

***Planning and Zoning Commission Communication City of  
Longmont, Colorado***

Project Title: McDonald's at Sandstone Marketplace Conditional Use Site Plan

Date of Meeting: June 26, 2024

Staff Planner:

Kristin Cote, Planning & Development Services, [kristin.cote@longmontcolorado.gov](mailto:kristin.cote@longmontcolorado.gov)

**GENERAL INFORMATION**

Proposal: The property owner of Lot 6, Block 1 of the Sandstone Marketplace Subdivision Filing No. 1 proposes to construct a 4,965+/- SF fast food restaurant with a drive-through on approximately 1.19 acres of MU-R (mixed-use regional center) zoned land.

Location: South of East Ken Pratt Blvd, west of Common Drive, and east of County Road 1.

Area: 1.19 +/- acres

Existing Use: Vacant land

Zoning: MU-R (mixed-use regional center)

**SURROUNDING LAND USES AND ZONING**

North: N-PE (Primary Employment)

South: MU-R (mixed-use regional center)

East: MU-R (mixed-use regional center)

West: MU-R (mixed-use regional center)

**COMPREHENSIVE PLAN DESIGNATIONS**

North: Primary Employment

South: Regional Center

East: Regional Center

West: Regional Center

**OWNER/ APPLICANT CONTACT INFORMATION**

Property Owner: SSC Investors, LLC

Applicant: McDonalds USA, LLC

Applicant Contact: Jessica McCallum

Company: Kimley-Horn and Associates

Address: 2 North Nevada Avenue, Suite 900

Phone: 719-284-7275

## **APPLICATION DESCRIPTION**

The proposed McDonald's restaurant is proposed to be situated on Lot 6, Block 1 of the Sandstone Marketplace Subdivision Filing No. 1 Replat B, located south of Hwy. 119/East Ken Pratt Blvd. This 1.19-acre property was annexed into the city in 1998 as part of the Mayeda Annexation and was zoned MU-R (Mixed Use Regional Center) in 2010. It was resubdivided in 2024 into its current configuration.

The applicant plans to build a 4,965-square-foot fast-food restaurant with a drive-through on this site. To ensure efficient vehicle circulation, the design includes two site access points on the east and west lot boundaries, along with 205 feet of vehicle stacking capacity (Section 15.05.080.I.1.B of LDC) in the drive-through. These measures will help maintain smooth traffic flow and accessibility.

## **Alignment with the Envision Longmont Comprehensive Plan**

The proposed McDonalds at Sandstone Marketplace is in alignment with the Growth Framework and Policies of the Envision Longmont Comprehensive Plan as detailed below.

- **1.2A Overall Mix of Uses.**

This project contributes to a balanced mix of residential, employment, retail, and commercial uses, aligning with the policy's objective.

- **1.2B Distribution of Service and Recreation-Oriented Used.**

This plan supports the City's goal of promoting a balanced geographic distribution of services and recreation-oriented facilities throughout Longmont.

- **1.7 Reinforce Longmont's unique identity and sense of community.**

Located along a key gateway corridor into Longmont, this development enhances the appearance of a major right-of-way, thereby strengthening Longmont's unique identity and sense of community.

The subject property is designated as part of the Mixed-Use Regional Center plan category. This category aims to maintain distinct areas for large-scale mixed-use development and redevelopment, focusing on meeting the commercial and retail needs of both the city and the region. The MU-R district supports pedestrian-friendly, regional-scale employment and commercial activities, as well as multifamily residential uses, all with convenient access to public amenities, including public transit.



## **DEVELOPMENT REVIEW COMMITTEE PROCESS**

The Development Review Committee (DRC) began reviewing this project on August 2, 2023. After three reviews, the project design was approved to proceed to the public hearing by City staff from Public Works Engineering, Longmont Power & Communications, Public Safety, Transportation, and Planning. This comprehensive review ensured the project meets all necessary access, easements, and infrastructure requirements according to Longmont City standards.

The applicant has provided a four-sided architectural design that complies with Section [15.05.120](#) Mixed Use and Nonresidential Design Standards, presenting an attractive and comprehensive plan. Connectivity requirements, as stipulated in Section [15.05.060](#) of the Longmont Development Code (LDC), have been met with well-designed pedestrian pathways on-site, along with access to the existing sidewalk adjacent to Ken Pratt Blvd. The primary entrance of the principal structures has direct sidewalk access, enhancing pedestrian safety and connectivity without requiring street crossings.

The landscaping plan complies with LDC standards, including a 50-foot gateway buffer adjacent to Ken Pratt Blvd, and the required 10-foot parking buffers on the west and east lot lines. The site will feature 385 +/- trees and shrubs, contributing to the overall aesthetic and environmental quality. The parking layout includes 29 spaces, 2 ADA-compliant spaces, 5 mobile pick-up spots, and 4 bike parking spaces, meeting the required 5% of total parking for bike storage. Additionally, the design includes a 205-foot vehicle stacking lane for the drive-through, exceeding the minimum requirement of 180 feet, ensuring efficient traffic flow and preventing overflow into the parking lot and adjacent public streets.

The proposed fast-food restaurant with a drive-through is a conditional secondary use in the MU-R zoning district, adhering to specific use standards. This includes compliance with vehicle stacking requirements (Section [15.05.080.I](#)), conditional use approval for properties adjacent to city-owned parks, greenways, or open spaces, and adherence to residential compatibility standards if within 250 feet of a residential zoning district. This proposal meets all these standards, is not within 250 feet of a residential district, and is not adjacent to city-owned parks, greenways, or open spaces.

Planning staff interprets that all secondary uses in a given contiguous zoning area may comprise no more than 50% of a given contiguous zoning area. The remainder of the

Sandstone Marketplace subdivision consists of vacant land. Retail sales are a permitted primary use, while multifamily development is a permitted secondary use.

This MU-R zoned area totals approximately 59 acres, allowing for a total of 29.5 acres to be utilized for secondary uses within this zoning district. The apartment complex occupies 7.67 acres, after accounting for the apartment complex, 21.83 acres remain available for secondary uses. The proposed project will utilize approximately 1.19 acres of this land, well within the allowable limits for secondary use allocation.

In accordance with Section 15.04.030.A.1.c of Longmont Development Code (LDC) the proposed 4,965 square foot fast food restaurant with a drive-through in the MU-R (Mixed-Use Regional) zone, is compatible with the surrounding uses in that the scale and design of the restaurant are compatible with the surrounding uses, which include a big box retailer, a distribution center, and a hospital. The architectural design aligns with the architectural standards of the non-residential MU-R zone.

Potential adverse impacts, such as increased traffic, have been mitigated to the maximum extent feasible. The site design includes adequate stacking lanes for the drive-through to prevent congestion. In accordance with Section 15.05.080 of LDC, this property is providing the requisite electric vehicle (EV) parking infrastructure, which includes an EV charger, an EV-ready stall, an EV-capable stall, and an EV-capable light stall. Additionally, the layout of the site and the two access points facilitates smooth traffic flow within the site and the site provides sufficient parking to accommodate customers.

Overall, the proposed use adheres to the standards and goals of the MU-R zone, promoting a balanced and efficient mixed-use environment while minimizing any negative effects on the surrounding area.

In summary, this secondary use aligns with the comprehensive plan, which designates retail, restaurants, and similar entertainment uses as primary functions of the Regional Center zone, attracting visitors from across the city and region. As outlined in the Longmont Development Code (LDC), the MU-R district aims to establish and preserve distinct areas for mixed-use development and redevelopment, focusing on meeting the commercial and retail needs of the city and region. Therefore, the inclusion of a restaurant is entirely consistent with these objectives.

## **PUBLIC WORKS REVIEW**

There are very few public improvements directly associated with the McDonald's at Sandstone Marketplace project. Rather, most of the public improvements associated with this project, including the road section for Brien Avenue, the 8" water line, and 8" sanitary main, will be constructed as part of the Sandstone Marketplace master development. The Sandstone

Marketplace master development will provide 6" stubs from both the water and sanitary mains into the McDonald's lot, which the McDonald's development plans to utilize to service their facility. The electric service will be pulled from the electric line along Brien Avenue that is being installed as part of the master development, while the telecommunications and gas service will come from the existing lines located north in Ken Pratt ROW.

The McDonald's project is proposing a private network of storm pipes to capture their site's drainage. Their network will tie into a storm drainage main constructed by the Sandstone Marketplace master development located in a storm drainage easement in the southern portion of the McDonald's lot. This storm drainage main will collect flows from both the McDonald's lot and the lot immediately to the west and then convey flows via piped storm infrastructure to the regional detention pond which the Commercial Owner's Association for the master development will be responsible for maintaining.

The McDonald's project does propose to take access from Brien Avenue at two separate access points with new curb cuts. Both access points are planned to be shared accesses with the lots on the east and west. This helps not only meet the required access spacing but to prevent the access location from negatively impacting the adjacent lots.

### **TRANSPORTATION REVIEW**

McDonald's at Sandstone Marketplace is proposing a 4,517-square-foot fast food restaurant with a drive-through window. The applicant has submitted a traffic compliance letter indicating that the proposed McDonald's conforms to the assumptions made in the traffic impact studies for the Sandstone Marketplace Preliminary Plat and Final Plat applications. The traffic letter was based on a building area of 4,365 square feet, which is slightly smaller than the 4,517 square feet proposed in the current site plan. Despite this slight increase, the proposed McDonald's remains in compliance with the previous traffic impact studies. The Traffic Impact Study for Sandstone Marketplace, completed in May 2023 as part of the Final Plat application, assumed 11,500 square feet of fast-food restaurant space. Additionally, the applicant has strategically located the property's access points to facilitate future shared use and minimize potential spacing conflicts.

The following entities were sent referral letters regarding this preliminary plat application: CenturyLink (phone), Xcel Energy (gas), Colorado Department of Transportation, RTD Denver, and Northern Colorado Water Conservancy District.

Comments were received from Xcel Energy and a local property owner. Xcel Energy made the property owner aware that PSCo owns and operates existing intermediate-pressure natural gas distribution facilities along the north property line. The property owner did

not voice any concerns with the development of this site but did provide suggestions regarding the landscaping provided.

#### **NEIGHBORHOOD INPUT – NOTIFICATIONS AND SIGN-POSTING**

<b>Notice Type</b>	<b>Date Sign Posted</b>	<b>Date Mailed/Postmarked</b>
Mailed Notice of Neighborhood Meeting		March 14, 2023
Posted Notice of Neighborhood Meeting	March 29, 2023	
Mailed Notice of Application		August, 2023
Posted Notice of Application	August, 2023	
Mailed Notice of Public Hearing		June 10, 2024
Posted Notice of Public Hearing	June 12, 2024	

#### **CRITERIA EVALUATION**

**15.02.055. No major, minor, or administrative development application shall be approved unless it meets the following review criteria, except that individual types of applications described in this land development code specifically may include exceptions to these criteria or impose additional criteria:**

- 1. The application is consistent with the comprehensive plan and the purpose of the code and zoning district; conforms to any previously approved concept plan, preliminary plat, or PUD overall development plan; and complies with all applicable statutes, codes, ordinances, and regulations.**

The project aligns with the comprehensive plan and adheres to the purpose of the code and zoning district. The plan is consistent with the following development goals:

**Goal 1.2A: OVERALL MIX OF USES.** Strive for a balanced mix of residential, employment, retail, commercial, recreational, and other uses that allow residents to live, work, play, learn, and conduct much of their daily business within the City and increase the self-sufficiency of the community.

**Goal 1.2B Distribution of Service and Recreation-Oriented Used.**

This plan supports the City's goal of promoting a balanced geographic distribution of services and recreation-oriented facilities throughout Longmont.

**Goal 1.2G INTEGRATION OF USES.** Encourage the integration of complementary uses within the same building (i.e., residential or office above retail) or on the same site

(i.e., residential adjacent to employment and/or retail uses) as a way of revitalizing centers, corridors, and employment areas and improving access to services.

**1.7 Reinforce Longmont's unique identity and sense of community.**

Located along a key gateway corridor into Longmont, this development enhances the appearance of a major right-of-way, thereby strengthening Longmont's unique identity and sense of community.

Additionally, it meets applicable statutes, codes, ordinances, and regulations.

- 2. The application complies with applicable city standards, including for street and utility design and layout, and adequate utilities are available or will be provided for appropriate urban-level services.**

The proposed project adheres to applicable city standards, including street and utility design and layout. Adequate utilities are available or will be provided to ensure appropriate urban-level services. The existing and planned street network will sufficiently support the development.

- 3. The application proposes development compatible with surrounding properties in terms of land use, site and building layout and design, and access.**

The proposed development of the subject property is compatible with the surrounding properties and is generally in conformance with the approved plans put in place at the time of annexation and the subsequent approvals for the development of surrounding properties.

- 4. The application will not adversely affect surrounding properties, the natural environment, existing or planned city transportation, or utility services or facilities, or the adverse impacts of the use will be mitigated to the maximum extent feasible.**

No adverse impacts are anticipated that will affect the surrounding neighborhood or the natural environment, during either construction or operation. The existing transportation and utility networks have sufficient capacity to serve this development.

- 5. The application, where required, complies with the sustainability evaluation system requirements to mitigate impacts of development within the city's riparian areas, and as applicable to other projects as determined by separate agreement.**

Not applicable.

- 6. The application includes an appropriate transportation plan, including multi-modal**

**transportation access, and is integrated and connected, where appropriate, with adjacent development through street connections, sidewalks, trails, and similar features.**

A public street, currently under construction by the developers of the subdivision, will provide access onto County Line Road to the west and Common Drive to the east.

### **Planning and Zoning Commission Options**

The Planning and Zoning Commission may consider the following options when reviewing the McDonalds at Sandstone Marketplace Conditional Use Site Plan:

1. Approve the McDonalds at Sandstone Marketplace Conditional Use Site Plan without conditions.
2. Approve the McDonalds at Sandstone Marketplace Conditional Use Site Plan with Conditions.
3. Deny the McDonalds at Sandstone Marketplace Conditional Use Site Plan.

### **Recommendation**

Staff recommends that the Staff recommends that the Sandstone Marketplace Subdivision Filing No. 1 Replat B Preliminary Plat be approved without conditions, as outlined in PZR-2024-3A.

### **Attachments**

Att 1a – PZR-2024- 3A – Approval Resolution

Att 1b – PZR-2024- 3B – Approval with Conditions Resolution

Att 1c – PZR-2024- 3C – Denial Resolution

Att 2 – Plat of Sandstone Marketplace Filing No. 1 Replat B

Att 3 - Traffic Impact Study for the Sandstone Marketplace Final Plat

Att 4 – Site Plan

Att 5 – Architectural Elevations

Att 6 – Notice and Posting Information

Att 7 – Public and Outside Agency Comments

**Project File Number: DV-SITE PLAN-23-00016**

1 **PZR 2024-3A**

2 **A Resolution of the Planning and Zoning Commission Recommending**  
3 **Approval of the McDonalds at Sandstone Marketplace Conditional Use Site Plan**  
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5 Be it resolved by the Planning and Zoning Commission of the City of Longmont, Colorado:

6 Section 1. The Longmont Planning and Zoning Commission finds that:

7 1.1 An application for the **McDonalds at Sandstone Marketplace Conditional Use Site Plan**  
8 has been submitted.

9 1.2 Said applications were found to be complete through the DRC review process.

10 1.3 Said application was considered during a public hearing opened on June 26, 2024.

11 1.4 Proper notice was given according to Sections 15.02.040.J of the Longmont Land  
12 Development Code.

13 1.5 Said applications conform to the applicable requirements of Sections 15.04.030.A.1.c,  
14 15.02.055 and 15.02.060.C of the Longmont Land Development Code.

15 Section 2. This resolution constitutes the written report, findings, and recommendation of the City of  
16 Longmont Planning and Zoning Commission.

17 Section 3. On the basis of the above, the City of Longmont Planning and Zoning Commission  
18 recommends approval of 15.04.030.A.1.c, 15.02.055 and 15.02.060.C

19 This resolution approved this 26<sup>th</sup> day of June 2024, by a vote of \_\_\_\_ to \_\_\_\_.

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22 Chairperson, Planning and Zoning Commission



**PZR 2024-3B**

**A Resolution of the Planning and Zoning Commission Conditionally Approving the McDonalds  
at Sandstone Marketplace Conditional Use Site Plan**

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Be it resolved by the Planning and Zoning Commission of the City of Longmont, Colorado:

Section 1. The Longmont Planning and Zoning Commission finds that:

1.1 An application for the McDonalds at Sandstone Marketplace Conditional Use  
Site Plan has been submitted.

1.2 Said application was found to be complete through the DRC review process.

1.3 Said application was considered during a public hearing opened on June 26,  
2024.

1.4 Proper notice was given according to Section 15.02.040.J of the Longmont  
Land Development Code.

1.5 Said application conforms to the applicable requirements of Sections  
15.02.055 and 15.02.060.C of the Longmont Land Development Code with the  
following conditions:

1. ...

Section 2. This resolution constitutes the written report, findings, and decision of the City  
of Longmont Planning and Zoning Commission.

Section 3. On the basis of the above, the City of Longmont Planning and Zoning  
Commission CONDITIONALLY APPROVES the McDonalds at Sandstone  
Marketplace Conditional Use Site Plan subject to the above conditions.

This resolution approved this 26<sup>th</sup> day of May 2024, by a vote of \_\_\_\_ to \_\_\_\_.

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Chairperson, Planning and Zoning Commission

PZR 2024-3C

**A Resolution of the Planning and Zoning Commission Denying  
the McDonalds at Sandstone Marketplace Conditional Use Site Plan**

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Be it resolved by the Planning and Zoning Commission of the City of Longmont, Colorado:

Section 1. The Longmont Planning and Zoning Commission finds that:

1.1 An application for the **McDonalds at Sandstone Marketplace Conditional Use Site Plan** has been submitted.

1.2 Said application was found to be complete through the DRC review process.

1.3 Said application was considered during a public hearing on June 26, 2024.

1.4 Proper notice was given according to Section 15.02.040.J of the Longmont Land Development Code.

1.5 Said application does not conform to the applicable requirements of Sections 15.02.055 and 15.02.060.C of the Longmont Land Development Code.

Section 2. This resolution constitutes the written report, findings, and decision of the City of Longmont Planning and Zoning Commission.

Section 3. On the basis of the above, the City of Longmont Planning and Zoning Commission denies the **McDonalds at Sandstone Marketplace Conditional Use Site Plan**.

This resolution approved this 26<sup>th</sup> day of June 2024, by a vote of \_\_\_\_ to \_\_\_\_.

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Chairperson, Planning and Zoning Commission

FINAL PLAT  
**SANDSTONE MARKETPLACE SUBDIVISION FILING NO. 1 REPLAT B**  
A REPLAT OF LOTS 2 THRU 6, BLOCK 1, SANDSTONE MARKETPLACE SUBDIVISION FILING NO. 1, REPLAT A  
LOCATED IN THE NORTHWEST QUARTER OF SECTION 7, TOWNSHIP 2 NORTH, RANGE 68 WEST OF THE 6TH P.M.,  
CITY OF LONGMONT, COUNTY OF WELD, STATE OF COLORADO

**LEGAL DESCRIPTION:**

KNOW ALL MEN BY THESE PRESENTS, THAT THE UNDERSIGNED SSC INVESTORS, LLC, A COLORADO LIMITED LIABILITY COMPANY, BEING THE SOLE OWNER OF THE LAND SHOWN IN THIS FINAL PLAT AND DESCRIBED AS FOLLOWS:

A SUBDIVISION WITHIN THE CITY OF LONGMONT OF A PARCEL OF LAND LOCATED IN THE NORTHWEST QUARTER OF SECTION 7, TOWNSHIP 2 NORTH, RANGE 68 WEST OF THE SIXTH PRINCIPAL MERIDIAN, CITY OF LONGMONT, COUNTY OF WELD, STATE OF COLORADO, BEING A REPLAT OF LOTS 2 THRU 6, INCLUSIVE, BLOCK 1, SANDSTONE MARKETPLACE SUBDIVISION FILING NO. 1, REPLAT A, RECORDED OCTOBER 5, 2022 AT RECEPTION NO. 4859291, COUNTY OF WELD, STATE OF COLORADO, ADDITIONALLY DESCRIBED AS FOLLOWS:

COMMENCING AT THE NORTHWEST CORNER OF SAID SECTION 7, AS MONUMENTED BY A FOUND 3-1/4" ALUMINUM CAP STAMPED "LS 34593", IN RANGE 68 WEST OF THE SIXTH PRINCIPAL MERIDIAN, CITY OF LONGMONT, COUNTY OF WELD, STATE OF COLORADO, BEING A REPLAT OF LOTS 2 THRU 6, INCLUSIVE, BLOCK 1, SANDSTONE MARKETPLACE SUBDIVISION FILING NO. 1, REPLAT A, RECORDED OCTOBER 5, 2022 AT RECEPTION NO. 4859291, COUNTY OF WELD, STATE OF COLORADO, ADDITIONALLY DESCRIBED AS FOLLOWS:

THENCE ALONG THE NORTH AND EAST LINE OF SAID BLOCK 1, SANDSTONE MARKETPLACE SUBDIVISION FILING NO. 1 REPLAT A THE FOLLOWING SEVEN (7) COURSES:  
1) N 88°04'21" E, A DISTANCE OF 138.39 FEET;  
2) ALONG A TANGENT CURVE TO THE RIGHT WITH A CENTRAL ANGLE OF 02°13'00", A RADIUS OF 17,090.00 FEET, AN ARC LENGTH OF 661.20 FEET; AND A CHORD BEARING AND DISTANCE OF N 89°10'51" E, 661.16 FEET;  
3) S 89°42'39" E, A DISTANCE OF 452.89 FEET;  
4) ALONG A NON-TANGENT CURVE TO THE RIGHT WITH A CENTRAL ANGLE OF 13°17'58", A RADIUS OF 38.50 FEET, AN ARC LENGTH OF 8.94 FEET; AND A CHORD BEARING AND DISTANCE OF S 06°12'03" E, 132.20 FEET;  
5) S 12°05'44" E, A DISTANCE OF 163.50 FEET TO THE SOUTHEAST CORNER OF LOT 2, BLOCK 1 SAID SANDSTONE MARKETPLACE SUBDIVISION FILING NO. 1 REPLAT A;

THENCE ALONG THE SOUTH AND WEST LINE OF SAID LOT 2, BLOCK 1 THE FOLLOWING THREE (3) COURSES:  
1) S 77°54'18" W, A DISTANCE OF 289.51 FEET;  
2) N 90°00'00" W, A DISTANCE OF 473.76 FEET;  
3) N 00°01'37" E, A DISTANCE OF 223.10 FEET TO A POINT ON THE SOUTH OF LOT 6, BLOCK 1, SAID SANDSTONE MARKETPLACE SUBDIVISION FILING NO. 1 REPLAT A;

THENCE ALONG SAID SOUTH LINE S 59°12'47" W, A DISTANCE OF 763.49 FEET TO A POINT ON THE WEST LINE OF SAID BLOCK 1;  
THENCE ALONG SAID WEST LINE THE FOLLOWING TWO (2) COURSES:  
1) N 00°17'30" W, A DISTANCE OF 999.41 FEET;  
2) ALONG A NON-TANGENT CURVE TO THE RIGHT WITH A CENTRAL ANGLE OF 42°50'17", A RADIUS OF 104.00 FEET, AN ARC LENGTH OF 77.76 FEET; AND A CHORD BEARING AND DISTANCE OF N 21°23'23" E, 75.06 FEET TO THE POINT OF BEGINNING.

