh | 14.3 | | 8.9 | | | 3.3 |
| Approach LOS | B | | A | | | A |

| Timer - Assigned Phs | 1 | 2 | | | 6 | 8 |
|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 7.2 | 15.8 | | | 23.1 | 6.8 |
| Change Period (Y+Rc), s | 4.5 | 4.5 | | | 4.5 | 4.5 |
| Max Green Setting (Gmax), s | 12.5 | 71.5 | | | 88.5 | 22.5 |
| Max Q Clear Time (g_c+I1), s | 2.8 | 8.4 | | | 5.1 | 2.7 |
| Green Ext Time (p_c), s | 0.1 | 3.0 | | | 2.4 | 0.2 |

| Intersection Summary | |
|---|---|
| HCM 7th Control Delay, s/veh | 6.6 |
| HCM 7th LOS | A |

| Intersection | |
|---|---|
| Int Delay, s/veh | 0.6 |

| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 154 | 5 | 5 | 64 | 5 | 5 |
| Future Vol, veh/h | 154 | 5 | 5 | 64 | 5 | 5 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | - | - | - | 0 | 0 |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 167 | 5 | 5 | 70 | 5 | 5 |

| Major/Minor | Major1 | | Major2 | | Minor1 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 0 | 0 | 173 | 0 | 251 | 170 |
| Stage 1 | - | - | - | - | 170 | - |
| Stage 2 | - | - | - | - | 80 | - |
| Critical Hdwy | - | - | 4.12 | - | 6.42 | 6.22 |
| Critical Hdwy Stg 1 | - | - | - | - | 5.42 | - |
| Critical Hdwy Stg 2 | - | - | - | - | 5.42 | - |
| Follow-up Hdwy | - | - | 2.218 | - | 3.518 | 3.318 |
| Pot Cap-1 Maneuver | - | - | 1404 | - | 738 | 874 |
| Stage 1 | - | - | - | - | 860 | - |
| Stage 2 | - | - | - | - | 943 | - |
| Platoon blocked, % | - | - | | - | | |
| Mov Cap-1 Maneuver | - | - | 1404 | - | 735 | 874 |
| Mov Cap-2 Maneuver | - | - | - | - | 735 | - |
| Stage 1 | - | - | - | - | 860 | - |
| Stage 2 | - | - | - | - | 939 | - |

| Approach | EB | WB | NB |
|---|---|---|---|
| HCM Control Delay, s/v | 0 | 0.55 | 9.54 |
| HCM LOS | | | A |

| Minor Lane/Major Mvmt | NBLn1 | NBLn2 | EBT | EBR | WBL | WBT |
|---|---|---|---|---|---|---|
| Capacity (veh/h) | 735 | 874 | - | - | 130 | - |
| HCM Lane V/C Ratio | 0.007 | 0.006 | - | - | 0.004 | - |
| HCM Control Delay (s/veh) | 9.9 | 9.1 | - | - | 7.6 | 0 |
| HCM Lane LOS | A | A | - | - | A | A |
| HCM 95th %tile Q(veh) | 0 | 0 | - | - | 0 | - |

| Intersection | |
|---|---|
| Int Delay, s/veh | 2.5 |

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 0 | 166 | 609 | 58 | 147 | 799 |
| Future Vol, veh/h | 0 | 166 | 609 | 58 | 147 | 799 |
| 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 | - | 150 | 200 | - |
| Veh in Median Storage, # | 0 | - | 0 | - | - | 0 |
| Grade, % | 0 | - | 0 | - | - | 0 |
| Peak Hour Factor | 90 | 90 | 90 | 90 | 90 | 90 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 0 | 184 | 677 | 64 | 163 | 888 |