SAID PARCEL CONTAINS 1,055,936 SQ. FT. OR 24.2410 ACRES, MORE OR LESS.

**PROPERTY OWNER DEDICATION AND ACKNOWLEDGMENT:**

SSC INVESTORS, LLC, A COLORADO LIMITED LIABILITY COMPANY, BEING THE OWNER OF THE LAND DESCRIBED HEREIN HAVE CAUSED SAID LAND TO BE PLATTED UNDER THE NAME OF SANDSTONE MARKETPLACE SUBDIVISION FILING NO. 1 REPLAT B AND DEDICATE TO THE PUBLIC FOREVER ALL PUBLIC STREETS AND RIGHTS-OF-WAY, EASEMENTS, AND OTHER PLACES DESIGNATED OR DESCRIBED AS FOR PUBLIC USE ON THIS PLAT. ALL CONDITIONS, TERMS, AND SPECIFICATIONS DESIGNATED OR DESCRIBED ON THIS DOCUMENT SHALL BE BINDING ON THE OWNERS, THEIR HEIRS, SUCCESSORS AND ASSIGNS.

IN WITNESS WHEREOF, WE HAVE HEREUNTO SET OUT HANDS AND SEALS

THIS 20 DAY OF April, 2024

BY: Richard M. Groves, Manager

TITLE: Manager

SSC INVESTORS, LLC, A COLORADO LIMITED LIABILITY COMPANY

**NOTARY CERTIFICATE FOR PROPERTY OWNER ACKNOWLEDGMENT:**

STATE OF Colorado } SS.

COUNTY OF Boulder }

THE FOREGOING INSTRUMENT WAS ACKNOWLEDGED BEFORE ME

THIS 20 DAY OF April, 2024

BY: Richard M. Groves, Manager

MY COMMISSION EXPIRES: October 6, 2026

Richard M. Groves  
NOTARY PUBLIC

ADDRESS OF NOTARY: 755 Delaware Ave Ste A

Longmont, CO 80501

**MORTGAGEE'S CONSENT:**

THE UNDERSIGNED SECURITY BANK OF KANSAS CITY, SUCCESSOR IN INTEREST TO THE MISSION BANK, A KANSAS BANKING INSTITUTION, AS A BENEFICIARY OF A SPECIAL WARRANTY DEED WHICH CONSTITUTES A LIEN UPON THE DECLARANT'S PROPERTY, RECORDED UNDER RECEPTION NOS. 4616925 AND 4138181 WITH THE WELD COUNTY CLERK AND RECORDER, CONSENTS TO THE DEDICATION OF LAND TO STREETS, ALLEYS, ROADS, AND OTHER PUBLIC AREAS AS DESIGNATED ON THIS PLAT, AND FOREVER RELEASES SAID DEDICATED LANDS FROM THE LIEN CREATED BY SAID INSTRUMENT.

BENEFICIARY NAME: Mary Beth

SIGNATURE: EVP

TITLE: 4-2-2024

DATE: 4-2-2024

**NOTARY CERTIFICATE OF MORTGAGEE'S CONSENT:**

STATE OF Kansas } SS.

COUNTY OF Johnson }

THE FOREGOING INSTRUMENT WAS ACKNOWLEDGED BEFORE ME

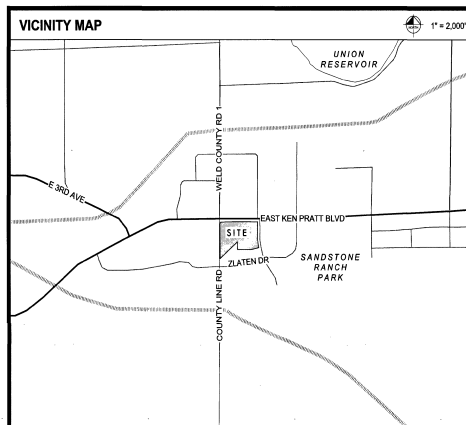
THIS 2 DAY OF April, 2024

BY: Clay E. Coburn Jr.

MY COMMISSION EXPIRES: 9-1-26

Clay E. Coburn Jr.  
NOTARY PUBLIC

ADDRESS OF NOTARY: 750 W. 4th St. OKS



**NOTES:**

1. ACCORDING TO COLORADO LAW YOU MUST COMMENCE ANY LEGAL ACTION BASED UPON ANY DEFECT IN THIS SURVEY WITHIN THREE YEARS AFTER YOU FIRST DISCOVER SUCH DEFECT. IN NO EVENT MAY ANY ACTION BASED UPON ANY DEFECT IN THIS SURVEY BE COMMENCED MORE THAN TEN YEARS FROM THE DATE OF THE CERTIFICATION SHOWN HEREON.
2. ANY PERSON WHO KNOWINGLY REMOVES, ALTERS OR DEFACES ANY PUBLIC LAND SURVEY MONUMENT OR LAND BOUNDARY MONUMENT OR ACCESSORY COMMITTEE CLASS TWO (2) MISDEMEANOR PURSUANT TO STATE STATUTE 18-6-508, C.R.S.
3. THE SUBJECT PROPERTY LIES OUTSIDE ZONE A, AREA OF THE 1% ANNUAL CHANCE FLOODPLAIN (100-YEAR FLOODPLAIN), AS SHOWN ON FIRM PANEL 08030202A1, WITH AN EFFECTIVE DATE OF DECEMBER 18, 2012. THE PRELIMINARY FIRM MAP, DATED SEPTEMBER 30, 2019, ALSO SHOWS THAT THE SITE IS LOCATED OUTSIDE OF ANY ZONE A. THE PLAT WILL NOT SHOW THE AREA OF THE 1% ANNUAL CHANCE FLOODPLAIN (100-YEAR FLOODPLAIN).
4. THE ZONING FOR THIS PROPERTY IS M-U-R (MIXED USE - REGIONAL CENTER).
5. THE SURVEYED PROPERTY CONTAINS A CALCULATED AREA OF 1,055,936 SQ. FT. OR 24.2410 ACRES, MORE OR LESS.
6. BEARINGS ARE BASED ON THE WEST LINE OF THE NORTHWEST QUARTER OF SECTION 7, TOWNSHIP 2 NORTH, RANGE 68 WEST OF THE 6TH P.M., BEARING S 07°17'30" W, A DISTANCE OF 2655.20 FEET, AS MONUMENTED AT THE NORTHWEST CORNER BY A FOUND 3-1/4" ALUMINUM CAP STAMPED "LS 34593", AND AT THE WEST QUARTER CORNER BY A FOUND ILLEGIBLE 2-1/2" ALUMINUM CAP.
7. ALL DISTANCES SHOWN HEREON ARE GROUND DISTANCES IN U.S. SURVEY FEET.
8. THE WORD "CERTIFY" OR "CERTIFICATE" AS SHOWN AND USED HEREON MEANS AN EXPRESSION OF PROFESSIONAL OPINION REGARDING THE FACTS OF THE SURVEY AND DOES NOT CONSTITUTE A WARRANTY OR GUARANTEE, EXPRESSED OR IMPLIED.
9. THIS PLAT DOES NOT CONSTITUTE A TITLE SEARCH BY KIMLEY-HORN AND ASSOCIATES, INC. FOR ALL RECORD INFORMATION REGARDING EASEMENTS, RIGHTS-OF-WAY, ENCUMBRANCES, OR TITLE OF RECORD, KIMLEY-HORN AND ASSOCIATES, INC. RELIED UPON TITLE REPORT NO. 00501080-201121-NB, EFFECTIVE DATE SEPTEMBER 26, 2023, PREPARED BY FIDELITY NATIONAL TITLE INSURANCE COMPANY.
10. LOTS 1, 3, 4, 5 AND 7 OF BLOCK 1 ARE SUBJECT TO RESTRICTIONS PER REC. NOS. 4616924 AND 4616925.
11. THE OWNERS OF THIS SUBDIVISION, THEIR SUCCESSORS AND/OR ASSIGNS IN INTEREST, THE ADJACENT PROPERTY OWNER, PROPERTY OWNERS ASSOCIATION OR ENTITY OTHER THAN THE CITY IS RESPONSIBLE FOR MAINTENANCE AND UPKEEP OF PERMITTER FENCING OR WALLS, LANDSCAPE BUFFER AND LANDSCAPED AREAS AND SIDEWALKS WITHIN THE PROPERTY LINE AND ANY PAVED ROADWAYS. THE OWNERS OF THIS SUBDIVISION, THEIR SUCCESSORS AND/OR ASSIGNS IN INTEREST OR AN ENTITY OTHER THAN THE CITY, AGREE TO THE RESPONSIBILITY OF MAINTAINING ALL OTHER OPEN SPACE AREAS ASSOCIATED WITH THIS DEVELOPMENT. MAINTENANCE AND UPKEEP INCLUDE BUT IS NOT LIMITED TO, MOWING, WEED CONTROL AND ABATEMENT, TRASH REMOVAL, TREE TRIMMING, BRUSH REMOVAL, VEGETATION MANAGEMENT, AND OTHER ITEMS DEEMED NECESSARY FOR PROPER MAINTENANCE OF SAID RIGHTS-OF-WAY.
12. DRIVES, PARKING AREAS, UTILITY EASEMENTS, AND DRAINAGE MAINTENANCE. THE OWNERS OF THIS SUBDIVISION, THEIR SUCCESSORS AND/OR ASSIGNS IN INTEREST, THE ADJACENT PROPERTY OWNER, BUSINESS ASSOCIATION OR OTHER ENTITY, OTHER THAN THE CITY, IS RESPONSIBLE FOR MAINTENANCE AND UPKEEP OF ANY AND ALL DRIVES, PARKING AREAS, EASEMENTS, AND DRAINAGE FACILITIES (CROSS-ACCESS EASEMENTS, DRAINAGE EASEMENTS, ETC.).
13. BLANKET CROSS-ACCESS EASEMENTS TO BE PROVIDED BETWEEN ALL LOTS.
14. PERMANENT STRUCTURES, IMPROVEMENTS, OBJECTS, BUILDINGS, WELLS, WATER METERS AND OTHER OBJECTS THAT MAY INTERFERE WITH THE UTILITY FACILITIES OR USE THEREOF (INTERFERING OBJECTS) SHALL NOT BE PERMITTED WITHIN SAID UTILITY EASEMENTS AND THE UTILITY PROVIDERS, AS GRANTEEES, MAY REMOVE ANY INTERFERING OBJECTS AT NO COST TO SUCH GRANTEEES, INCLUDING, WITHOUT LIMITATION, VEGETATION, PUBLIC SERVICE COMPANY OF COLORADO (PSCO) AND ITS SUCCESSORS RESERVE THE RIGHT TO REQUIRE ADDITIONAL EASEMENTS AND TO REQUIRE THE PROPERTY OWNER TO GRANT PSCO AN EASEMENT ON ITS STANDARD FORM.
15. THAT THE PROPERTY OWNER SHALL NOT CONSTRUCT OR ALLOW THE CONSTRUCTION OF ANY BUILDING, STRUCTURE, OR OTHER IMPROVEMENT ON, OVER, UNDER, OR ACROSS THE EASEMENT, OR TAKE ANY ACTION WHICH WOULD IMPAIR OR IN ANY WAY MODIFY THE IMPROVEMENTS OR LATERAL OR SUBJACENT SUPPORT FOR THE IMPROVEMENTS, WITHOUT OBTAINING THE SPECIFIC WRITTEN PERMISSION OF THE CITY, EXCEPT AS AGREED UPON BY THE PARTIES IN THE FINAL SUBDIVISION PLAT FOR THE LAND. THAT IN THE EVENT THE CITY'S SPECIFIC WRITTEN PERMISSION IS NOT OBTAINED FOR THE CONSTRUCTION OF ANY BUILDING, STRUCTURE, OR OTHER IMPROVEMENT, AS REFERENCED IN THIS SECTION, THE CITY SHALL BE PERMITTED TO IMMEDIATELY REMOVE OR RELOCATE WITHOUT ANY LIABILITY FOR DAMAGES AND AT THE SOLE EXPENSE OF THE PROPERTY OWNER, ANY OBSTRUCTION THAT INTERFERES WITH OR IMPAIRS THE CITY'S RIGHTS UNDER THE EASEMENT.
16. ARTERIAL AND GATEWAY LANDSCAPE BUFFERS SHALL BE INSTALLED BY THE DEVELOPER ACCORDING TO CITY LANDSCAPE REQUIREMENTS IN EFFECT AT THE TIME OF APPROVAL OF THIS SUBDIVISION. BUFFER LANDSCAPE MAINTENANCE SHALL BE THE RESPONSIBILITY OF THE PROPERTY OWNER ASSOCIATION OR OTHER PROPERTY MANAGEMENT ENTITY IN PERPETUITY PER MUNICIPAL CODE.
17. ALL DEVELOPMENT ON THIS PROPERTY SHALL COMPLY WITH THE APPLICABLE DEVELOPMENT CODE REQUIREMENTS AND STANDARDS AS SET FORTH IN THE CITY OF LONGMONT MUNICIPAL CODE.
18. LOT 3, BLOCK 2 WILL BE AN AMENITY AREA FOR THE DEVELOPMENT CONSISTING OF A SHADE STRUCTURE, SEATING AREAS, WALKING PATHS, PLANTERS AND BIKE RACKS. AMENITIES PROVIDED SHALL BE IN ACCORDANCE WITH SECTION 15.05.040 G.1.a.i OF LONGMONT DEVELOPMENT CODE.
19. PROPERTY OWNER SHALL BE RESPONSIBLE FOR THE LANDSCAPE AND IRRIGATION SYSTEM AS REQUIRED TO KEEP ALL PLANT MATERIALS IN HEALTHY CONDITION.
20. THAT THE PROPERTY OWNER COVENANTS AND AGREES TO CAUSE THE EASEMENT AREA AND ANY IMPROVEMENTS INSTALLED THEREON BY THE PROPERTY OWNER TO BE MAINTAINED AND KEPT, AT ITS SOLE COST AND EXPENSE, IN GOOD CONDITION AND STATE OF REPAIR.
21. THIS DEVELOPMENT WILL SATISFY THE INCLUSIONARY HOUSING REQUIREMENTS SET FORTH IN SECTION 15.05.220 OF THE LONGMONT MUNICIPAL CODE BY PAYING FEES IN FULL (15.05.220 E2) THE FEE IN FULL IS PAYABLE WITH THE COMPLETION OF EACH UNIT AS A PREREQUISITE FOR RECEIVING THE CERTIFICATE OF OCCUPANCY. THE UNIT. THE FEE RATE TO BE PAID IS THE FEE IN EFFECT AT THE TIME OF RECORDING THE SITE PLAN AND FINAL PLAT.

**OUTLOT SUMMARY TABLE**

OUTLOT	AREA (SF)	USE	OWNERSHIP/MAINTENANCE
"A"	34,537	DETENTION POND/DRAINAGE EASEMENT	SSC INVESTORS, LLC
"B"	42,866	DETENTION POND/DRAINAGE EASEMENT	SSC INVESTORS, LLC

**NOTES:**

OUTLOT MAINTENANCE RESPONSIBILITIES SHALL BE THE RESPONSIBILITY OF THE BUSINESS ASSOCIATION.

**MAYOR'S CERTIFICATE:**

I HEREBY CERTIFY THAT THE PLAT OF THE ABOVE DESCRIBED PROPERTY IS APPROVED BY THE CITY OF LONGMONT, COLORADO, AND THAT THE MAYOR HEREBY ACCEPTS ALL PUBLIC STREETS, EASEMENTS, RIGHTS-OF-WAY, AND OTHER PLACES DESIGNATED OR DESCRIBED AS FOR PUBLIC USE FOR ALL PURPOSES INDICATED ON THIS PLAT.

MAYOR: Sharon Hark

CITY OF LONGMONT

ATTEST: Sharon Hark



**SURVEYOR'S CERTIFICATE:**

I CERTIFY THIS PLAT ACCURATELY REPRESENTS THE RESULTS OF A SURVEY MADE BY ME OR UNDER MY DIRECT SUPERVISION, AND IS COMPLETED ACCORDING TO APPLICABLE STATE OF COLORADO REQUIREMENTS.

I FURTHER CERTIFY THIS PLAT IS ACCURATE TO THE BEST OF MY KNOWLEDGE, INFORMATION, AND BELIEF, IN ACCORDANCE WITH APPLICABLE STANDARDS OF PRACTICE, AND IS NOT A GUARANTEE OR WARRANTY, EITHER EXPRESSED OR IMPLIED.

D. Wolterstorff  
4/12/24

DARREN R. WOLTERSTORFF, PLS 38281  
FOR AND ON BEHALF OF KIMLEY-HORN AND ASSOCIATES, INC.  
DARREN.WOLTERSTORFF@KIMLEY-HORN.COM

**CLERK & RECORDER'S CERTIFICATE:**

STATE OF \_\_\_\_\_

COUNTY OF \_\_\_\_\_

I HEREBY CERTIFY THAT THIS INSTRUMENT WAS FILED IN CLERK & RECORDER'S OFFICE AT \_\_\_\_\_ O'CLOCK, \_\_\_\_\_ M. THIS \_\_\_\_\_ DAY OF \_\_\_\_\_, 20\_\_\_\_ A.D. AND DULY RECORDED UNDER RECEPTION NUMBER \_\_\_\_\_

RECORDER \_\_\_\_\_

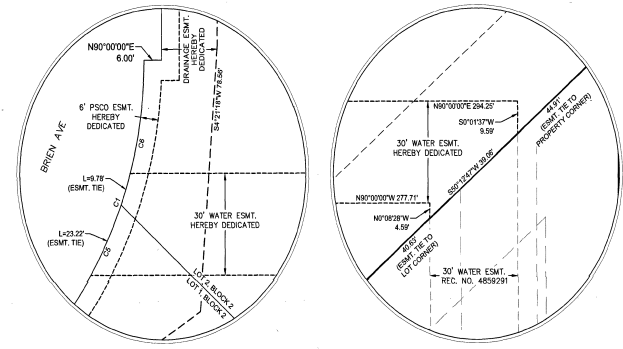
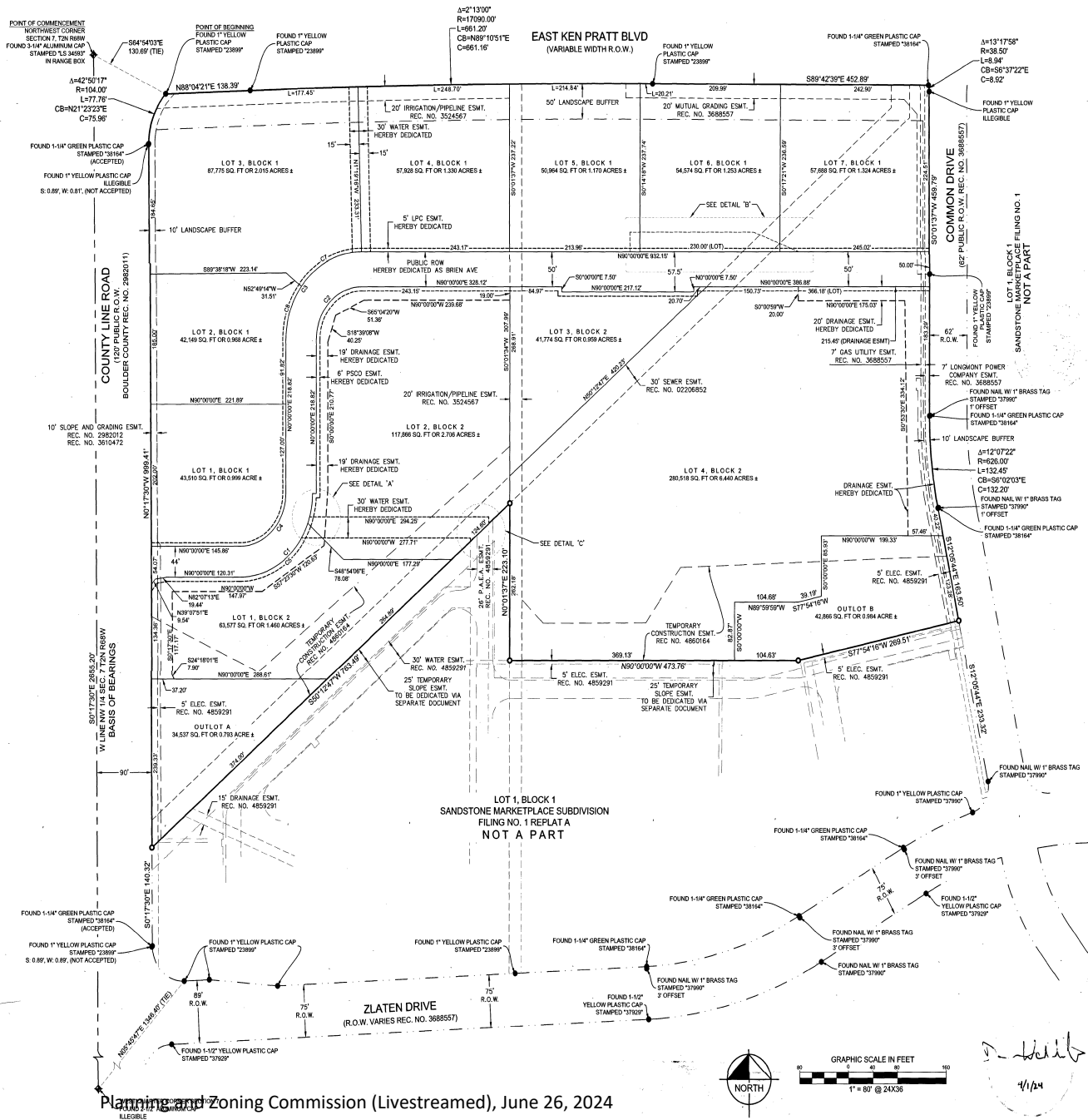
FEES \_\_\_\_\_