| Major/Minor | Minor1 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | - | 677 | 0 | 0 | 741 | 0 |
| Stage 1 | - | - | - | - | - | - |
| Stage 2 | - | - | - | - | - | - |
| Critical Hdwy | - | 6.22 | - | - | 4.12 | - |
| Critical Hdwy Stg 1 | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - |
| Follow-up Hdwy | - | 3.318 | - | - | 2.218 | - |
| Pot Cap-1 Maneuver | 0 | 453 | - | - | 866 | - |
| Stage 1 | 0 | - | - | - | - | - |
| Stage 2 | 0 | - | - | - | - | - |
| Platoon blocked, % | | | - | - | | - |
| Mov Cap-1 Maneuver | - | 453 | - | - | 866 | - |
| Mov Cap-2 Maneuver | - | - | - | - | - | - |
| Stage 1 | - | - | - | - | - | - |
| Stage 2 | - | - | - | - | - | - |

| Approach | WB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s/v | 18.3 | 0 | 1.57 |
| HCM LOS | C | | |

| Minor Lane/Major Mvmt | NBT | NBR | WBLn1 | SBL | SBT |
|---|---|---|---|---|---|
| Capacity (veh/h) | - | - | 453 | 866 | - |
| HCM Lane V/C Ratio | - | - | 0.407 | 0.189 | - |
| HCM Control Delay (s/veh) | - | - | 18.3 | 10.1 | - |
| HCM Lane LOS | - | - | C | B | - |
| HCM 95th %tile Q(veh) | - | - | 1.9 | 0.7 | - |

| Lane Group | WBL | WBR | NBT | SBL | SBT |
|---|---|---|---|---|---|
| Lane Group Flow (vph) | 131 | 76 | 861 | 184 | 920 |
| v/c Ratio | 0.49 | 0.25 | 0.84 | 0.55 | 0.68 |
| Control Delay (s/veh) | 42.0 | 11.9 | 23.0 | 12.6 | 8.9 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay (s/veh) | 42.0 | 11.9 | 23.0 | 12.6 | 8.9 |
| Queue Length 50th (ft) | 56 | 0 | 299 | 20 | 181 |
| Queue Length 95th (ft) | 151 | 42 | 577 | 79 | 384 |
| Internal Link Dist (ft) | 354 | | 846 | | 728 |
| Turn Bay Length (ft) | 150 | | | 175 | |
| Base Capacity (vph) | 448 | 457 | 1643 | 441 | 1791 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.29 | 0.17 | 0.52 | 0.42 | 0.51 |

Intersection Summary

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 118 | 68 | 659 | 116 | 166 | 828 |
| Future Volume (veh/h) | 118 | 68 | 659 | 116 | 166 | 828 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 |
| Lane Width Adj. | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped-Bike Adj(A_pbT) | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | No | | No | | | No |
| Adj Sat Flow, veh/h/ln | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 131 | 76 | 732 | 129 | 184 | 920 |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 197 | 175 | 870 | 153 | 389 | 1361 |
| Arrive On Green | 0.11 | 0.11 | 0.56 | 0.56 | 0.08 | 0.73 |
| Sat Flow, veh/h | 1781 | 1585 | 1548 | 273 | 1781 | 1870 |
| Grp Volume(v), veh/h | 131 | 76 | 0 | 861 | 184 | 920 |
| Grp Sat Flow(s),veh/h/ln | 1781 | 1585 | 0 | 1821 | 1781 | 1870 |
| Q Serve(g_s), s | 3.9 | 2.5 | 0.0 | 21.8 | 2.0 | 14.6 |
| Cycle Q Clear(g_c), s | 3.9 | 2.5 | 0.0 | 21.8 | 2.0 | 14.6 |
| Prop In Lane | 1.00 | 1.00 | | 0.15 | 1.00 | |
| Lane Grp Cap(c), veh/h | 197 | 175 | 0 | 1023 | 389 | 1361 |
| V/C Ratio(X) | 0.67 | 0.43 | 0.00 | 0.84 | 0.47 | 0.68 |
| Avail Cap(c_a), veh/h | 594 | 528 | 0 | 2460 | 655 | 3116 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 23.7 | 23.1 | 0.0 | 10.1 | 10.3 | 4.1 |
| Incr Delay (d2), s/veh | 3.8 | 1.7 | 0.0 | 2.0 | 0.9 | 0.6 |
| Initial Q Delay(d3), s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 1.8 | 1.0 | 0.0 | 5.8 | 0.9 | 1.4 |
| Unsig. Movement Delay, s/veh | | | | | | |
| LnGrp Delay(d), s/veh | 27.6 | 24.8 | 0.0 | 12.1 | 11.2 | 4.7 |
| LnGrp LOS | C | C | | B | B | A |
| Approach Vol, veh/h | 207 | | 861 | | | 1104 |
| Approach Delay, s/veh | 26.5 | | 12.1 | | | 5.7 |
| Approach LOS | C | | B | | | A |