DEPUTY \_\_\_\_\_

	6	3/28/24	REV.
	5	2/2/24	REV.
	4	1/3/24	REV.
	3	11/30/23	REV.
	2	9/22/23	REV.
No.	DATE	REVISION DESCRIPTION	

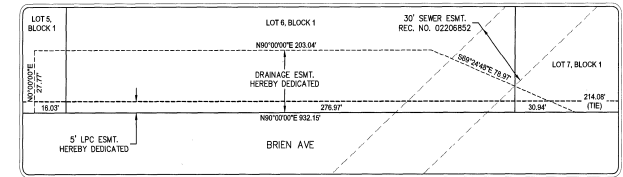
<b>Kimley»Horn</b>			
8200 SOUTH SYRACUSE WAY, STE 300 DENVER, COLORADO 80231			
Tel. No. (303) 228-2200 www.kimley-horn.com			
Scale	Drawn by	Checked by	Date
NA	PTM	DRW	Mar. 2024
Project No.	196589000	Sheet No.	1 OF 2

FINAL PLAT  
**SANDSTONE MARKETPLACE SUBDIVISION FILING NO. 1 REPLAT B**  
A REPLAT OF LOTS 2 THRU 6, BLOCK 1, SANDSTONE MARKETPLACE SUBDIVISION FILING NO. 1, REPLAT A  
LOCATED IN THE NORTHWEST QUARTER OF SECTION 7, TOWNSHIP 2 NORTH, RANGE 68 WEST OF THE 6TH P.M.,  
CITY OF LONGMONT, COUNTY OF WELD, STATE OF COLORADO



DETAIL 1  
1" = 20'

DETAIL 'C'  
1" = 20'



DETAIL 'B'  
1" = 30'

NO.	DELTA	RADIUS	LENGTH	CHORD BEARING	CHORD
C1	90°00'00"	119.00'	186.92'	N45°00'00"E	168.29'
C2	90°00'00"	75.00'	117.81'	N45°00'00"E	106.07'
C3	52°49'14"	125.00'	115.24'	N61°35'23"W	111.20'
C4	90°00'00"	75.00'	117.81'	N45°00'00"E	106.07'
C5	69°01'59"	119.00'	143.38'	N59°29'00"E	134.86'
C6	20°58'01"	119.00'	43.55'	N10°29'00"E	43.30'
C7	52°49'14"	125.00'	115.24'	S61°35'23"W	111.20'
C8	37°10'48"	125.00'	81.11'	S18°35'23"W	79.79'

**LEGEND**

- SECTION CORNER FOUND AS NOTED
- PROPERTY CORNER FOUND AS NOTED
- PROPERTY CORNER SET - SET 18" LONG NO. 5 REBAR
- WITH 1-1/4" YELLOW PLASTIC CAP STAMPED "PLS 38261"
- (M) MEASURED DIMENSION
- (R) RECORD DIMENSION

LPC LONGMONT POWER COMPANY

**LINE TYPE LEGEND**

	BOUNDARY LINE
	EASEMENT LINE AS NOTED
	PROPOSED EASEMENT LINE AS NOTED
	SECTION LINE
	RIGHT-OF-WAY LINE
	LOT LINE
	LANDSCAPE BUFFER LINE

## Traffic Impact Study

# Sandstone Marketplace

Longmont, Colorado

Prepared for:

**Actis, LLC**

**Kimley»Horn**

# T R A F F I C   I M P A C T   S T U D Y

## **Sandstone Marketplace**

Longmont, Colorado

**Prepared for  
Actis, LLC**

755 Delaware Avenue  
Longmont, Colorado 80501

**Prepared by  
Kimley-Horn and Associates, Inc.**

4582 South Ulster Street  
Suite 1500  
Denver, Colorado 80237  
(303) 228-2300



September 2023

*This document, together with the concepts and designs presented herein, as an instrument of service, is intended only for the specific purpose and client for which it was prepared. Reuse of and improper reliance on this document without written authorization and adaptation by Kimley-Horn and Associates, Inc. shall be without liability to Kimley-Horn and Associates, Inc.*

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## 1.0 EXECUTIVE SUMMARY

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This report has been prepared to document the results of a Traffic Impact Study for the Sandstone Marketplace mixed-use project proposed to be located on the southeast corner of Ken Pratt Boulevard (SH-119) and County Line Road intersection in Longmont, Colorado. Sandstone Marketplace is proposed to include senior adult housing, a day care center, medical office uses, retail uses, and restaurant uses. It is expected that Sandstone Marketplace will be completed in the next several years; therefore, analysis was conducted for the 2025 short-term buildout horizon as well as the 2045 long-term twenty-year planning horizon.

The purpose of this traffic study is to identify project traffic generation characteristics to determine potential project traffic related impacts on the local street system and to develop the necessary mitigation measures required for the identified traffic impacts. The following intersections were incorporated into this traffic study based on the City of Longmont requested scope:

- Ken Pratt Boulevard (SH-119) and County Line Road
- Ken Pratt Boulevard (SH-119) and Common Drive
- Ken Pratt Boulevard (SH-119) and Zlaten Drive
- County Line Road and Zlaten Drive
- Zlaten Drive and Timm Way/Common Drive

In addition, two proposed full movement accesses along Common Drive and a proposed three-quarter access along County Line Road were evaluated.

Regional access to Sandstone Marketplace will be provided by Interstate 25 (I-25) and SH-119 while primary access will also be provided by SH-119. Direct access will be provided by a full movement access along Common Drive that will align to the existing driveway serving the retail center to the east and an additional full movement access along Common Drive, approximately 360 feet south of SH-119 (measured center to center). In addition, a three-quarter movement access along County Line Road will provide direct access to the commercial uses on the western portion of the development. The driveway curb returns are existing for the access along County Line Road and the north access along Common Drive.

Accounting for internal capture, Sandstone Marketplace is expected to generate approximately 9,546 weekday external daily trips, with 833 of these trips occurring during the morning peak hour and 908 of these trips occurring during the afternoon peak hour. With pass-by trips, expected net new trips (non-pass-by) to the surrounding street network results in approximately 6,156 weekday daily new trips, of which 512 trips are anticipated during the morning peak hour and 627 trips are anticipated during the afternoon peak hour.

Based on the analysis presented in this report, Kimley-Horn believes Sandstone Marketplace will be successfully incorporated into the existing and future roadway network. Analysis of the existing street network, the proposed project development, and expected traffic volumes resulted in the following conclusions and recommendations:

### **2025 Recommendations:**

- The threshold for requiring an access permit along Colorado Department of Transportation (CDOT) roadways occurs when project traffic is anticipated to increase the existing access traffic volumes by more than 20 percent. Based on traffic projections, the addition of project traffic on the south leg of Zlaten Drive is not anticipated to increase existing access traffic volumes by more than 20 percent, with the maximum expected increase at 0 percent during the afternoon peak hour on the south leg (0/251). Therefore, a CDOT access permit is not anticipated to be required in association with this project at the Zlaten Drive. However, based on traffic projections, the addition of project traffic on the south legs of County Line Road and Common Drive along SH-119 are anticipated to increase existing traffic by more than 20 percent. Therefore, access permits are anticipated to be needed at these two intersections as development occurs.
- With completion of the Sandstone Marketplace project, two full movement accesses are proposed along Common Drive with the south access aligning with the existing retail access, and a three-quarter access is proposed along County Line Road. It is recommended that a R1-1 “STOP” sign be installed on the eastbound approaches of the Common Drive accesses and the westbound approach of the County Line Road access. Since the County Line Road access is restricting left turn movements out of the development, a R3-2 “No Left Turn” sign is recommended to be installed below the R1-1 sign to warn driver’s that the movement is not permitted. A raised pork chop median island is already constructed in the driveway throat of

the access along County Line Road to further restrict exiting left turn movements at this access intersection. With construction of the County Line Road access, it is recommended that a northbound right turn lane be designated to a length of 220 feet plus a 120-foot taper to meet City of Longmont standards.

- The City of Longmont requested a signal warrant evaluation at the intersection of Zlaten Drive and County Line Road with the west leg being converted from three-quarter turning movements to full turning movements. It should be noted that although the west leg of this intersection technically restricts eastbound left turn and through movements, 19 eastbound left turn movements were observed during the morning peak hour at this intersection. With or without the addition of project traffic, this intersection is expected to meet the four-hour signal warrant; therefore, it is recommended that the City of Longmont consider signalization at this intersection. With signalization, it is recommended that the eastbound approach have one shared lane for all movements due to geometric constraints and the westbound approach consist of a 175-foot left turn lane, a through lane, and a 150-foot right turn lane. Of note, project traffic is anticipated to make up 5.5 percent of morning peak hour traffic and 5.1 percent of the afternoon peak hour traffic at this intersection during the 2025 build out horizon.
- The westbound dual left turn lanes at the SH-119 and Country Line Road intersection may need to be extended to a length of 440 feet (storage plus deceleration) plus a 220-foot taper.

#### **2045 Recommendations:**

- By 2045, SH-119 is planned to be improved to a six-lane roadway throughout the study area limits.
- If future volumes are realized, the westbound left turn lane at the intersection of Zlaten Drive and County Line Road may need to be further extended to 200 feet. Extension of the westbound left turn lane will require the taper from the back-to-back left turn lanes to be shortened from 125 feet to 75 feet.

#### **General Recommendations:**

- Any onsite or offsite improvements should be incorporated into the Civil Drawings and conform to standards of the City of Longmont, CDOT, and the Manual on Uniform Traffic Control Devices (MUTCD) – 2009 Edition.

## 2.0 INTRODUCTION

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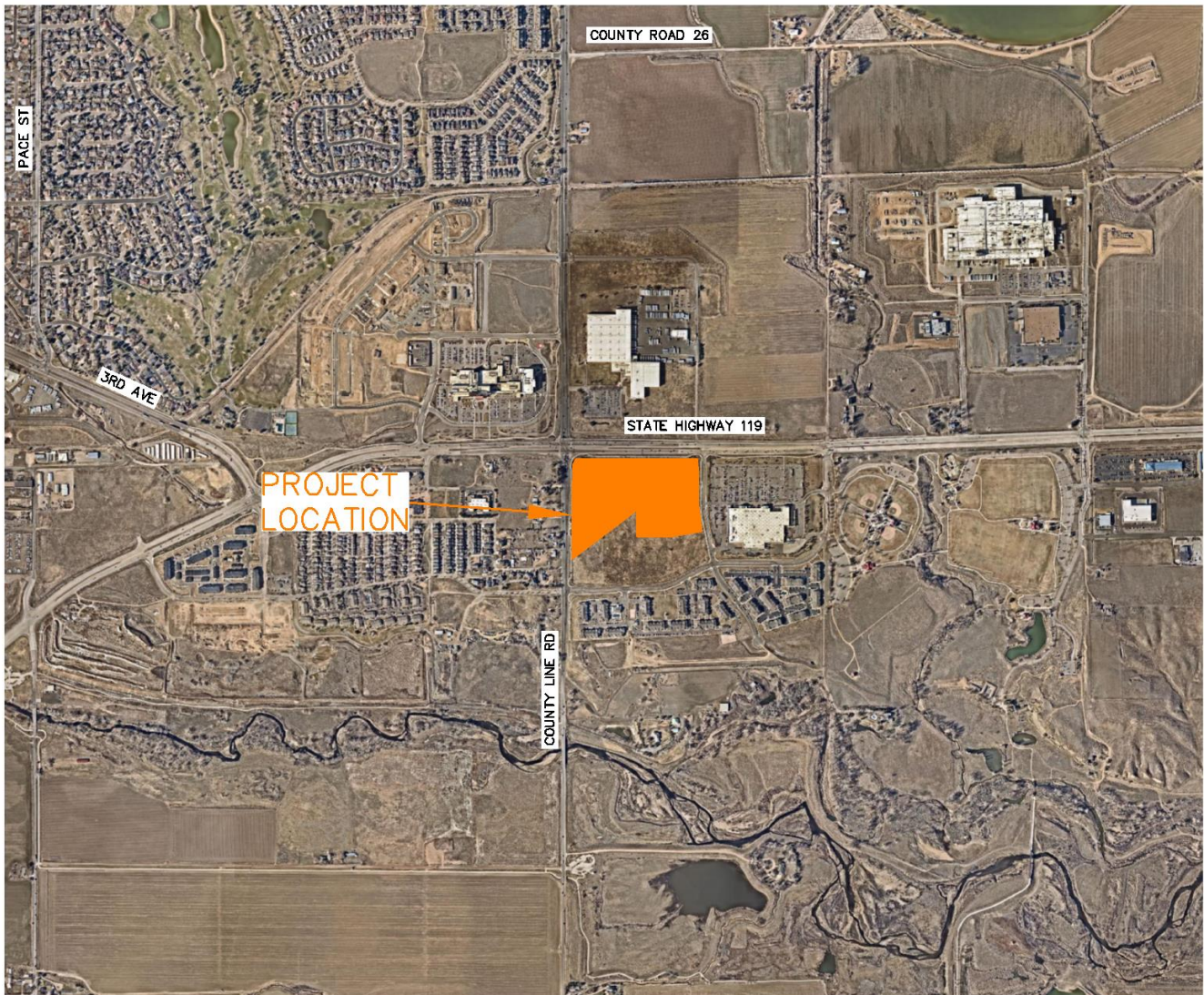
Kimley-Horn and Associates, Inc. has prepared this report to document the results of a Traffic Impact Study for the Sandstone Marketplace mixed-use project proposed to be located on the southeast corner of Ken Pratt Boulevard (SH-119) and County Line Road intersection in Longmont, Colorado. A vicinity map illustrating the Sandstone Marketplace development location is shown in **Figure 1**. Sandstone Marketplace is proposed to include senior adult housing, a day care center, medical office uses, retail uses, and restaurant uses. A conceptual site plan is attached in **Appendix H**. It is expected that Sandstone Marketplace will be completed in the next several years; therefore, analysis was conducted for the 2025 short-term buildout horizon as well as the 2045 long-term twenty-year planning horizon. The City of Longmont base assumptions form is included in **Appendix A**.

The purpose of this traffic study is to identify project traffic generation characteristics to determine potential project traffic related impacts on the local street system and to develop the necessary mitigation measures required for the identified traffic impacts. The following intersections were incorporated into this traffic study based on the City of Longmont requested scope:

- Ken Pratt Boulevard (SH-119) and County Line Road
- Ken Pratt Boulevard (SH-119) and Common Drive
- Ken Pratt Boulevard (SH-119) and Zlaten Drive
- County Line Road and Zlaten Drive
- Zlaten Drive and Timm Way/Common Drive

In addition, two proposed full movement accesses along Common Drive and a proposed three-quarter access along County Line Road were evaluated. Regional access to Sandstone Marketplace will be provided by Interstate 25 (I-25) and SH-119 while primary access will also be provided by SH-119. Direct access will be provided by a full movement access along Common Drive that will align to the existing driveway serving the retail center to the east and an additional full movement access along Common Drive, approximately 360 feet south of SH-119 (measured center to center). In addition, a three-quarter movement access along County Line Road will provide direct access to the commercial uses on the western portion of the development. The driveway curb returns are existing for the access along County Line Road and the north access along Common Drive.





SANDSTONE MARKETPLACE  
LONGMONT, COLORADO  
VICINITY MAP

FIGURE 1

## 3.0 EXISTING AND FUTURE CONDITIONS

---

### 3.1 Existing Study Area

The existing site is currently vacant. To the south are multifamily homes with a Walmart Supercenter to the east. SH-119 roadway fronts the development to the north with industrial and agricultural land extending to the north. The UCHealth Longs Peak Hospital is located on the northwest corner of SH-119 and County Line Road.

### 3.2 Existing Roadway Network

SH-119 extends east/west with two through lanes of travel in each direction. The posted speed limit along SH-119 is 55 miles per hour and transitions to 65 miles per hour east of County Line Road. Sidewalks exist on the north and south side of the roadway near the studied intersections with exception of the south side of SH-119 west of County Line Road and east of Zlaten Drive.

County Line Road extends northbound and southbound with two through lanes in each direction near the study intersections. Bicycle lanes are provided on both sides of the roadway and a sidewalk is constructed on the west side County Line Road. The posted speed limit is 45 miles per hour.

Common Drive/Timm Way provides one through lane in each direction extending northbound and southbound. This north-south roadway is named Timm Way south of Zlaten Drive and Common Drive north of Zlaten Drive. Sidewalks are constructed on the east and west side of the roadway with two mid-block pedestrian crossings provided north of Zlaten Drive.

Zlaten Drive is a two-lane divided roadway extending mostly in the eastbound and westbound. The roadway provides bicycle lanes on the north and south side along with sidewalks. The posted speed limit along Zlaten Drive is 35 miles per hour.

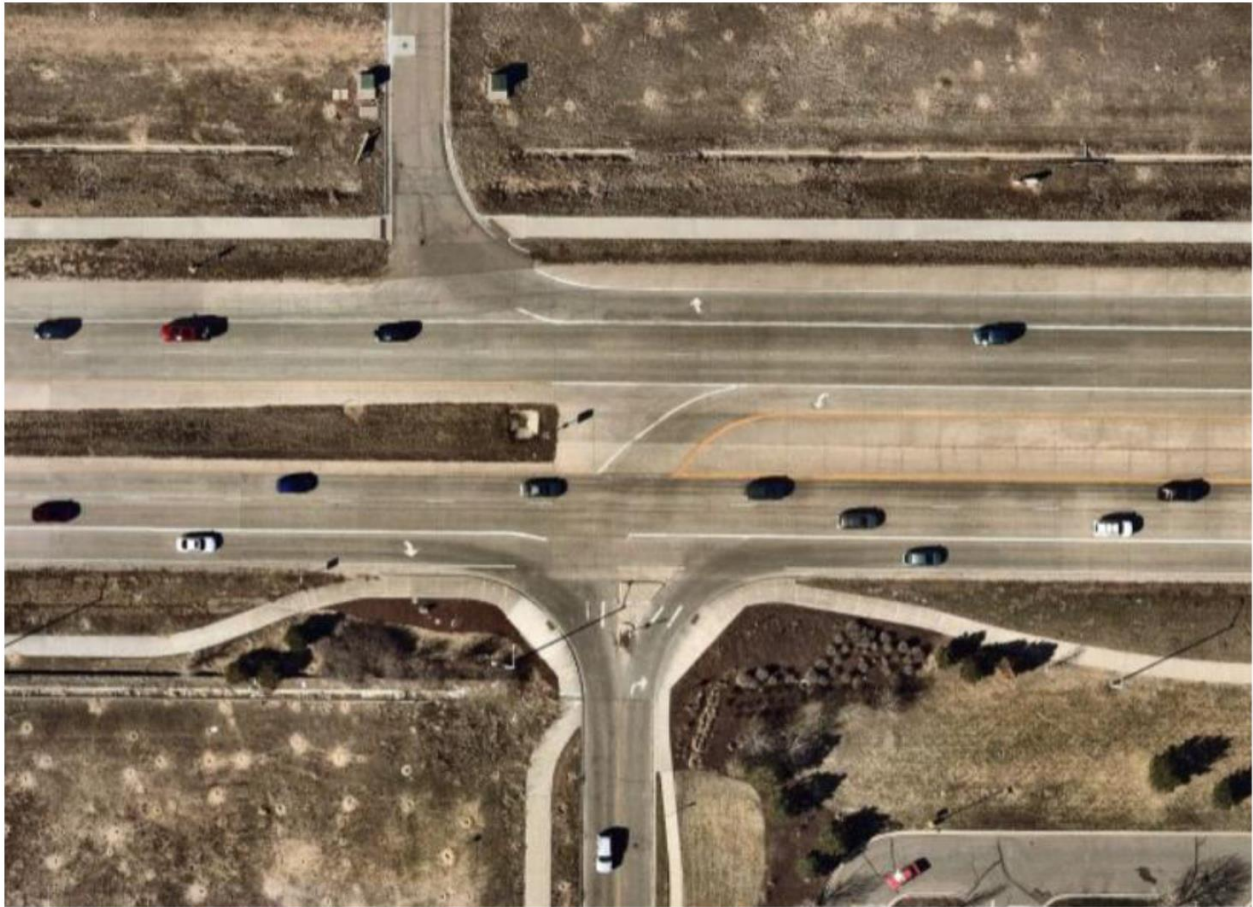


The signalized intersection of SH-119 and County Line Road operates with protected left turn phasing on all four approaches. The northbound and southbound approaches of County Line Road provide dual left turn lanes, two through lanes, and a right turn lane with the right turn movements operating under free conditions. The eastbound and westbound approaches of SH-119 both provide dual left turn lanes, two through lanes, and a right turn lane. An aerial photo of the existing intersection configuration is below (north is up - typical).



*SH-119 & County Line Road*

The unsignalized intersection of SH-119 and Common Drive operates with stop control on the northbound approach of Common Drive. The northbound approach provides a single lane, restricted to right turn movements only that operate with free movements. The eastbound approach of SH-119 provides two through lanes and a separate right turn lane. The westbound approach of SH-119 provides a left turn lane, two through lanes, and a right turn lane. An aerial photo of the existing intersection configuration is below.



*SH-119 & Common Drive*

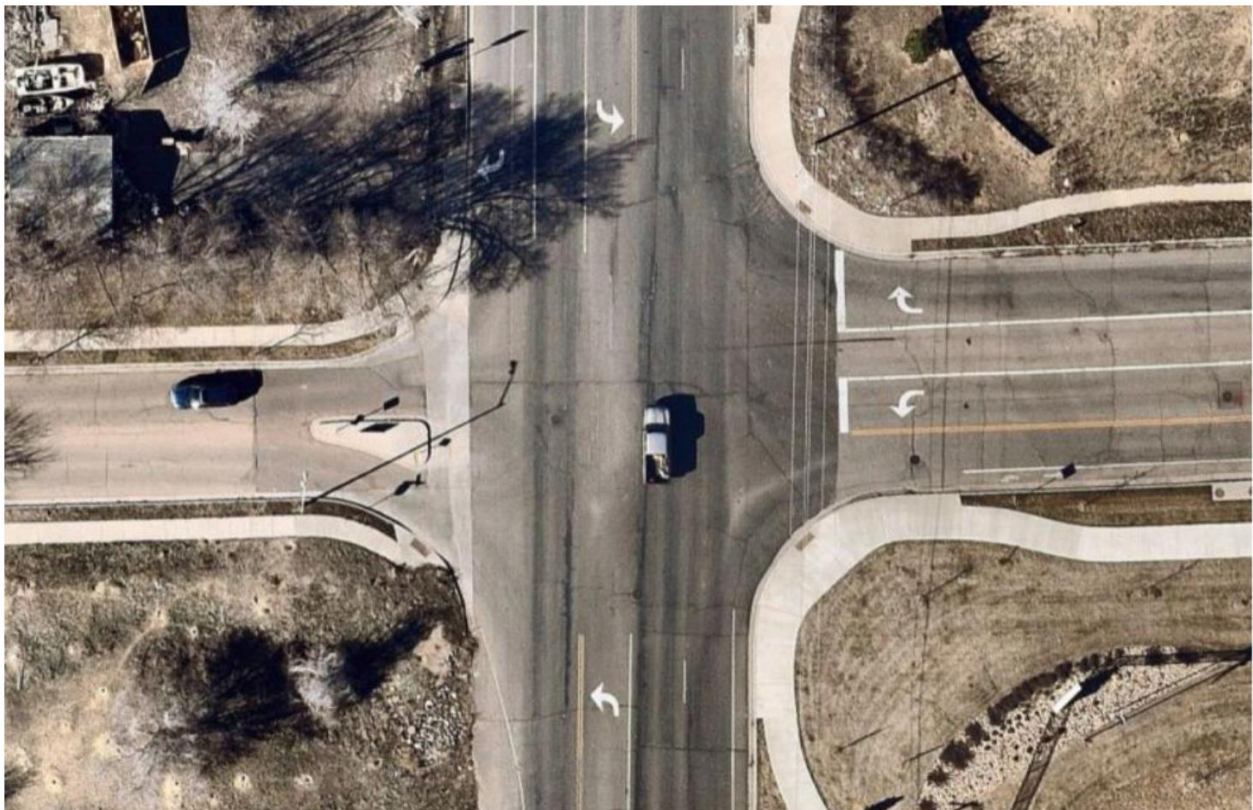


The signalized intersection of SH-119 and Zlaten Drive operates with protected-only left turn phasing on the eastbound and westbound approaches of SH-119 and permissive-only left turn phasing on the northbound and southbound approaches of Zlaten Drive. The northbound approach provides dual left turn lanes and a shared through/right turn lane. The eastbound approach provides a left turn lane, two through lanes, and a right turn lane while the westbound approach provides a left turn lane, a through lane, and a shared through/right turn lane. The north leg of this intersection will be reconstructed with development of the 7-Eleven Ken Pratt & Zlater project. An aerial photo of the existing intersection configuration is below.



*SH-119 & Zlaten Drive*

The intersection of the Zlaten Drive and County Line Road operates with stop control on the eastbound approach of Great Western Drive and the westbound approach of Zlaten Drive. The eastbound approach provides a single lane, restricted to right turn movement only, whereas the westbound approach provides separate left and right turn lanes. The northbound approach of County Line Road provides a left turn lane and two through lanes with the outside through lane being a shared right. The southbound approach of County Line Road provides a left turn lane, a through lane, and a right turn lane. An aerial photo of the existing intersection configuration is below.



*Zlaten Drive & County Line Road*

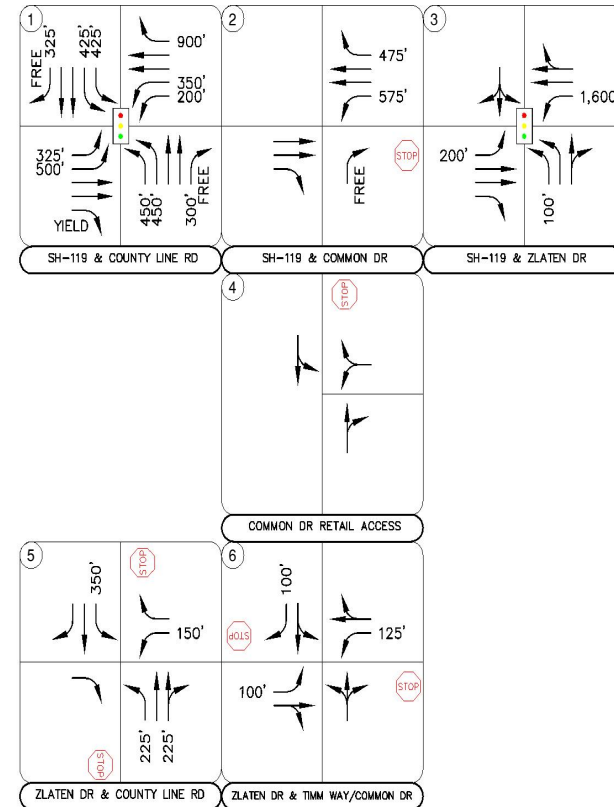
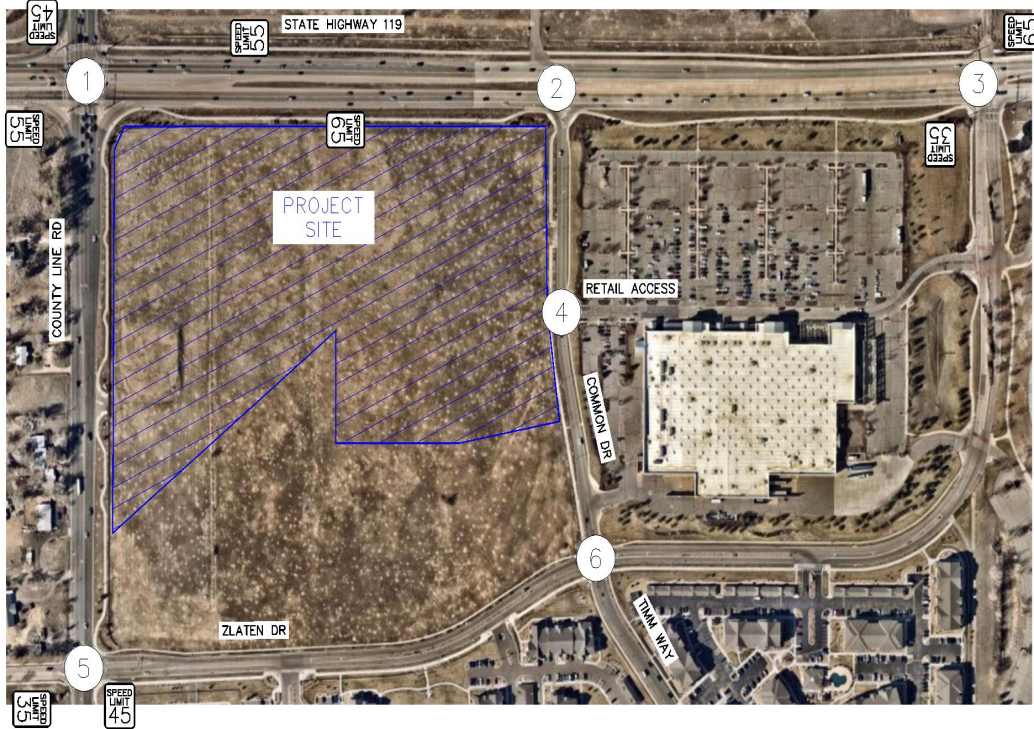


The intersection of the Zlaten Drive and Timm Way/Common Drive operates with stop control on the northbound and southbound approaches of Timm Way/Common Drive. The eastbound and westbound approaches of Zlaten Drive provide a left turn lane and a shared through/right turn lane. The northbound approach provides a single lane approach for shared movements while the southbound approach provides a shared left turn/through lane and a separate right turn lane. An aerial photo of the existing intersection configuration is below.



*Zlaten Drive & Timm Way/Common Drive*

The intersection lane configuration and control for the study area intersections are shown in **Figure 2**.



SANDSTONE MARKETPLACE  
 LONGMONT, COLORADO  
 EXISTING GEOMETRY AND CONTROL

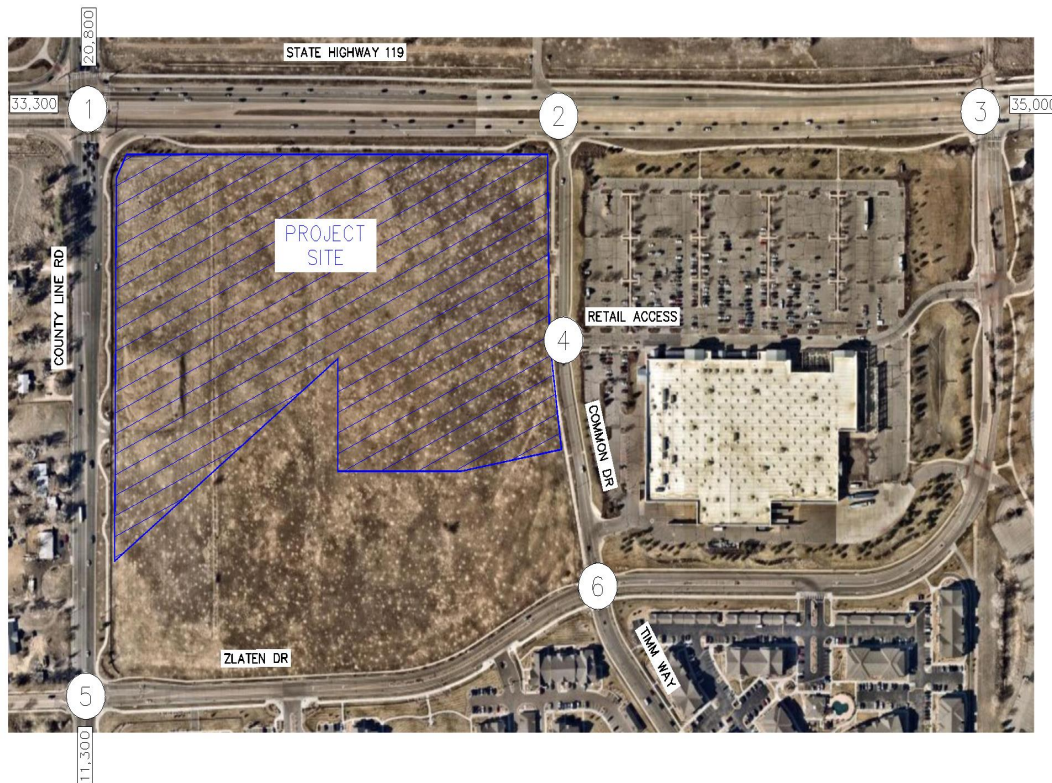
### 3.3 Existing Traffic Volumes

Existing turning movement counts were conducted at the study intersections on Thursday, August 25, 2022, during the weekday morning and afternoon peak hours. The counts were conducted during the morning and afternoon peak hours of adjacent street traffic in 15-minute intervals from 7:00 AM to 9:00 AM and 4:00 PM to 6:00 PM on this count date. The existing intersection traffic volumes are shown in **Figure 3** with count sheets provided in **Appendix B**.

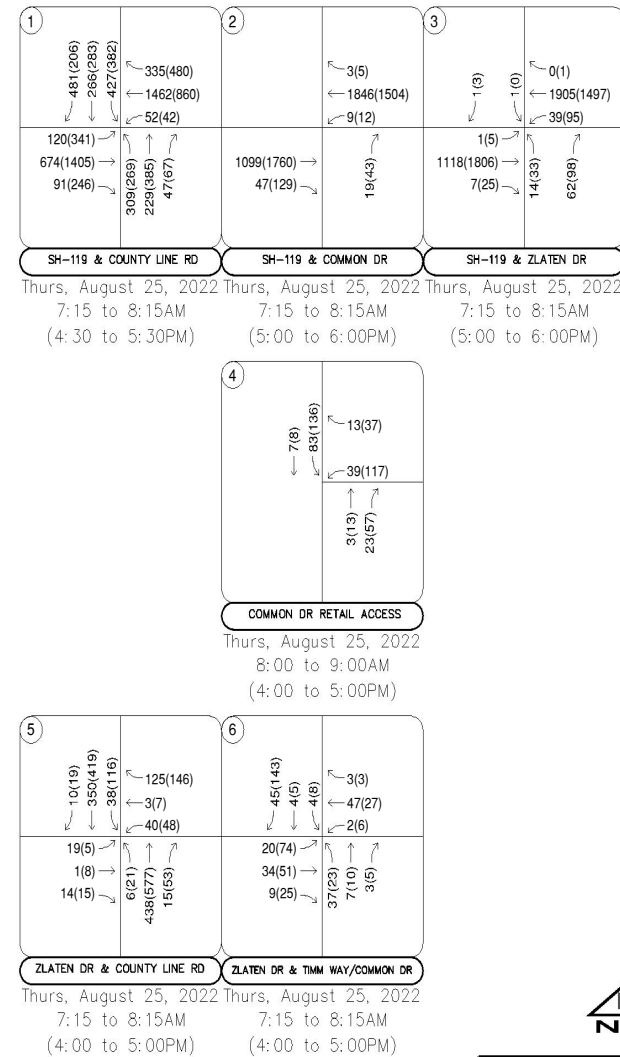
### 3.4 Unspecified Development Traffic Growth

According to traffic projections from the Longmont Roadway Plan Traffic Projection model, the area surrounding the site is expected to have an average 25-year growth factor of 1.63. This growth factor equates to an annual growth rate of two (2) percent. Future traffic volume projections and growth rate calculations are provided in **Appendix C**. Therefore, two (2) percent annual growth rate was used to calculate future traffic volumes at the study area intersections. This annual growth rate was used to estimate short-term 2025 and long-term 2045 traffic volume projections at the key intersections. In addition, four (4) traffic studies within the project's site area were included in the background traffic volumes. The project traffic associated with the developments in the *Highlands Residential Project Traffic Impact Study* prepared in July 2020, the *Sandstone Ranch Multifamily Traffic Impact Report* prepared in June 2021, the *Springs at Longmont Traffic Impact Analysis* prepared in September 2020, and the *7-Eleven Ken Pratt & Zlaten Traffic Impact Study* prepared in March 2021 were all directly added to the studied intersections and represented in the background traffic volumes for both the 2025 and 2045 horizons. Applicable documents from the background studies are attached in **Appendix C**. The calculated background traffic volumes for 2025 and 2045 are shown in **Figure 4** and **Figure 5**, respectively.





SANDSTONE MARKETPLACE  
LONGMONT, COLORADO  
2022 EXISTING TRAFFIC VOLUMES

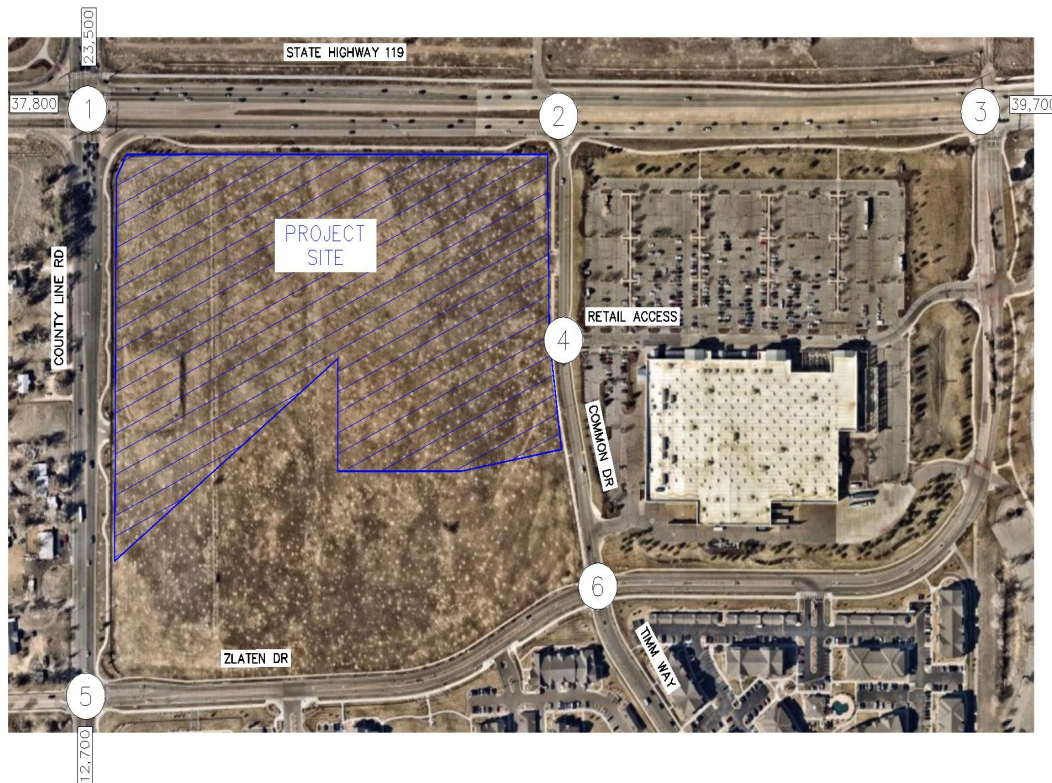


**LEGEND**

- (X) Study Area Key Intersection
- XXX(XXX) Weekday AM(PM)  
Peak Hour Traffic Volumes
- [XX,X00] Estimated Daily Traffic Volume

FIGURE 3





<b>1</b> 520(224) 307(327) 485(436) 366(534) 1619(985) 55(45) 137(387) 781(1562) 109(304) 401(321) 254(437) 50(71)	<b>2</b> 3(5) 2037(1693) 21(42) 1269(1947) 55(160) 49(66)	<b>3</b> 64(55) 13(12) 64(52) 63(55) 2048(1663) 48(118) 64(59) 1255(1962) 7(27) 15(35) 14(11) 83(116)
SH-119 & COUNTY LINE RD	SH-119 & COMMON DR	SH-119 & ZLATEN DR
<b>4</b> 23(60) 83(136) 13(37) 39(117) 32(34) 23(57)		
COMMON DR RETAIL ACCESS		
<b>5</b> 11(20) 391(460) 65(185) 218(205) 11(12) 59(63) 20(5) 4(16) 15(16) 6(22) 470(632) 27(72)	<b>6</b> 65(166) 13(36) 4(8) 3(3) 64(45) 7(17) 41(92) 53(67) 18(55) 91(50) 16(18) 17(15)	
ZLATEN DR & COUNTY LINE RD	ZLATEN DR & TIMM WAY/Common DR	

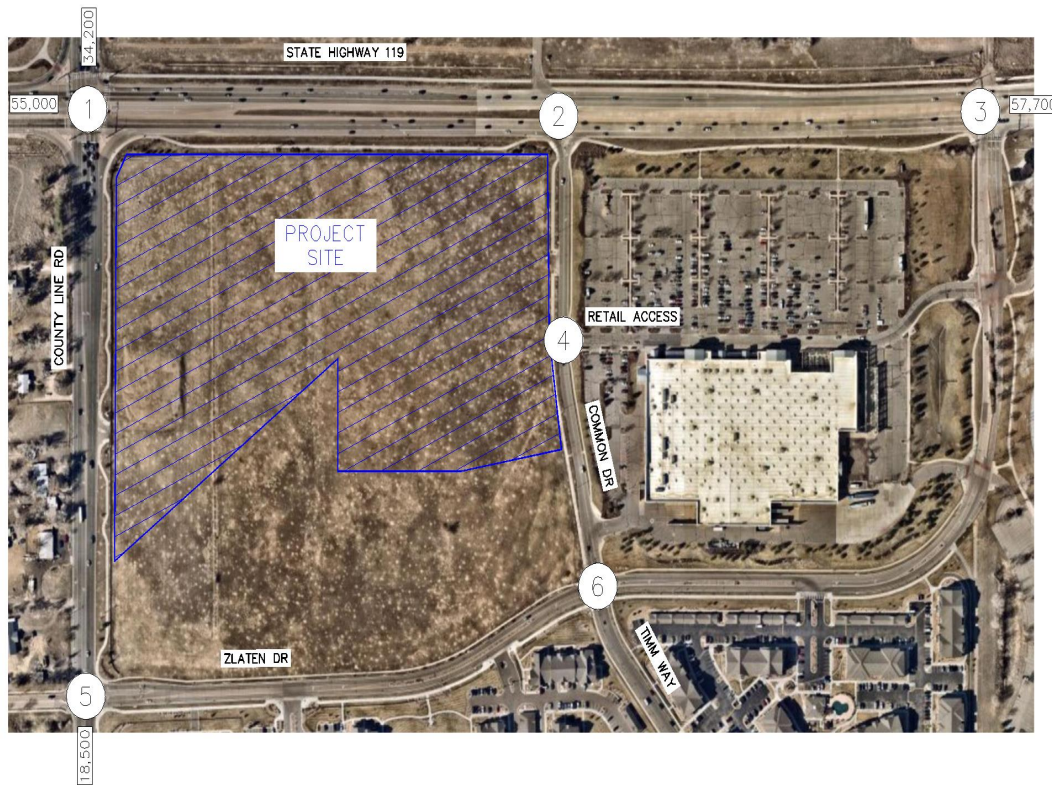
SANDSTONE MARKETPLACE  
LONGMONT, COLORADO  
2025 BACKGROUND TRAFFIC VOLUMES



**LEGEND**

- (X) Study Area Key Intersection
- XXX(XXX) Weekday AM(PM)  
Peak Hour Traffic Volumes
- XX,X00 Estimated Daily Traffic Volume

FIGURE 4



<b>1</b> 768(330) → 444(473) → 715(833) → 199(563) → 1129(2287) → 155(431) → 560(460) → 372(635) → 74(106) →	<b>2</b> 538(782) → 2373(1428) → 82(66) → 1836(2854) → 79(226) → 59(88) →	<b>3</b> 5(8) → 2989(2469) → 25(48) → 64(55) → 13(12) → 64(52) → 63(55) → 3030(2435) → 68(167) → 64(59) → 1832(2893) → 11(39) → 22(52) → 14(11) → 115(167) →
SH-119 & COUNTY LINE RD	SH-119 & COMMON DR	SH-119 & ZLATEN DR
<b>4</b> 27(65) → 83(136) → 13(37) → 39(117) → 34(40) → 23(57) →		
COMMON DR RETAIL ACCESS		
<b>5</b> 16(30) → 572(676) → 85(245) → 282(280) → 13(16) → 80(88) → 30(8) → 5(21) → 22(24) → 9(33) → 696(930) → 35(100) →	<b>6</b> 86(239) → 15(39) → 6(13) → 5(5) → 88(59) → 8(20) → 52(130) → 71(93) → 22(67) → 110(62) → 20(23) → 19(18) →	
ZLATEN DR & COUNTY LINE RD	ZLATEN DR & TIMM WAY/Common Dr	

SANDSTONE MARKETPLACE  
LONGMONT, COLORADO  
2045 BACKGROUND TRAFFIC VOLUMES



#### LEGEND

- (X) Study Area Key Intersection
- XXX(XXX) Weekday AM(PM)  
Peak Hour Traffic Volumes
- XX,X00 Estimated Daily Traffic Volume

FIGURE 5

## 4.0 PROJECT TRAFFIC CHARACTERISTICS

---

### 4.1 Trip Generation

Site-generated traffic estimates are determined through a process known as trip generation. Rates and equations are applied to the proposed land use to estimate traffic generated by the development during a specific time interval. The acknowledged source for trip generation rates is the *Trip Generation Manual*<sup>1</sup> published by the Institute of Transportation Engineers (ITE). ITE has established trip rates in nationwide studies of similar land uses. For this study, Kimley-Horn used the ITE Trip Generation Report average rates that apply to Senior Adult Housing (ITE Land Use Code 252), Day Care Center (ITE 565), Medical-Dental Office Building (ITE 720), Strip Retail Plaza (ITE 822), Fast-Casual Restaurant (ITE 930), High-Turnover Sit-Down Restaurant (ITE 932), and Fast-Food with Drive-Through (ITE 934) for traffic associated with the development.