| Timer - Assigned Phs | 1 | 2 | | | 6 | 8 |
|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 9.2 | 35.7 | | | 44.9 | 10.6 |
| Change Period (Y+Rc), s | 4.5 | 4.5 | | | 4.5 | 4.5 |
| Max Green Setting (Gmax), s | 13.0 | 75.0 | | | 92.5 | 18.5 |
| Max Q Clear Time (g_c+I1), s | 4.0 | 23.8 | | | 16.6 | 5.9 |
| Green Ext Time (p_c), s | 0.3 | 7.4 | | | 8.3 | 0.5 |

| Intersection Summary | |
|---|---|
| HCM 7th Control Delay, s/veh | 10.2 |
| HCM 7th LOS | B |

| Intersection | |
|---|---|
| Int Delay, s/veh | 2.6 |

| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 254 | 28 | 16 | 108 | 78 | 17 |
| Future Vol, veh/h | 254 | 28 | 16 | 108 | 78 | 17 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | - | - | - | 0 | 150 |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 90 | 90 | 90 | 90 | 90 | 90 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 282 | 31 | 18 | 120 | 87 | 19 |

| Major/Minor | Major1 | | Major2 | | Minor1 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 0 | 0 | 313 | 0 | 453 | 298 |
| Stage 1 | - | - | - | - | 298 | - |
| Stage 2 | - | - | - | - | 156 | - |
| Critical Hdwy | - | - | 4.12 | - | 6.42 | 6.22 |
| Critical Hdwy Stg 1 | - | - | - | - | 5.42 | - |
| Critical Hdwy Stg 2 | - | - | - | - | 5.42 | - |
| Follow-up Hdwy | - | - | 2.218 | - | 3.518 | 3.318 |
| Pot Cap-1 Maneuver | - | - | 1247 | - | 564 | 742 |
| Stage 1 | - | - | - | - | 753 | - |
| Stage 2 | - | - | - | - | 873 | - |
| Platoon blocked, % | - | - | | - | | |
| Mov Cap-1 Maneuver | - | - | 1247 | - | 556 | 742 |
| Mov Cap-2 Maneuver | - | - | - | - | 556 | - |
| Stage 1 | - | - | - | - | 753 | - |
| Stage 2 | - | - | - | - | 859 | - |

| Approach | EB | WB | NB |
|---|---|---|---|
| HCM Control Delay, s/v | 0 | 1.02 | 12.19 |
| HCM LOS | | | B |

| Minor Lane/Major Mvmt | NBLn1 | NBLn2 | EBT | EBR | WBL | WBT |
|---|---|---|---|---|---|---|
| Capacity (veh/h) | 556 | 742 | - | - | 232 | - |
| HCM Lane V/C Ratio | 0.156 | 0.025 | - | - | 0.014 | - |
| HCM Control Delay (s/veh) | 12.7 | 10 | - | - | 7.9 | 0 |
| HCM Lane LOS | B | A | - | - | A | A |
| HCM 95th %tile Q(veh) | 0.5 | 0.1 | - | - | 0 | - |

| Intersection | |
|---|---|
| Int Delay, s/veh | 2.9 |

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 0 | 169 | 416 | 54 | 147 | 462 |
| Future Vol, veh/h | 0 | 169 | 416 | 54 | 147 | 462 |
| 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 | - | 150 | 200 | - |
| Veh in Median Storage, # | 0 | - | 0 | - | - | 0 |
| Grade, % | 0 | - | 0 | - | - | 0 |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 0 | 184 | 452 | 59 | 160 | 502 |