Since the full buildout of the Sandstone Marketplace is proposed to contain a mix of uses, internal capture trips are expected to occur on site as well. These internal capture trips are shared trips from vehicles already within the internal street network. These shared trips reduce the number of total external trips and were calculated directly per the ITE procedure. In addition, since the project is a commercial development, pass-by trips are expected. These pass-by trips are vehicles already on the street network that will be attracted to the development. The pass-by percentages were obtained from the ITE *Trip Generation Manual, 11<sup>th</sup> Edition*.

Accounting for internal capture, Sandstone Marketplace is expected to generate approximately 9,546 weekday external daily trips, with 833 of these trips occurring during the morning peak hour and 908 of these trips occurring during the afternoon peak hour. With pass-by trips, expected net new trips (non-pass-by) to the surrounding street network results in approximately 6,156 weekday daily new trips, of which 512 trips are anticipated during the morning peak hour and 627 trips are anticipated during the afternoon peak hour. Calculations were based on the procedure and information provided in the ITE *Trip Generation Manual, 11<sup>th</sup> Edition – Volume 1: User's Guide and Handbook*, 2021. **Table 1** summarizes the estimated trip generation for the Sandstone Marketplace. The trip generation worksheets are included in **Appendix D**.

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<sup>1</sup> Institute of Transportation Engineers, *Trip Generation Manual*, Eleventh Edition, Washington DC, 2021.



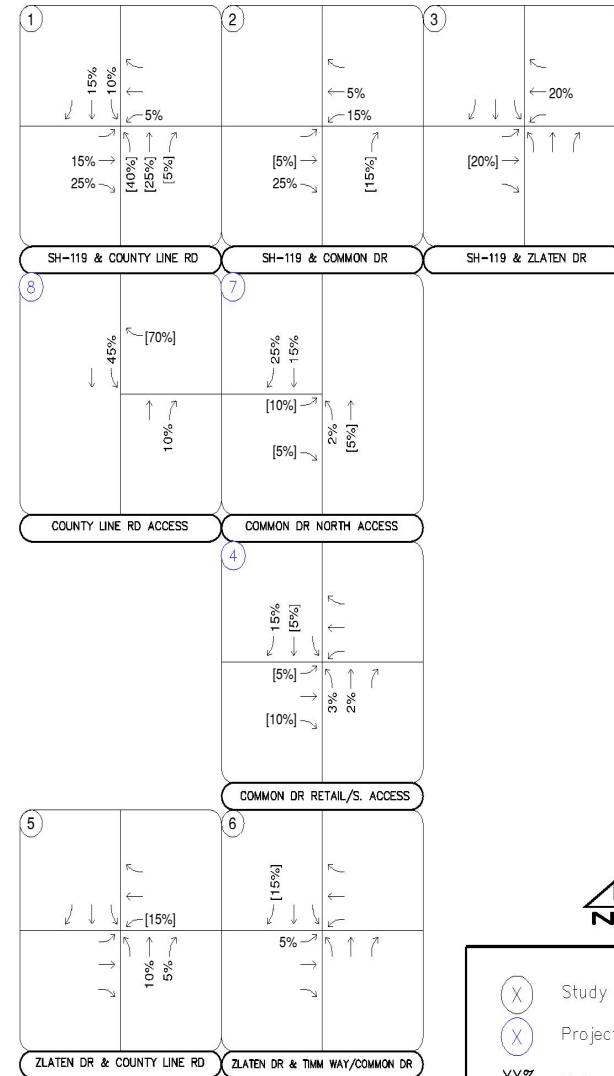
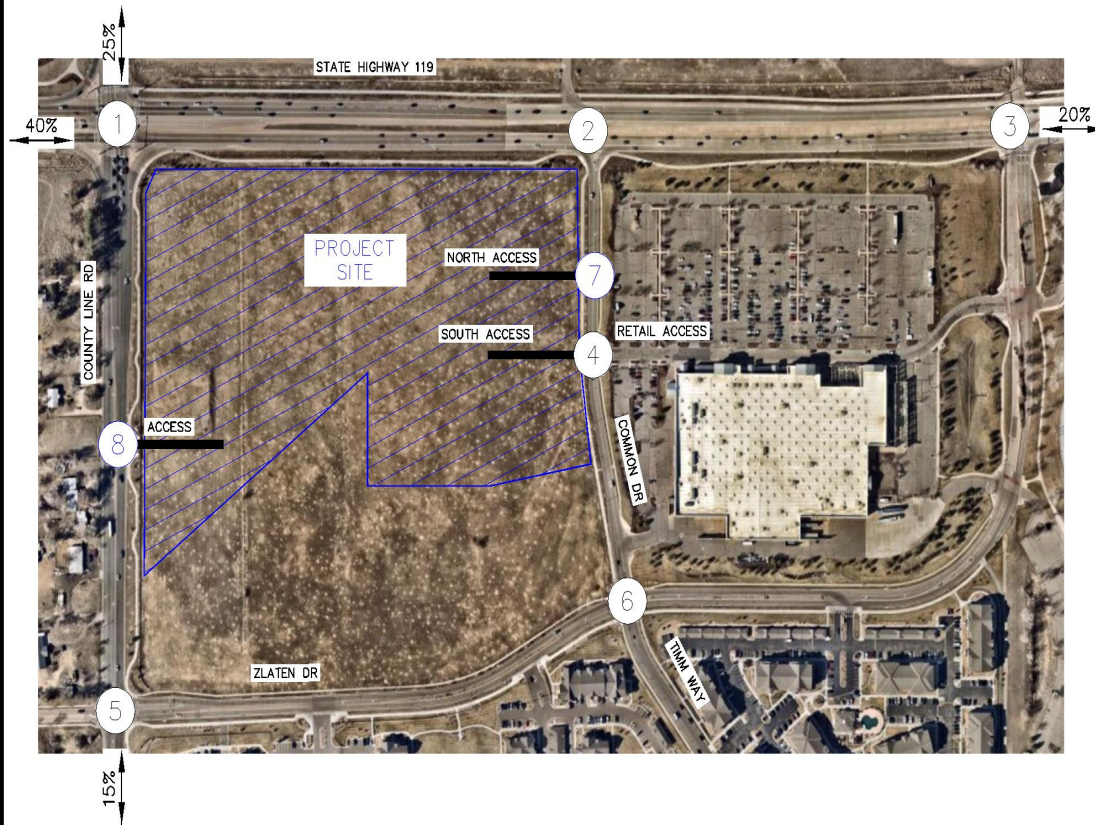
**Table 1 – Sandstone Marketplace Traffic Generation**

Land Use and Size	Weekday Vehicle Trips						
	Daily	AM Peak Hour			PM Peak Hour		
		In	Out	Total	In	Out	Total
Senior Adult Housing Attached (ITE 252) 130 Dwelling Units	422	9	17	26	18	15	33
Medical-Dental Office Building (ITE 720) 60,000 Square Feet	2,160	147	39	186	71	165	236
Day Care Center (ITE 565) 10,000 Square Feet	478	58	52	110	52	59	111
Strip Retail Plaza (ITE 822) 30,900 Square Feet	1,682	44	29	73	102	102	204
Fast Casual Restaurant (ITE 930) 11,500 Square Feet	1,118	8	8	16	79	65	144
High Turnover Restaurant (ITE 932) 6,000 Square Feet	644	31	26	57	33	21	54
Fast-Food w/ DT (ITE 934) 11,500 Square Feet	5,378	262	251	513	198	182	380
<b>Total Project Trips</b>	<b>11,882</b>	<b>559</b>	<b>422</b>	<b>981</b>	<b>553</b>	<b>609</b>	<b>1,162</b>
<b>Total Project Trips after Internal Capture</b>	<b>9,546</b>	<b>485</b>	<b>348</b>	<b>833</b>	<b>426</b>	<b>482</b>	<b>908</b>
<b>Non Pass-By Trips</b>	<b>6,156</b>	<b>318</b>	<b>192</b>	<b>512</b>	<b>280</b>	<b>347</b>	<b>627</b>
<b>Pass-By Trips</b>	<b>3,390</b>	<b>167</b>	<b>156</b>	<b>321</b>	<b>146</b>	<b>135</b>	<b>281</b>

#### 4.2 Trip Distribution

Distribution of site traffic on the street system was based on the area street system characteristics, existing traffic patterns, existing and anticipated surrounding demographic information, and the proposed access system for the project. The directional distribution of traffic is a means to quantify the percentage of site-generated traffic that approaches the site from a given direction and departs the site back to the original source. The project non-pass-by trip distribution for the proposed development is illustrated in **Figure 6**.

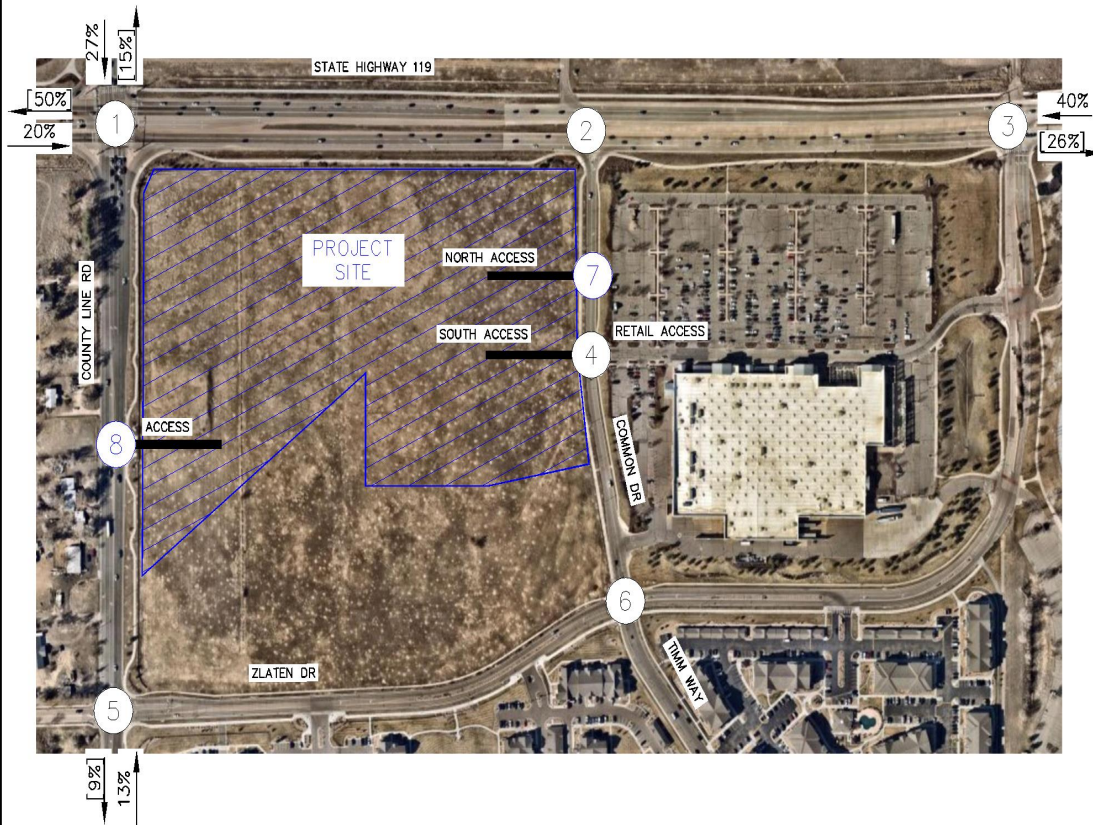
Since this project contains commercial uses, traffic passing by the site is anticipated to be attracted, whether on a random trip or captured from a typical commute trip. Pass-by distribution of traffic is a means to quantify the percentage of project generated traffic that approaches the site from a given direction that then departs the site continuing in that same original direction. The expected weekday morning and afternoon peak hour pass-by trip distributions were calculated based on actual traffic volumes. Directional differences in the morning and afternoon peak hour traffic were accounted for as shown in **Figures 7 and 8**, respectively, to illustrate the anticipated pass-by trip distribution.



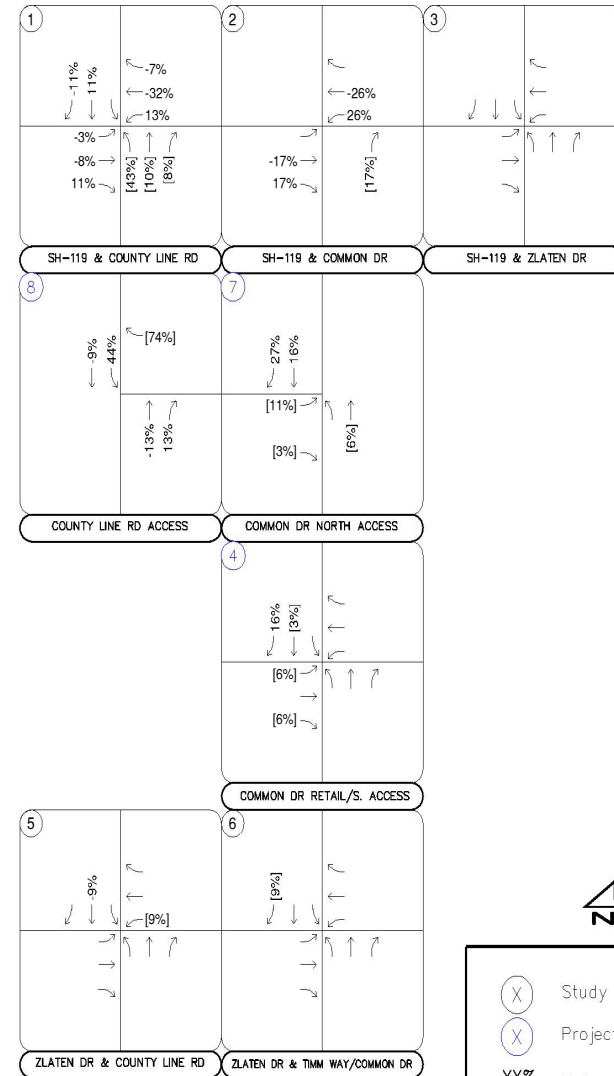
#### LEGEND

- (X) Study Area Key Intersection
- (X) Project Access Intersection
- XX% External Trip Distribution Percentage
- XX%[XX%] Entering[Exiting]  
Trip Distribution Percentage

FIGURE 6



SANDSTONE MARKETPLACE  
LONGMONT, COLORADO  
AM PASS-BY PROJECT TRIP DISTRIBUTION

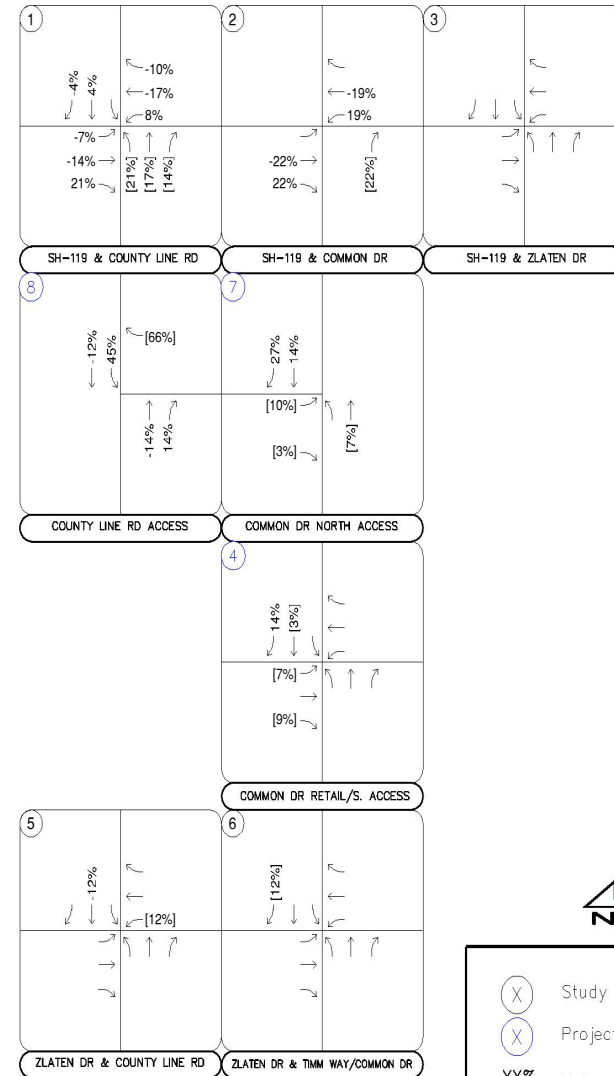
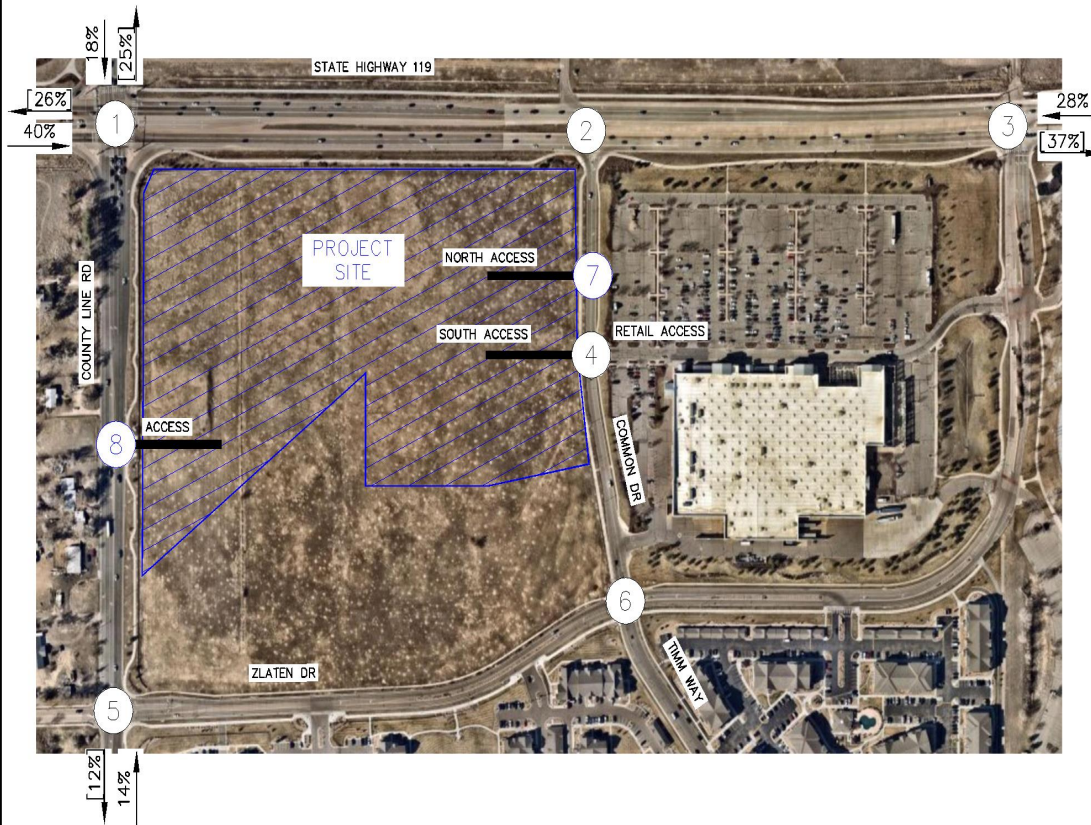


#### LEGEND

- (X) Study Area Key Intersection
- (X) Project Access Intersection
- XX% External Trip Distribution Percentage
- XX%[XX%] Entering[Exiting] Trip Distribution Percentage

FIGURE 7





#### LEGEND

- (X) Study Area Key Intersection
- (X) Project Access Intersection
- XX% External Trip Distribution Percentage
- XX%[XX%] Entering[Exiting] Trip Distribution Percentage

FIGURE 8

SANDSTONE MARKETPLACE  
LONGMONT, COLORADO  
PM PASS-BY PROJECT TRIP DISTRIBUTION

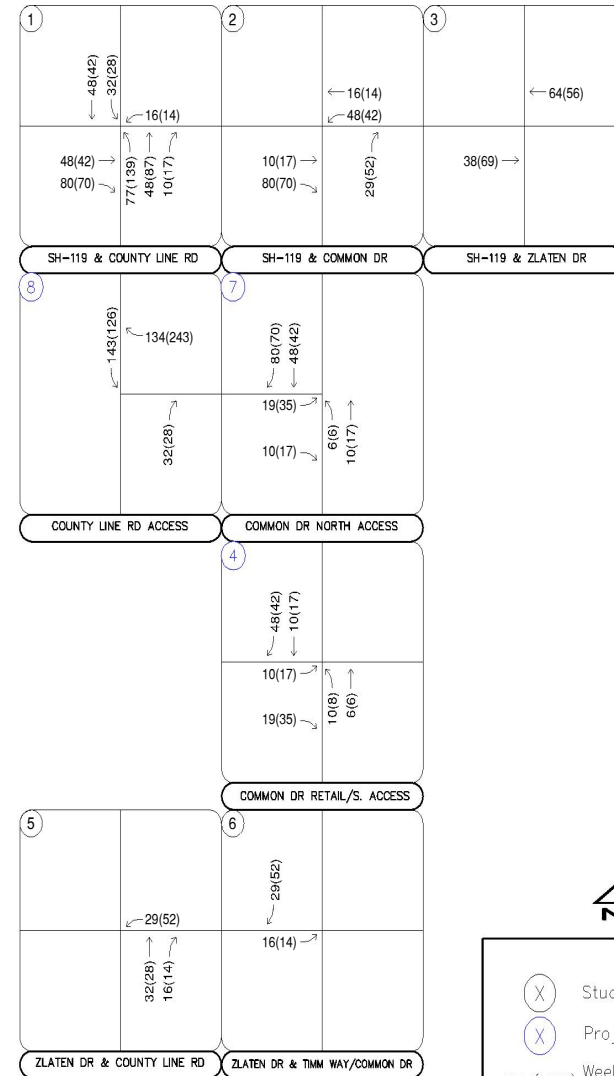
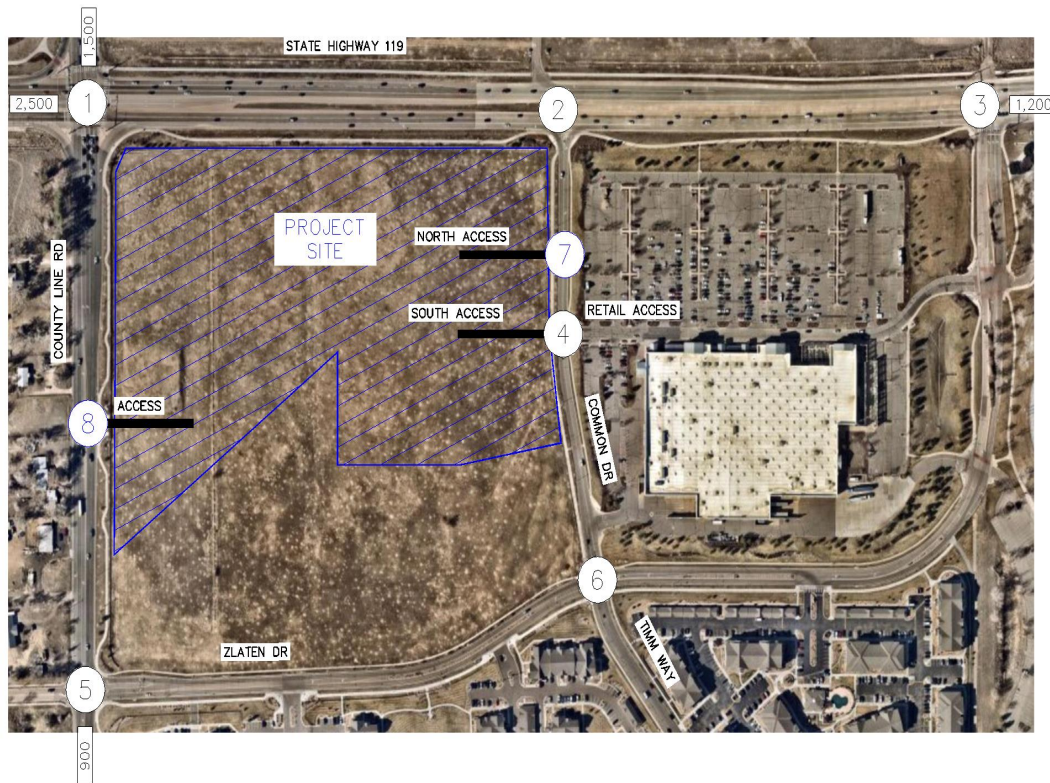
#### 4.3 Traffic Assignment

Sandstone Marketplace traffic assignment was obtained by applying the project trip distribution to the estimated traffic generation of the development shown in **Table 1**. Project non-pass-by traffic assignment is shown in **Figure 9**, while **Figure 10** illustrates the expected pass-by traffic assignment for the development.