| Major/Minor | Minor1 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | - | 452 | 0 | 0 | 511 | 0 |
| Stage 1 | - | - | - | - | - | - |
| Stage 2 | - | - | - | - | - | - |
| Critical Hdwy | - | 6.22 | - | - | 4.12 | - |
| Critical Hdwy Stg 1 | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - |
| Follow-up Hdwy | - | 3.318 | - | - | 2.218 | - |
| Pot Cap-1 Maneuver | 0 | 607 | - | - | 1054 | - |
| Stage 1 | 0 | - | - | - | - | - |
| Stage 2 | 0 | - | - | - | - | - |
| Platoon blocked, % | | | - | - | | - |
| Mov Cap-1 Maneuver | - | 607 | - | - | 1054 | - |
| Mov Cap-2 Maneuver | - | - | - | - | - | - |
| Stage 1 | - | - | - | - | - | - |
| Stage 2 | - | - | - | - | - | - |

| Approach | WB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s/v | 13.48 | 0 | 2.18 |
| HCM LOS | B | | |

| Minor Lane/Major Mvmt | NBT | NBR | WBLn1 | SBL | SBT |
|---|---|---|---|---|---|
| Capacity (veh/h) | - | - | 607 | 1054 | - |
| HCM Lane V/C Ratio | - | - | 0.302 | 0.152 | - |
| HCM Control Delay (s/veh) | - | - | 13.5 | 9 | - |
| HCM Lane LOS | - | - | B | A | - |
| HCM 95th %tile Q(veh) | - | - | 1.3 | 0.5 | - |

| Lane Group | WBL | WBR | NBT | SBL | SBT |
|---|---|---|---|---|---|
| Lane Group Flow (vph) | 99 | 55 | 636 | 121 | 563 |
| v/c Ratio | 0.35 | 0.18 | 0.67 | 0.25 | 0.41 |
| Control Delay (s/veh) | 27.4 | 9.9 | 15.6 | 4.6 | 5.0 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay (s/veh) | 27.4 | 9.9 | 15.6 | 4.6 | 5.0 |
| Queue Length 50th (ft) | 29 | 0 | 153 | 11 | 66 |
| Queue Length 95th (ft) | 83 | 29 | 302 | 28 | 139 |
| Internal Link Dist (ft) | 354 | | 846 | | 728 |
| Turn Bay Length (ft) | 150 | | | 175 | |
| Base Capacity (vph) | 727 | 682 | 1830 | 545 | 1863 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.14 | 0.08 | 0.35 | 0.22 | 0.30 |

Intersection Summary

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 91 | 51 | 514 | 71 | 111 | 518 |
| Future Volume (veh/h) | 91 | 51 | 514 | 71 | 111 | 518 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 |
| Lane Width Adj. | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped-Bike Adj(A_pbT) | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | No | | No | | | No |
| Adj Sat Flow, veh/h/ln | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 99 | 55 | 559 | 77 | 121 | 563 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 185 | 165 | 734 | 101 | 483 | 1244 |
| Arrive On Green | 0.10 | 0.10 | 0.46 | 0.46 | 0.09 | 0.67 |
| Sat Flow, veh/h | 1781 | 1585 | 1609 | 222 | 1781 | 1870 |
| Grp Volume(v), veh/h | 99 | 55 | 0 | 636 | 121 | 563 |
| Grp Sat Flow(s),veh/h/ln | 1781 | 1585 | 0 | 1830 | 1781 | 1870 |
| Q Serve(g_s), s | 2.1 | 1.3 | 0.0 | 11.3 | 1.1 | 5.6 |
| Cycle Q Clear(g_c), s | 2.1 | 1.3 | 0.0 | 11.3 | 1.1 | 5.6 |
| Prop In Lane | 1.00 | 1.00 | | 0.12 | 1.00 | |
| Lane Grp Cap(c), veh/h | 185 | 165 | 0 | 835 | 483 | 1244 |
| V/C Ratio(X) | 0.53 | 0.33 | 0.00 | 0.76 | 0.25 | 0.45 |
| Avail Cap(c_a), veh/h | 1028 | 915 | 0 | 3497 | 750 | 4245 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 16.6 | 16.2 | 0.0 | 8.8 | 6.0 | 3.1 |
| Incr Delay (d2), s/veh | 2.4 | 1.2 | 0.0 | 1.5 | 0.3 | 0.3 |
| Initial Q Delay(d3), s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 0.9 | 0.5 | 0.0 | 2.6 | 0.1 | 0.2 |
| Unsig. Movement Delay, s/veh | | | | | | |
| LnGrp Delay(d), s/veh | 19.0 | 17.4 | 0.0 | 10.3 | 6.3 | 3.4 |
| LnGrp LOS | B | B | | B | A | A |
| Approach Vol, veh/h | 154 | | 636 | | | 684 |
| Approach Delay, s/veh | 18.4 | | 10.3 | | | 3.9 |
| Approach LOS | B | | B | | | A |