#### 4.4 Total (Background Plus Project) Traffic

Site traffic volumes were added to the background volumes to represent estimated traffic conditions for the short-term 2025 buildout horizon and long-term 2045 twenty-year planning horizon. These total traffic volumes for the study area are illustrated for the 2025 and 2045 horizon years in **Figures 10** and **11**, respectively.

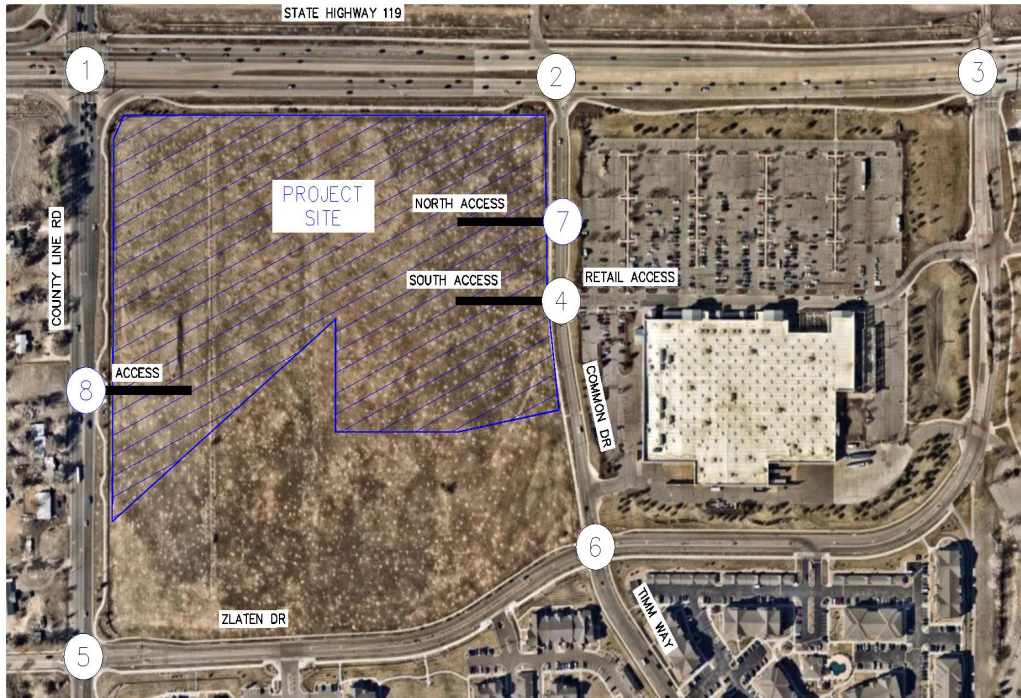




#### LEGEND

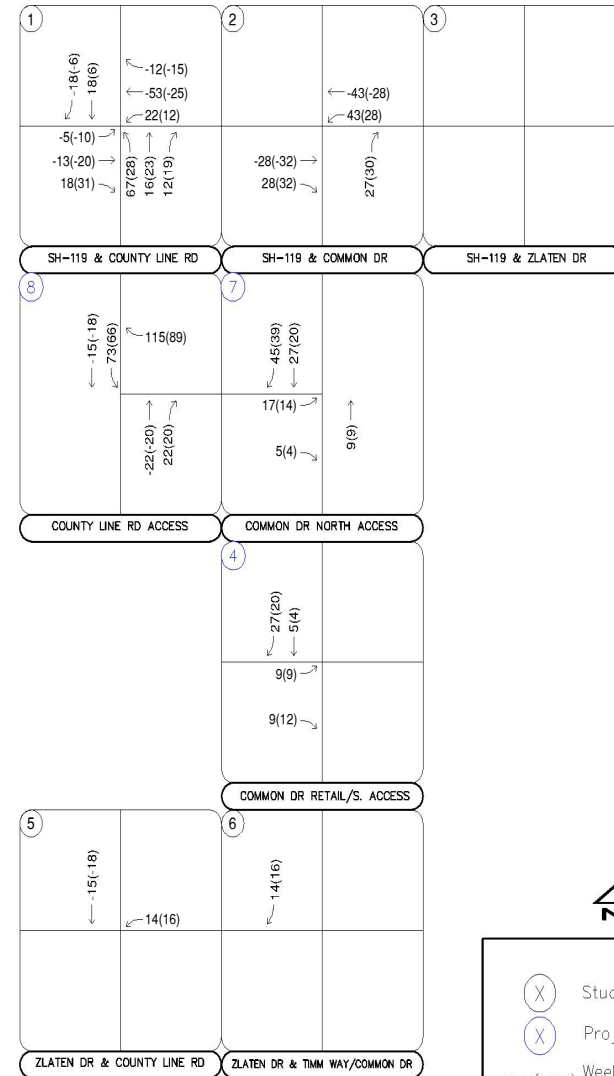
- (X) Study Area Key Intersection
- (X) Project Access Intersection
- xxx(xxx) Weekday AM(PM)
- Peak Hour Traffic Volumes
- xx,x00 Estimated Daily Traffic Volume

FIGURE 9



SANDSTONE MARKETPLACE  
LONGMONT, COLORADO  
PASS-BY TRAFFIC ASSIGNMENT

Planning and Zoning Commission (Livestreamed), June 26, 2024

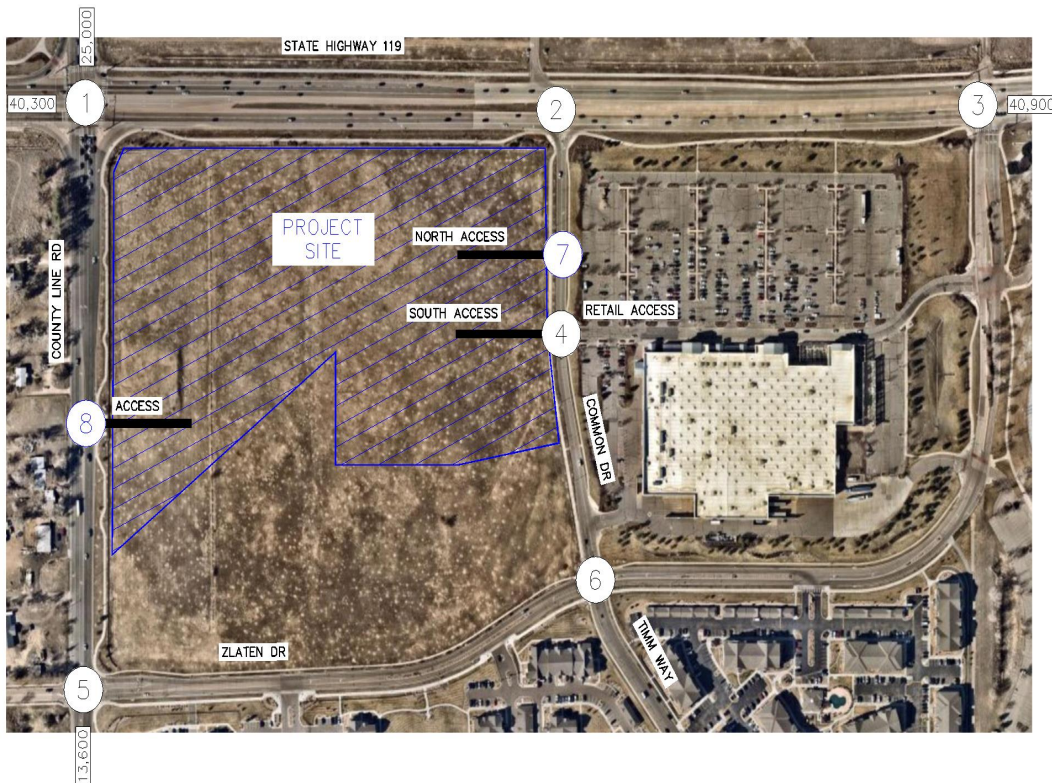


LEGEND

- (X) Study Area Key Intersection
- (X) Project Access Intersection
- xxx(xxx) Weekday AM(PM)  
Peak Hour Traffic Volumes
- xx,x00 Estimated Daily Traffic Volume

FIGURE 10





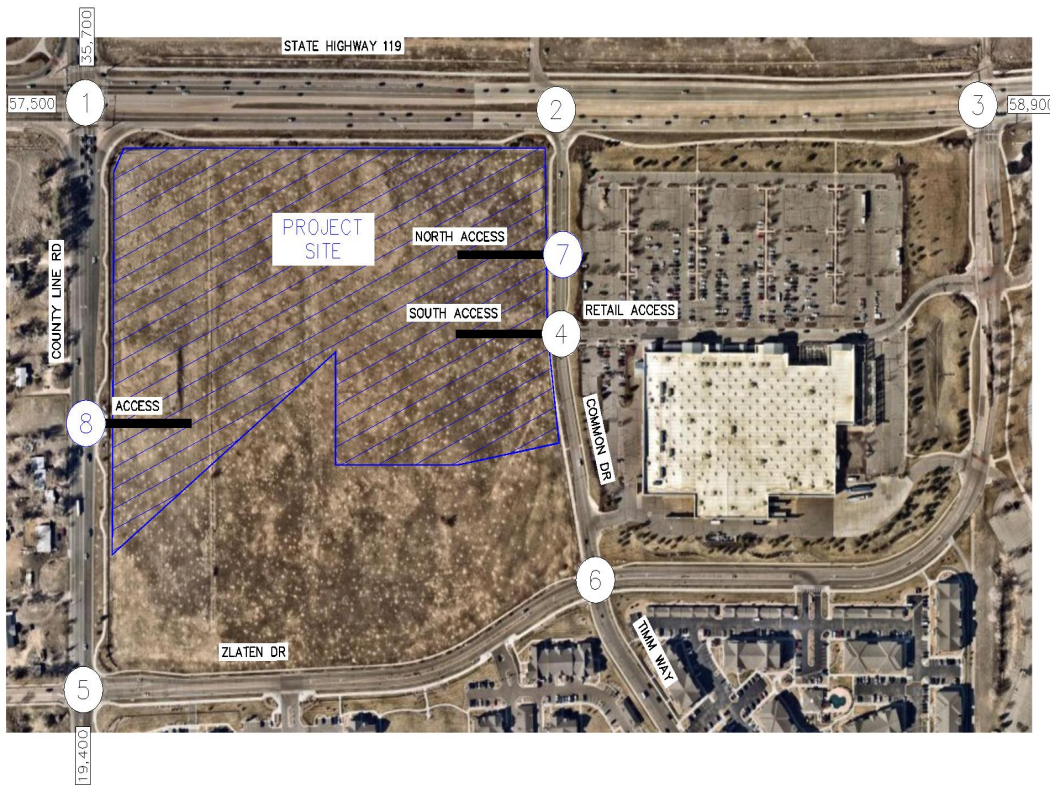
<b>1</b> 502(218) 373(375) 527(464) 132(377) 816(1584) 207(405) 545(488) 318(547) 72(107)	<b>2</b> 354(519) 1566(960) 93(71) 1251(1932) 163(262) 105(148)	<b>3</b> 3(5) 2010(1679) 112(112) 64(55) 13(12) 64(52) 63(55) 2112(1719) 48(118) 64(59) 1293(2031) 7(27) 15(35) 14(11) 83(116)
SH-119 & COUNTY LINE RD	SH-119 & COMMON DR	SH-119 & ZLATEN DR
<b>8</b> 452(647) 218(192) 249(332) 683(809) 54(48)	<b>7</b> 125(109) 181(258) 36(49) 15(21) 6(6) 64(97)	
COUNTY LINE RD ACCESS	COMMON DR NORTH ACCESS	
	<b>4</b> 75(62) 38(81) 83(136) 13(37) 39(117) 19(26) 28(47) 10(8) 38(40) 23(57)	
	COMMON DR RETAIL/S. ACCESS	
<b>5</b> 11(20) 376(442) 65(185) 20(5) 4(16) 15(16) 6(22) 502(650) 43(86)	<b>6</b> 218(205) 11(12) 102(131) 57(106) 53(67) 18(55) 108(234) 13(36) 4(8) 3(3) 64(45) 7(17) 91(50) 16(18) 17(15)	
ZLATEN DR & COUNTY LINE RD	ZLATEN DR & TIMM WAY/COMMON DR	



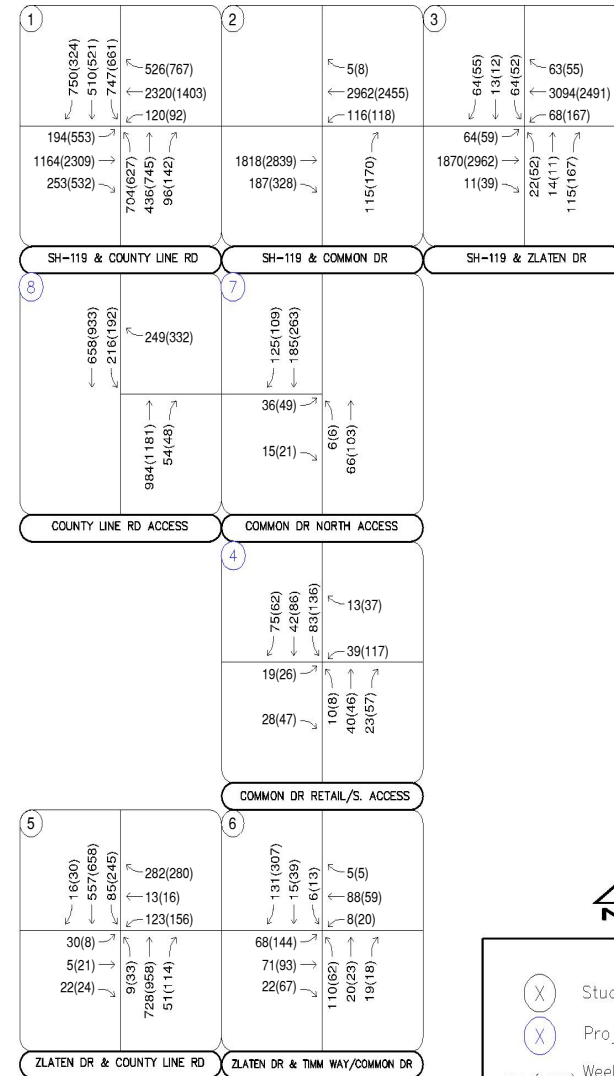
#### LEGEND

- (X) Study Area Key Intersection
- (X) Project Access Intersection
- xxx(xxx) Weekday AM(PM)
- Peak Hour Traffic Volumes
- xx,x00 Estimated Daily Traffic Volume

FIGURE 11



SANDSTONE MARKETPLACE  
LONGMONT, COLORADO  
2045 TOTAL TRAFFIC VOLUMES



#### LEGEND

- (X) Study Area Key Intersection
- (X) Project Access Intersection
- xxx(xxx) Weekday AM(PM)  
Peak Hour Traffic Volumes
- xx,x00 Estimated Daily Traffic Volume

FIGURE 12

## 5.0 TRAFFIC OPERATIONS ANALYSIS

Kimley-Horn's analysis of traffic operations in the site vicinity was conducted to determine potential capacity deficiencies in the 2025 and 2045 development horizons at the identified key intersections. The acknowledged source for determining overall capacity is the current edition of the *Highway Capacity Manual (HCM)*<sup>2</sup>.

### 5.1 Analysis Methodology

Capacity analysis results are listed in terms of Level of Service (LOS). LOS is a qualitative term describing operating conditions a driver will experience while traveling on a particular street or highway during a specific time interval. It ranges from A (very little delay) to F (long delays and congestion). For intersections and roadways in this study area, standard traffic engineering practice recommends overall intersection LOS D and movement/approach LOS E as the minimum desirable thresholds for acceptable operations. **Table 2** shows the definition of level of service for signalized and unsignalized intersections.

**Table 2 – Level of Service Definitions**

Level of Service	Signalized Intersection Average Total Delay (sec/veh)	Unsignalized Intersection Average Total Delay (sec/veh)
A	≤ 10	≤ 10
B	> 10 and ≤ 20	> 10 and ≤ 15
C	> 20 and ≤ 35	> 15 and ≤ 25
D	> 35 and ≤ 55	> 25 and ≤ 35
E	> 55 and ≤ 80	> 35 and ≤ 50
F	> 80	> 50

Definitions provided from the Highway Capacity Manual, Sixth Edition, Transportation Research Board, 2016.

Study area intersections were analyzed based on average total delay analysis for signalized and unsignalized intersections. Under the unsignalized analysis, the LOS for a two-way stop-controlled intersection is determined by the computed or measured control delay and is defined for each minor movement. LOS for a two-way stop-controlled intersection is not defined for the intersection as a whole. LOS for signalized, roundabout, and all-way stop controlled intersections are defined for each approach and for the overall intersection.

<sup>2</sup> Transportation Research Board, *Highway Capacity Manual*, Sixth Edition, Washington DC, 2016.

## 5.2 Key Intersection Operational Analysis

Calculations for the operational level of service at the key intersections for the study area are provided in **Appendix E**. The existing year analysis is based on the lane geometry and intersection control shown in **Figure 2**. Existing peak hour factors were utilized in the existing and 2025 horizon analysis years while the HCM urban standard of 0.92 was used for the long-term 2045 horizon analysis. Based on increased national attention given to establishing appropriate yellow and all-red clearance intervals to improve intersection safety, these have been calculated and are applied for approaches at the signalized intersections. The increase in yellow and all red time sacrifices intersection capacity for improved safety. Synchro traffic analysis software was used to analyze the signalized, and unsignalized key intersections for HCM level of service.



### SH-119 and County Line Road

The signalized intersection of SH-119 and County Line Road operates with protected left turn phasing on all four approaches. The intersection operates acceptably at LOS D during both peak hours under existing conditions. Without project traffic, the intersection is anticipated to operate with LOS E during the morning peak hour in 2025 which exceeds the City of Longmont standard benchmark of LOS D without construction of the project. This benchmark failure can be mitigated with three through lanes in each direction. Since SH-119 is planned to be a six-lane highway in the future, an alternative analysis was provided at this intersection with three through lanes eastbound and westbound; however, it is unknown when this regional improvement will occur in the future. With this improvement, the intersection is anticipated to operate with LOS D in 2025 with project traffic during both peak hours. The eastbound and westbound auxiliary right turn lanes could be absorbed and converted to a shared through/right turn lane (typical of CDOT when transitioning from a four-lane roadway to a six-lane roadway), but that does not fully mitigate to LOS D and it would not be good practice to transition back to two through lanes in each direction both to the east and west with forced right turn lanes. It should be noted that a volume over capacity condition greater than 1 ( $V/C > 1$ ) and LOS E is a condition met without project traffic in 2025. Therefore, the project is not responsible for LOS E and  $V/C > 1$ . Therefore, the benchmark failure could be mitigated with three through lanes in each direction along SH-119, but that is likely not feasible without additional regional improvement with widening of SH-119 throughout the entire corridor east and west of the project. Therefore, it is believed that regional improvements should be considered along SH-119 in the near future. By 2045, SH-119 is planned to be improved to a six-lane roadway. With this improvement and without project traffic, the intersection is anticipated to operate with LOS F during the morning peak hour and LOS F during the afternoon peak hours in 2045. The capacity deficiency is if future traffic volumes are realized which includes a two percent annual growth and four adjacent developments included as background traffic. An alternative analysis was provided at this intersection with triple northbound and southbound left turn lanes. With this improvement, this intersection is anticipated to operate at LOS E during both peak hours. It is believed that this intersection will be built to its ultimate configuration with these improvements as County Line Road is not planned as a six-lane roadway and the northbound and southbound volumes are not believed to be high enough to warrant a third through lane. The capacity deficiencies in the future with the ultimate cross sections indicate that other regional improvements and connections are needed in the surrounding area. **Table 3** provides the results of the LOS analysis conducted at this intersection.