| Timer - Assigned Phs | 1 | 2 | | | | 6 | 8 |
|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 8.2 | 22.3 | | | | 30.4 | 8.6 |
| Change Period (Y+Rc), s | 4.5 | 4.5 | | | | 4.5 | 4.5 |
| Max Green Setting (Gmax), s | 9.5 | 74.5 | | | | 88.5 | 22.5 |
| Max Q Clear Time (g_c+I1), s | 3.1 | 13.3 | | | | 7.6 | 4.1 |
| Green Ext Time (p_c), s | 0.1 | 4.5 | | | | 3.7 | 0.4 |

| Intersection Summary | |
|---|---|
| HCM 7th Control Delay, s/veh | 8.2 |
| HCM 7th LOS | A |

| Intersection | |
|---|---|
| Int Delay, s/veh | 3.2 |

| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 154 | 28 | 16 | 64 | 78 | 17 |
| Future Vol, veh/h | 154 | 28 | 16 | 64 | 78 | 17 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | - | - | - | 0 | 150 |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 167 | 30 | 17 | 70 | 85 | 18 |

| Major/Minor | Major1 | | Major2 | | Minor1 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 0 | 0 | 198 | 0 | 287 | 183 |
| Stage 1 | - | - | - | - | 183 | - |
| Stage 2 | - | - | - | - | 104 | - |
| Critical Hdwy | - | - | 4.12 | - | 6.42 | 6.22 |
| Critical Hdwy Stg 1 | - | - | - | - | 5.42 | - |
| Critical Hdwy Stg 2 | - | - | - | - | 5.42 | - |
| Follow-up Hdwy | - | - | 2.218 | - | 3.518 | 3.318 |
| Pot Cap-1 Maneuver | - | - | 1375 | - | 703 | 860 |
| Stage 1 | - | - | - | - | 849 | - |
| Stage 2 | - | - | - | - | 920 | - |
| Platoon blocked, % | - | - | | - | | |
| Mov Cap-1 Maneuver | - | - | 1375 | - | 694 | 860 |
| Mov Cap-2 Maneuver | - | - | - | - | 694 | - |
| Stage 1 | - | - | - | - | 849 | - |
| Stage 2 | - | - | - | - | 908 | - |

| Approach | EB | WB | NB |
|---|---|---|---|
| HCM Control Delay, s/v | 0 | 1.53 | 10.61 |
| HCM LOS | | | B |

| Minor Lane/Major Mvmt | NBLn1 | NBLn2 | EBT | EBR | WBL | WBT |
|---|---|---|---|---|---|---|
| Capacity (veh/h) | 694 | 860 | - | - | 360 | - |
| HCM Lane V/C Ratio | 0.122 | 0.021 | - | - | 0.013 | - |
| HCM Control Delay (s/veh) | 10.9 | 9.3 | - | - | 7.7 | 0 |
| HCM Lane LOS | B | A | - | - | A | A |
| HCM 95th %tile Q(veh) | 0.4 | 0.1 | - | - | 0 | - |