**Table 3 – SH-119 & County Line Road LOS Results**

Scenario	AM Peak Hour		PM Peak Hour	
	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
<b>2022 Existing</b>	54.2	D	45.6	D
<b>2025 Background</b>	70.5	E	52.1	D
<b>2025 Background Plus Project</b>	74.9	E	62.6	E
<b>2025 Background Plus Project #</b>	51.6	D	49.1	D
<b>2045 Background #</b>	103.6	F	75.6	E
<b>2045 Background Plus Project #</b>	112.8	F	98.2	F
<b>2045 Background Plus Project ##</b>	69.0	E	70.0	E

# = Three Through Lanes EB and WB, Free EB and WB Right Turns

## = # + Triple NB and SB Left Turn Lanes

### SH-119 and Common Drive

The unsignalized intersection of SH-119 and Common Drive operates with stop control on the northbound approach of Common Drive. The intersection movement operates acceptably at LOS B or better during both peak hours under existing conditions. The movements are anticipated to operate acceptably with the addition of project traffic throughout the 2025 horizon.

As stated previously, SH-119 is planned to be improved to a six-lane roadway by 2045. Therefore, with three through lanes in each direction along SH-119, the intersection movements are anticipated to operate with LOS D or better during the morning and afternoon peak hours through 2045 with project traffic. **Table 4** provides the results of the LOS analysis conducted at this intersection.

**Table 4 – SH-119 & Common Drive LOS Results**

Scenario	AM Peak Hour		PM Peak Hour	
	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
<b>2022 Existing</b> Westbound Left	8.8	A	12.1	B
<b>2025 Background</b> Westbound Left	9.5	A	15.1	C
<b>2025 Background Plus Project</b> Westbound Left	10.3	B	19.4	C
<b>2045 Background #</b> Westbound Left	11.1	B	20.3	C
<b>2045 Background Plus Project #</b> Westbound Left	12.7	B	26.9	D

# = Three Through Lanes EB and WB



### SH-119 and Zlaten Drive

The signalized intersection of SH-119 and Zlaten Drive operates with protected-only left turn phasing on the eastbound and westbound approaches of SH-119 and permissive-only left turn phasing on the northbound and southbound approaches of Zlaten Drive. The intersection operates acceptably at LOS B during both peak hours under existing conditions. The intersection is anticipated to operate acceptably with the addition of project traffic throughout the 2025 horizon. The north leg of this intersection will be reconstructed with development of the 7-Eleven Ken Pratt & Zlaten project.

As stated previously, SH-119 is planned to be improved to a six-lane roadway by 2045. Therefore, with three through lanes in each direction along SH-119, the intersection is anticipated to operate with LOS B during the morning and afternoon peak hours through 2045 with project traffic. **Table 5** provides the results of the LOS analysis conducted at this intersection.

**Table 5 – SH-119 & Zlaten Drive LOS Results**

Scenario	AM Peak Hour		PM Peak Hour	
	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
2022 Existing	13.6	B	19.0	B
2025 Background	14.2	B	18.7	B
2025 Background Plus Project	14.7	B	19.2	B
2045 Background #	12.8	B	16.7	B
2045 Background Plus Project #	13.1	B	16.8	B

# = Three Through Lanes EB and WB

### **Zlaten Drive and County Line Road**

The intersection of the Zlaten Drive and County Line Road operates with stop control on the eastbound approach of Great Western Drive and the westbound approach of Zlaten Drive. The movements operate acceptably at LOS D or better during both peak hours under existing conditions. The City of Longmont requested a signal warrant evaluation of this intersection with the west leg being converted from three-quarter turning movements to full turning movements. It should be noted that although the west leg of this intersection technically restricts eastbound left turn and through movements, 19 eastbound left turn movements were observed during the morning peak hour at this intersection. With or without the addition of project traffic, this intersection is expected to meet the four-hour signal warrant; therefore, it is recommended that the City of Longmont consider signalization at this intersection. Signal warrant analysis is provided in **Appendix F**. With signalization, it is recommended that the eastbound approach have one shared lane for all movements due to geometric constraints and the westbound approach consist of a left turn lane, a through lane, and a right turn lane. With these improvements, the intersection is anticipated to operate acceptably with the addition of project traffic throughout the long term 2045 horizon. Of note, project traffic is anticipated to make up 5.5 percent (75/1,373) of morning peak hour traffic and 5.1 percent (92/1,800) of the afternoon peak hour traffic at this intersection during the 2025 total scenario. **Table 6** provides the results of the LOS analysis conducted at this intersection.

**Table 6 – Zlaten Drive & County Line Road LOS Results**

Scenario	AM Peak Hour		PM Peak Hour	
	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
<b>2022 Existing</b>				
Northbound Left	8.1	A	8.3	A
Eastbound Approach	10.5	B	10.9	B
Westbound Left	17.2	C	26.9	D
Westbound Right	10.8	B	11.9	B
Southbound Left	8.5	A	9.4	A
<b>2025 Background</b>				
Northbound Left	8.2	A	8.4	A
Eastbound Approach	10.8	B	11.3	B
Westbound Left	21.1	C	46.6	E
Westbound Right	12.2	B	13.5	B
Southbound Left	8.7	A	10.3	B
<b>2025 Background #</b>	24.5	C	21.4	C
<b>2025 Background Plus Project #</b>	24.9	C	22.5	C
<b>2045 Background #</b>	28.8	C	30.4	C
<b>2045 Background Plus Project #</b>	29.1	C	31.2	C

# = Signalized, One Shared EB Lane for All Movements, WB Left Turn Lane, WB Through Lane, WB Right Turn Lane

### Zlaten Drive and Timm Way/Common Drive

The intersection of Zlaten Drive and Timm Way/Common Drive operates with stop control on the northbound and southbound approaches of Timm Way/Common Drive. The movements operate acceptably at LOS B or better during both peak hours under existing conditions. The movements are anticipated to operate acceptably with the addition of project traffic throughout the long term 2045 horizon. **Table 7** provides the results of the LOS analysis conducted at this intersection.

**Table 7 – Zlaten Drive & Timm Way/Common Drive LOS Results**

Scenario	AM Peak Hour		PM Peak Hour	
	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
<b>2022 Existing</b>				
Northbound Approach	10.2	B	11.4	B
Eastbound Left	7.4	A	7.4	A
Westbound Left	7.3	A	7.4	A
Southbound Left/Through	9.9	A	10.9	A
Southbound Right	8.7	A	9.0	A
<b>2025 Background</b>				
Northbound Approach	12.1	B	13.5	B
Eastbound Left	7.4	A	7.5	A
Westbound Left	7.4	A	7.5	A
Southbound Left/Through	10.9	B	12.5	B
Southbound Right	8.9	A	9.2	A
<b>2025 Background Plus Project</b>				
Northbound Approach	12.9	B	14.8	B
Eastbound Left	7.5	A	7.5	A
Westbound Left	7.4	A	7.5	A
Southbound Left/Through	11.1	B	12.7	B
Southbound Right	9.2	A	9.6	A
<b>2045 Background</b>				
Northbound Approach	13.7	B	17.3	C
Eastbound Left	7.5	A	7.6	A
Westbound Left	7.4	A	7.6	A
Southbound Left/Through	11.4	B	14.1	B
Southbound Right	9.2	A	9.8	A
<b>2045 Background Plus Project</b>				
Northbound Approach	15.2	C	20.5	C
Eastbound Left	7.6	A	7.6	A
Westbound Left	7.4	A	7.6	A
Southbound Left/Through	11.7	B	14.5	B
Southbound Right	9.5	A	10.3	B

## Project Accesses

With completion of the Sandstone Marketplace project, two full movement accesses are proposed along Common Drive with the south access aligning with the existing retail access, and a three-quarter access being proposed along County Line Road. It is recommended that a R1-1 “STOP” sign be installed on the eastbound approaches of the Common Drive accesses and the westbound approach of the County Line Road access, exiting the development. Since the County Line Road access is restricting left turn movements out of the development, a R3-2 No Left Turn sign is recommended to be installed below the R1-1 sign to warn driver’s that the movement is not permitted. A raised pork chop median island is already constructed in the driveway throat of the access along County Line Road to further restrict exiting left turn movements at this intersection. **Table 8** provides the results of the level of service for the project access intersections. As shown in the table, the project access intersections are anticipated to have all movements operating with acceptable LOS C or better during the peak hours in both the buildout year 2025 and the 2045 long term horizons.

**Table 8 – Project Access Level of Service Results**

Intersection	2025 Total				2045 Total			
	AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
<b>Common Drive South Access</b>								
Northbound Left	7.5	A	7.6	A	7.5	A	7.6	A
Eastbound Approach	10.3	B	11.8	B	10.2	B	11.6	B
Westbound Approach	11.9	B	18.8	C	11.4	B	17.6	C
Southbound Left	7.5	A	7.7	A	7.5	A	7.7	A
<b>Common Drive North Access</b>								
Northbound Left	8.0	A	8.1	A	8.1	A	8.4	A
Eastbound Approach	10.8	B	12.1	B	11.3	B	13.3	B
<b>County Line Rd Access</b>								
Westbound Approach	11.6	B	14.5	B	13.6	B	20.9	C
Southbound Left	9.0	A	9.0	A	9.8	A	10.5	B

### 5.3 CDOT Turn Bay Length Analysis

The threshold for requiring an access permit along Colorado Department of Transportation (CDOT) roadways occurs when project traffic is anticipated to increase the existing access traffic volumes by more than 20 percent. Based on traffic projections, the addition of project traffic on the south leg of Zlaten Drive is not anticipated to increase existing access traffic volumes by more than 20 percent, with the maximum expected increase at 0 percent during the afternoon peak hour on the south leg (0/251). Therefore, a CDOT access permit is not anticipated to be required in association with this project at the Zlaten Drive. However, based on traffic projections, the addition of project traffic on the south legs of County Line Road and Common Drive along SH-119 are anticipated to increase existing traffic by more than 20 percent. Therefore, access permits are anticipated to be needed at these two intersections as development occurs.

SH-119 is categorized as an NR-A roadway with a 55 miles per hour speed limit near the County Line Road intersection and 65 miles per hour eastbound near the Common Drive intersection. As such turn lanes requirements are to be designed per the State Highway Access Code. According to the State Highway Access Code for category Non-Rural Principal Highway (NR-A) roadways, the turn lane warrants are as follows:

- A left turn deceleration lane and taper with storage is required for any access with a projected peak hour ingress turning volume greater than 10 vehicles per hour (vph). The taper length will be included within the required deceleration length.
- A right turn deceleration lane and taper is required for any access with a projected peak hour ingress turning volume greater than 25 vph. The taper length will be included within the required deceleration length.
- Right turn acceleration lane and taper is required for any access with a projected peak hour right turning volume greater than 50 vph when the posted speed on the highway is greater than 40 mph. The taper length will be included within the required acceleration length.

Based on the 2025 traffic volume projections, turn lane requirements at the permit required intersections along SH-119 are as follows:

#### SH-119 & County Line Road

- A westbound left turn lane is warranted and exists at the SH-119 and County Line Road intersection based on projected 2025 background plus project traffic volumes being 93

westbound left turns during the peak hour and the threshold being 10 vph. Based on the 55 mile per hour speed limit, the deceleration length is 380 feet, plus a 220-foot taper). The storage requirement is 95 feet (50 feet per lane) in 2025 and 120 feet (60 feet per lane) in 2045 based on the projected left turning volume. The existing dual westbound left turn lanes provides a combined length of 560 feet. Therefore, the existing westbound left turn lanes may need to be extended to a length of 440 feet of storage and deceleration plus a 220-foot taper.

- An eastbound right turn lane is warranted and exists at the SH-119 and County Line Road intersection based on projected 2025 background plus project traffic volumes being 405 eastbound right turns during the peak hour and the threshold being 25 vph. The existing eastbound right turn lane provides 675 feet of storage. Based on the 55 mile per hour speed limit, the deceleration length is recommended to provide 380 feet, plus a 220-foot taper. Therefore, the existing turn lane meets CDOT turn lane standards.
- An eastbound acceleration lane along SH-119 from the County Line Road northbound right turn exists and is warranted based on projected 2025 background plus project traffic volumes being 107 northbound right turns during the peak hour and the threshold being 50 vph. Based on the 55 mile per hour speed limit, the acceleration lane length is recommended to provide 740 feet, plus a 220-foot taper. The existing acceleration lane drops at a length of approximately 1,230 feet to become an eastbound right turn lane at the Common Drive intersection to the east.

### **SH-119 & Common Drive**

- A westbound left turn lane is warranted and exists at the SH-119 and Common Drive intersection based on projected 2025 background plus project traffic volumes being 112 westbound left turns during the peak hour and the threshold being 10 vph. Based on the 55 mile per hour speed limit, the deceleration length is 380 feet, plus a 220-foot taper. The storage requirement is 112 feet in 2025 and 118 feet in 2045 based on the projected left turning volume which equates to a total length of 500 feet (120 feet of storage plus 380 feet of deceleration) plus a 220-foot taper. The existing westbound left turn lane provides 575 feet of storage with an approximate 160-foot taper. The existing westbound left turn lane length is anticipated to meet CDOT turn lane guidelines; however, the taper length is approximately 60 feet short of standards. However, the total turn lane length of 735 feet is longer than CDOT standards (720 feet); therefore, modifications to this turn lane are not recommended.

- An eastbound right turn lane **is** warranted and exists at the SH-119 and Common Drive intersection based on projected 2025 background plus project traffic volumes being 262 eastbound right turns during the peak hour and the threshold being 25 vph. Based on the 65 mile per hour speed limit, the deceleration length is recommended to provide 500 feet, plus a 300-foot taper. However, the existing eastbound right turn lane is continuous from the eastbound through acceleration lane from the County Line Road intersection to the west.
- An eastbound acceleration lane along SH-119 from the Common Drive northbound right turn exists and **is** warranted based on projected 2025 background plus project traffic volumes being 148 northbound right turns during the peak hour and the threshold being 50 vph. Based on the 65 mile per hour speed limit, the acceleration lane length is recommended to provide 1080 feet, plus a 220-foot taper. The existing acceleration lane extends approximately 1,150 feet and drops to become an eastbound right turn lane at the Zlaten Drive intersection to the east.

#### 5.4 City of Longmont Auxiliary Turn Lane Requirements

The City of Longmont Design Standards and Construction Specifications identify that left turn lanes will be installed on intersection approaches (where left turns are not prohibited) when any of the following criteria are met (Section 205.04.1):

- A. The approach is at an intersection that is signalized or is planned to be signalized in the future.
- B. On an uncontrolled approach on an arterial street.
- C. On an uncontrolled approach on a collector street that is striped as a three-lane street (with a continuous center turn lane).
- D. At a four-legged intersection when the opposing approach requires a left turn lane.
- E. On a STOP sign controlled approach on a collector or arterial street with adequate width for more than one approach lane when an exclusive left turn lane minimizes the approach delay (as determined using the latest Highway Capacity Manual analysis techniques).
- F. At an existing intersection where the accident history identifies an accident pattern that is susceptible to improvement by installing a left turn lane as determined by the City.

The project accesses were evaluated to determine if any conditions are met for implementation of a left turn lane. The County Line Road access meets Condition B and a southbound left turn



lane is warranted. Of note, a southbound left turn lane is already constructed at the access. However, Conditions A, B, C, D, and F do not apply to the accesses along Common Drive. The left turn movements at the two accesses along Common Drive are expected to operate at level of service A; therefore, left turn lanes are not expected to be needed based on the criteria set forth in Condition E. As such, a left turn lane is already constructed at the County Line Road access and no left turn lanes are required at the two (2) accesses along Common Drive.

The City of Longmont Design Standards and Construction Specifications identify that right turn lanes will be installed on intersection approaches when any of the following criteria are met:

- A. The intersection is signalized or is planned to be signalized in the future.
- B. At an existing intersection where the accident history identifies an accident pattern that is susceptible to improvement by installing a right turn lane.
- C. On a STOP sign controlled approach on a collector or arterial street with adequate width for more than one approach lane when an exclusive right turn lane minimizes the approach delay (as determined using the latest Highway Capacity Manual analysis techniques).
- D. The approach is uncontrolled, and the traffic volumes estimated in the approved traffic impact study (see appendix A), when applied to the following graph, require a right turn lane. In the graph, when the plotted point representing the through traffic (or the through traffic in the outside through lane when more than one through lane exists) on the approach and the corresponding right turn volume on the approach fall above the line a right turn lane is warranted.

The project accesses were evaluated to determine if any conditions are met for implementation of a right turn lane. County Line Road is an arterial roadway and meets Condition D with the traffic volumes anticipated along County Line Road and the right turn volumes. Therefore, a right turn lane is proposed at the County Line Road access. This northbound right turn lane at the County Line Road access should provide a length of 220 feet plus a 120-foot taper. Common Drive is not an arterial roadway and matches the characteristics for a collector roadway. Therefore, Condition A is not applicable to the accesses along Common Drive. In addition, Condition B and C are not applicable to the Common Drive accesses either. Condition D is met at both intersections based on the through volumes versus the right turn volumes. However, right turn lanes are not provided along any of the existing Common Drive accesses. Furthermore, to match the existing roadway characteristics and to avoid over building roadways along collector street, the City of Longmont

should consider waiving the need for right turn lanes at the project accesses along Common Drive.

## 5.5 Vehicle Queuing Analysis

A vehicle queuing analysis was conducted for the study area intersections. The queuing analysis was performed using Synchro presenting the results of the 95<sup>th</sup> percentile queue lengths. Results are shown in the following **Table 9** with calculations provided within the level of service operational sheets of **Appendix E** for unsignalized intersections and **Appendix G** for signalized intersections.

**Table 9 – Turn Lane Queuing Analysis Results**

Intersection Turn Lane	Existing Turn Lane Length (feet)	2025 Calculated Queue (feet)	2025 Recommended Length (feet)	2045 Calculated Queue (feet)	2045 Recommended Length (feet)
<b>SH-119 &amp; County Line Rd</b>					
Eastbound Left	325'/500'	190'	325'/500'	351'	325'/500'
Eastbound Right	C	127'	C	226'	C
Westbound Left	200'/350'	38'	440'	47'	440'
Westbound Right	900'	377'	900'	651'	900'
Northbound Left	450' DL	380'	450' DL	507'	450' DL
Northbound Right	300'	25'	300'	25'	300'
Southbound Left	425' DL	359'	425' DL	529'	425' DL
Southbound Right	325'	25'	325'	25'	325'
<b>SH-119 &amp; Common Dr</b>					
Westbound Left	600'	50'	600'	75'	600'
Westbound Right	475'	25'	475'	25'	475'
<b>SH-119 &amp; Zlaten Dr</b>					
Eastbound Left	200'	95'	200'	66'	200'
Eastbound Right	C	25'	C	25'	C
Westbound Left	1,600'	199'	1,600'	297'	1,600'
Northbound Left	100'/C	28'	100'/C	38'	100'/C
<b>Zlaten Dr &amp; County Line Rd</b>					
Westbound Left	150'	160'	175'	181'	200'
Westbound Right	C	73'	150'	80'	150'
Northbound Left	225'	25'	225'	25'	225'
Southbound Left	350'	41'	350'	54'	350'
Southbound Right	C	25'	C	25'	C
<b>Zlaten Dr &amp; Timm Way/Common Dr</b>					
Eastbound Left	100'	25'	100'	25'	100'
Westbound Left	125'	25'	125'	25'	125'
Southbound Right	100'	25'	100'	50'	100'
<b>County Line Rd Access</b>					
Southbound Left	150'	25'	150'	25'	150'
Northbound Right	DNE	25'	220'+120'T	25'	220'+120'T

DNE = Does Not Exist; C = Continuous Lane; DL = Dual Left Turn Lanes; T = Taper; **Red** Text = Storage Deficiency; **Blue** Text = Recommendation

As shown in the table above the northbound and southbound left turn queues at the intersection of SH-119 and County Line Road are anticipated to extend beyond the available storage by 2045. However, these left turn lanes cannot be lengthened due to the left turn lanes at the adjacent intersections.

The westbound left turn lane at the intersection of Zlaten Drive and County Line Road may need to be extended from 150 feet to 175 feet by 2025 and to 200 feet by 2045. This will require the taper from the back-to-back left turn lanes to be shortened from 125 feet to 75 feet by 2045. With signalization, it is recommended that the westbound right turn lane at the Zlaten Drive and County Line Road intersection be designated to a length of 150 feet.

With construction of the County Line Road access, it is recommended that the northbound right turn lane be designated to a length of 220 feet plus a 120-foot taper to meet City of Longmont standards.

## 5.6 Improvement Summary

Based on the results of the intersection operational and vehicle queuing analysis, the key intersection recommended improvements and control are shown in **Figure 13** for the short-term 2025 horizon and **Figure 14** for the long-term 2045 horizon.

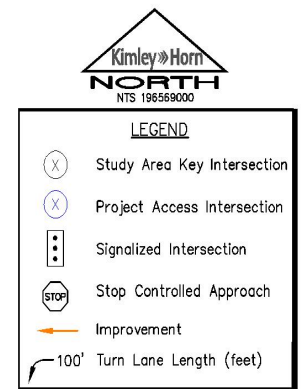
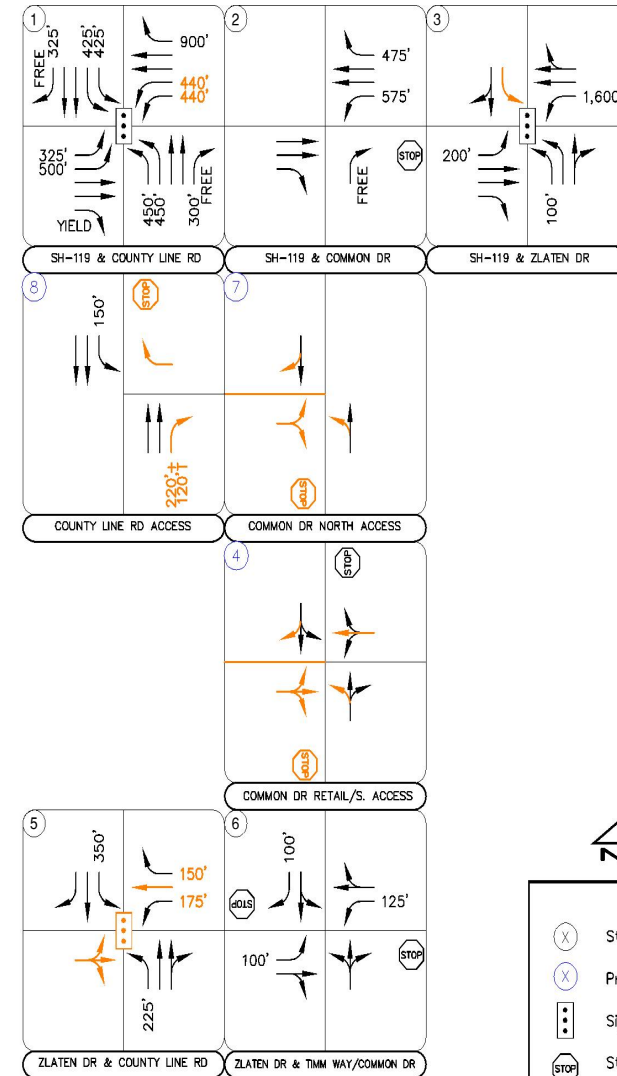
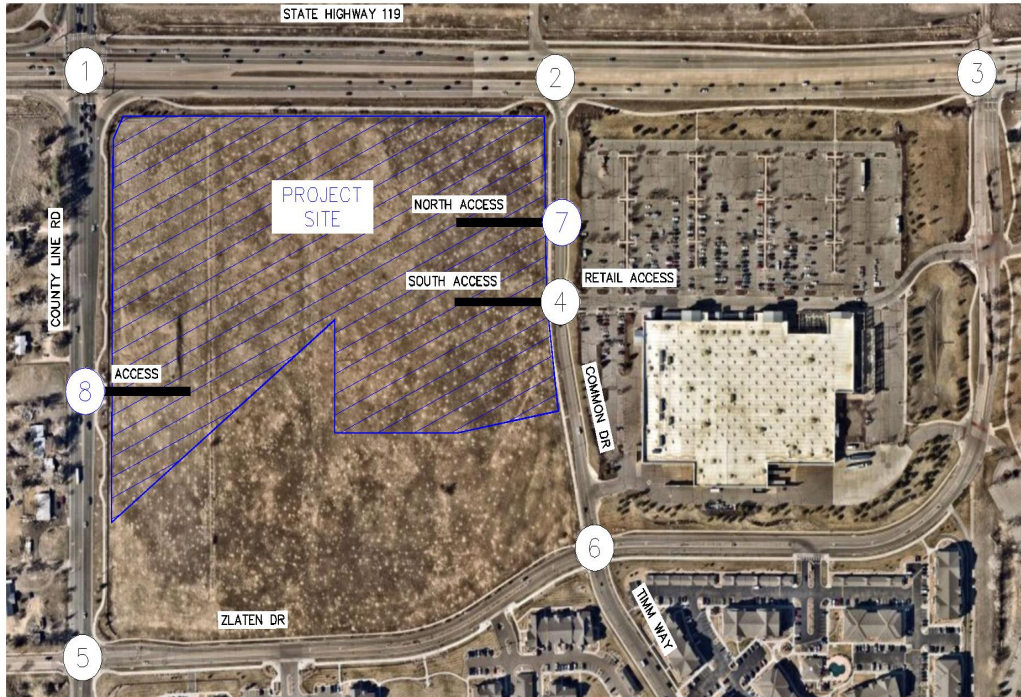


FIGURE 13

SANDSTONE MARKETPLACE  
LONGMONT, COLORADO  
2025 RECOMMENDED GEOMETRY AND CONTROL



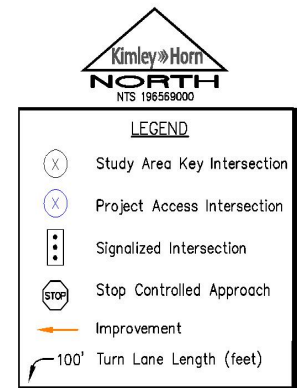
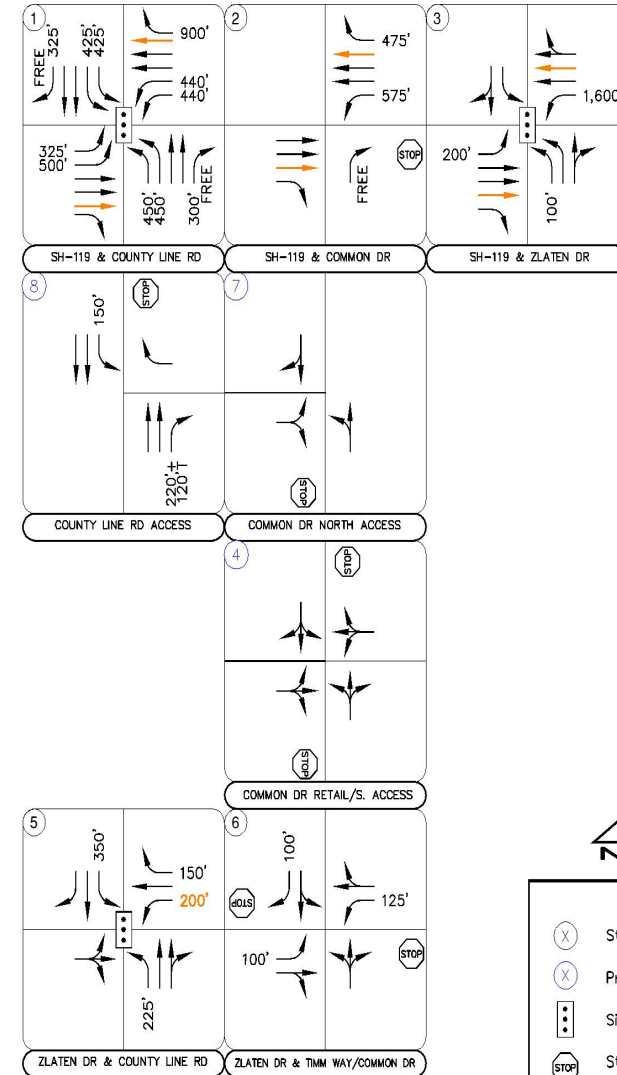
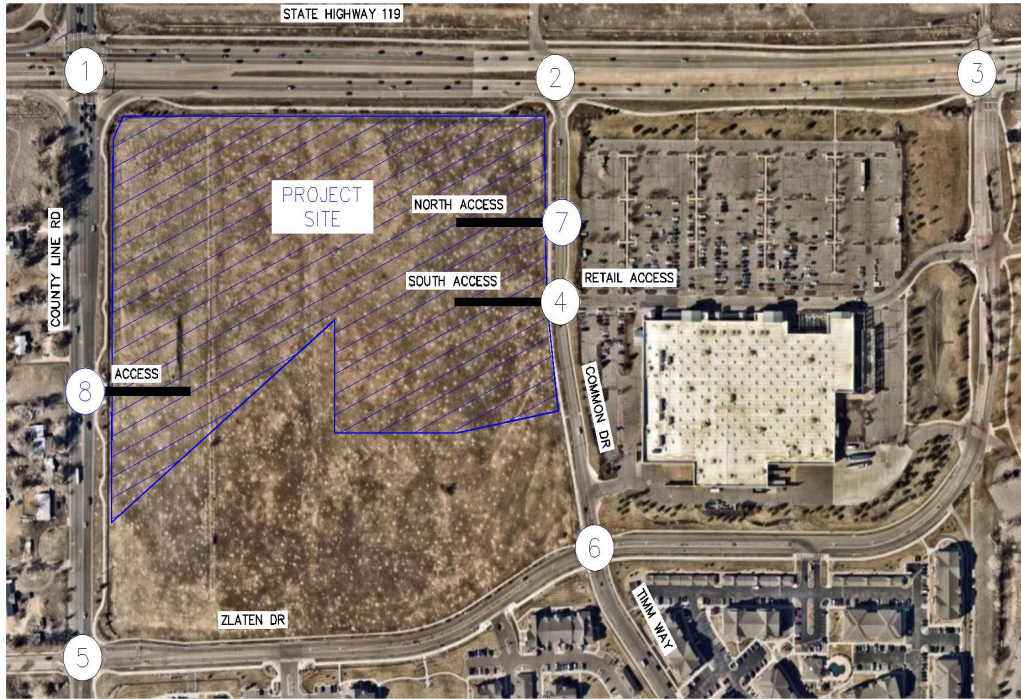


FIGURE 14

SANDSTONE MARKETPLACE  
LONGMONT, COLORADO  
2045 RECOMMENDED GEOMETRY AND CONTROL

## 6.0 CONCLUSIONS AND RECOMMENDATIONS

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Based on the analysis presented in this report, Kimley-Horn believes Sandstone Marketplace will be successfully incorporated into the existing and future roadway network. Analysis of the existing street network, the proposed project development, and expected traffic volumes resulted in the following conclusions and recommendations:

### 2025 Recommendations:

- The threshold for requiring an access permit along Colorado Department of Transportation (CDOT) roadways occurs when project traffic is anticipated to increase the existing access traffic volumes by more than 20 percent. Based on traffic projections, the addition of project traffic on the south leg of Zlaten Drive is not anticipated to increase existing access traffic volumes by more than 20 percent, with the maximum expected increase at 0 percent during the afternoon peak hour on the south leg (0/251). Therefore, a CDOT access permit is not anticipated to be required in association with this project at the Zlaten Drive. However, based on traffic projections, the addition of project traffic on the south legs of County Line Road and Common Drive along SH-119 are anticipated to increase existing traffic by more than 20 percent. Therefore, access permits are anticipated to be needed at these two intersections as development occurs.
- With completion of the Sandstone Marketplace project, two full movement accesses are proposed along Common Drive with the south access aligning with the existing retail access, and a three-quarter access is proposed along County Line Road. It is recommended that a R1-1 “STOP” sign be installed on the eastbound approaches of the Common Drive accesses and the westbound approach of the County Line Road access. Since the County Line Road access is restricting left turn movements out of the development, a R3-2 “No Left Turn” sign is recommended to be installed below the R1-1 sign to warn driver’s that the movement is not permitted. A raised pork chop median island is already constructed in the driveway throat of the access along County Line Road to further restrict exiting left turn movements at this access intersection. With construction of the County Line Road access, it is recommended that a northbound right turn lane be designated to a length of 220 feet plus a 120-foot taper to meet City of Longmont standards.



- The City of Longmont requested a signal warrant evaluation at the intersection of Zlaten Drive and County Line Road with the west leg being converted from three-quarter turning movements to full turning movements. It should be noted that although the west leg of this intersection technically restricts eastbound left turn and through movements, 19 eastbound left turn movements were observed during the morning peak hour at this intersection. With or without the addition of project traffic, this intersection is expected to meet the four-hour signal warrant; therefore, it is recommended that the City of Longmont consider signalization at this intersection. With signalization, it is recommended that the eastbound approach have one shared lane for all movements due to geometric constraints and the westbound approach consist of a 175-foot left turn lane, a through lane, and a 150-foot right turn lane. Of note, project traffic is anticipated to make up 5.5 percent of morning peak hour traffic and 5.1 percent of the afternoon peak hour traffic at this intersection during the 2025 build out horizon.
- The westbound dual left turn lanes at the SH-119 and Country Line Road intersection may need to be extended to a length of 440 feet (storage plus deceleration) plus a 220-foot taper.

#### **2045 Recommendations:**

- By 2045, SH-119 is planned to be improved to a six-lane roadway throughout the study area limits.
- If future volumes are realized, the westbound left turn lane at the intersection of Zlaten Drive and County Line Road may need to be further extended to 200 feet. Extension of the westbound left turn lane will require the taper from the back-to-back left turn lanes to be shortened from 125 feet to 75 feet.

#### **General Recommendations:**

- Any onsite or offsite improvements should be incorporated into the Civil Drawings and conform to standards of the City of Longmont, CDOT, and the Manual on Uniform Traffic Control Devices (MUTCD) – 2009 Edition.

# APPENDICES

# APPENDIX A

## Base Assumptions Form



## TRAFFIC IMPACT STUDY (TIS) Scoping Form

The applicant is responsible for completing and submitting this form to the City of Longmont at least three (3) business days prior to the scoping meeting. If a completed form is not received by this deadline, the scoping meeting may be postponed. If traffic study is submitted more than 6 months after the scoping meeting is held, City staff may require another scoping meeting.

### Contact Information

Consultant Name:	Kimley-Horn & Associates (Jeff Planck) jeff.planck@kimley-horn.com
Tele:	
E-mail:	
Developer/Owner Name:	

### Project Information *(Attach proposed Site Plan)*

Project Name:	Sandstone Marketplace				
Project Location:	Southeast corner of HWY 119 and County Line Road				
Project Description: Application type (rezoning, subdivision), acreage, new or re-development, etc.	New development with commercial, daycare, medical, and senior housing uses				
Existing / Proposed Land Uses	ITE Code	#units or Size	Existing / Proposed Land Uses	ITE Code	#units or Size
Senior Adult Housing	252	130 DU	Medical Office	720	60,000 SF
Daycare Center	565	10,000 SF	Retail/Restaurant	822/930,932,934	30,900 SF/23,000 SF

*Please attach Trip Generation Summary table for large or mixed use projects*

### Assumptions

Study Horizons	Current Year: <u>2022</u>	Build-out : <u>2025</u>	Long Term : <u>2045</u>
Study Area Boundaries <i>(Attach map if needed)</i>	North: <b>SH-119</b>	South: <b>Zlaten Dr</b>	
	East: <b>Timm Way</b>	West: <b>County Line Rd</b>	
Intersections and Road Segments to be Evaluated  <i>(Attach map if needed)</i>	1. All Site entrances		5. Zlaten Dr & Timm Way
	2. SH-119 & County Line Rd		6. SH-119 & Zlaten Dr
	3. SH -119 & Timm Way		7. Timm Way Retail Center Access
	4. County Line Rd & Zlaten Dr		8.
Trip Distribution	<i>See Attached Sketch</i>		



Assumptions (continued)				
Trip Reductions (include in Trip Generation table if provided)	Internal Capture	Use: Daily <u>15</u> % Use: AM/PM <u>11%/18%</u> %	Pass By	Use: Per ITE <u>      </u> % Use: Multi-Use <u>      </u> %
Anticipated Future Traffic Growth Rates (Describe methodology)	2.0% based on average annual growth rate from the Longmont Roadway Plan		Study Time Periods (circle all that apply)	<u>AM (7-9)</u> <u>PM (4-6)</u> SAT (noon) Other
Other Factors proposed/assumed transp. improvements, other studies, nearby proposed developments, etc.	- Signal warrant analysis at the intersection of Zlaten Drive and County Line Road - Include projected traffic from three adjacent developments as discussed in the scoping call			
Analysis Methods & Issues  (check all that apply)	<input checked="" type="checkbox"/> Synchro <input type="checkbox"/> HCS <input type="checkbox"/> aaSidra or Rodel <input checked="" type="checkbox"/> Intersections <input type="checkbox"/> Roadway Sections <input checked="" type="checkbox"/> Signal Warrants <input type="checkbox"/> Safety/Sight Distance <input checked="" type="checkbox"/> Queuing & Storage <input checked="" type="checkbox"/> CDOT (Access Permit, other) <input checked="" type="checkbox"/> Identify Bicycle, Pedestrian & Transit Accommodations <input type="checkbox"/> TDM <input type="checkbox"/> Neighborhood Impacts <input type="checkbox"/> Other _____			

ATTACHMENTS, NOTES, & other ASSUMPTIONS:

**TIS will follow methodology and parameters described in City of Longmont Traffic Impact Study Requirements.**

**Applicant will submit electronic copy all analysis data files (HCS, Synchro .syn, etc.). (such as PDF) of TIS report, and**

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SIGNED: Jeffrey R. Planck  
Applicant or Consultant

PRINT NAME: Jeff Planck  
Applicant or Consultant

DATE: 08/25/2022

City of Longmont Contacts:

Transportation Planner: 303-651-8335  
Civil Engineer (Traffic): 303-651-8737  
Transportation Engineer: 303-651-8323

# APPENDIX B

## Intersection Count Sheets





(303) 216-2439  
www.alltrafficdata.net

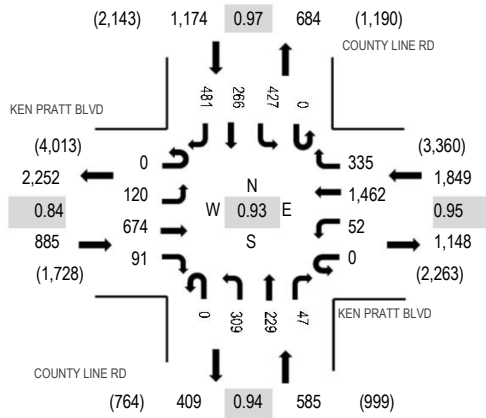
Location: 1 COUNTY LINE RD & KEN PRATT BLVD AM

Date: Thursday, August 25, 2022

Peak Hour: 07:15 AM - 08:15 AM

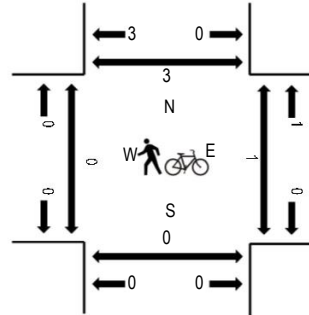
Peak 15-Minutes: 07:45 AM - 08:00 AM

### Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

### Peak Hour - Pedestrians/Bicycles on Crosswalk



### Traffic Counts

Interval Start Time	KEN PRATT BLVD Eastbound				KEN PRATT BLVD Westbound				COUNTY LINE RD Northbound				COUNTY LINE RD Southbound				Total	Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
7:00 AM	0	25	143	19	0	12	291	42	0	59	27	11	0	117	73	104	923	4,358	0	0	0	0
7:15 AM	0	25	156	11	0	16	333	91	0	74	56	19	0	110	64	135	1,090	4,493	0	0	0	0
7:30 AM	0	29	151	27	0	14	356	85	0	80	68	8	0	112	75	131	1,136	4,346	0	0	0	0
7:45 AM	0	40	206	24	0	14	379	76	0	86	59	10	0	115	73	127	1,209	4,160	0	0	0	0
8:00 AM	0	26	161	29	0	8	394	83	0	69	46	10	0	90	54	88	1,058	3,872	0	0	0	0
8:15 AM	0	31	158	24	1	11	341	58	0	57	42	11	0	101	44	64	943		0	0	0	0
8:30 AM	0	21	167	20	0	8	315	75	0	56	42	10	0	92	58	86	950		0	0	0	0
8:45 AM	0	28	188	19	0	14	270	73	0	47	42	10	0	106	53	71	921		0	0	0	0
Count Total	0	225	1,330	173	1	97	2,679	583	0	528	382	89	0	843	494	806	8,230		0	0	0	0
Peak Hour	0	120	674	91	0	52	1,462	335	0	309	229	47	0	427	266	481	4,493		0	0	0	0



(303) 216-2439  
www.alltrafficdata.net

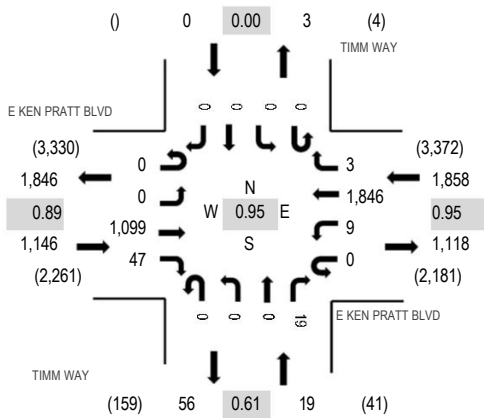
Location: 2 TIMM WAY & E KEN PRATT BLVD AM

Date: Thursday, August 25, 2022

Peak Hour: 07:15 AM - 08:15 AM

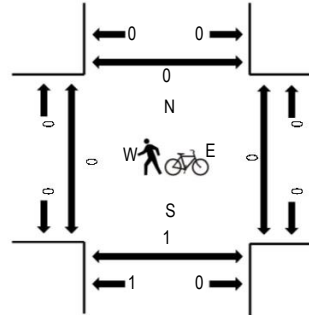
Peak 15-Minutes: 07:45 AM - 08:00 AM

### Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

### Peak Hour - Pedestrians/Bicycles on Crosswalk



### Traffic Counts

Interval Start Time	E KEN PRATT BLVD Eastbound				E KEN PRATT BLVD Westbound				TIMM WAY Northbound				TIMM WAY Southbound				Total	Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
7:00 AM	0	0	271	7	0	11	342	1	0	0	0	3	0	0	0	0	635	2,883	0	0	2	0
7:15 AM	0	0	270	13	0	4	446	0	0	0	0	3	0	0	0	0	736	3,023	0	0	0	0
7:30 AM	0	0	257	6	0	1	450	1	0	0	0	5	0	0	0	0	720	2,981	0	0	1	0
7:45 AM	0	0	312	12	0	1	463	1	0	0	0	3	0	0	0	0	792	2,928	0	0	0	0
8:00 AM	0	0	260	16	0	3	487	1	0	0	0	8	0	0	0	0	775	2,791	0	0	0	0
8:15 AM	0	0	262	21	0	6	400	0	0	0	0	5	0	0	0	0	694		0	0	0	0
8:30 AM	0	0	244	20	0	4	396	0	0	0	0	3	0	0	0	0	667		0	0	0	0
8:45 AM	0	0	263	27	1	7	346	0	0	0	0	11	0	0	0	0	655		0	0	0	0
Count Total	0	0	2,139	122	1	37	3,330	4	0	0	0	41	0	0	0	0	5,674		0	0	3	0
Peak Hour	0	0	1,099	47	0	9	1,846	3	0	0	0	19	0	0	0	0	3,023		0	0	1	0



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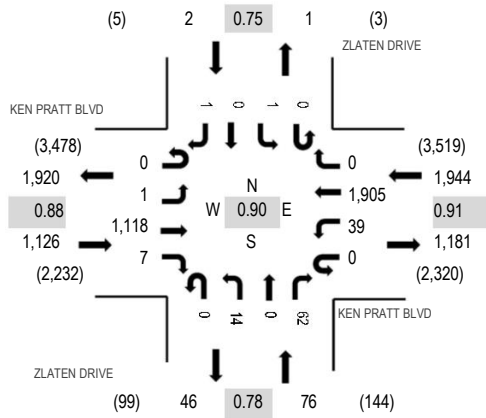
Location: 3 ZLATEN DRIVE & EAST KEN PRATT BOULEVARD AM

Date: Thursday, August 25, 2022

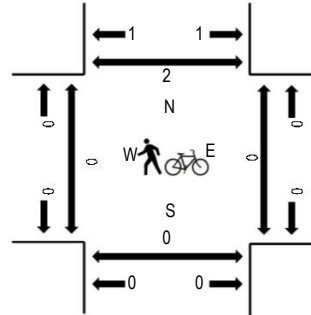
Peak Hour: 07:15 AM - 08:15 AM

Peak 15-Minutes: 07:45 AM - 08:00 AM

### Peak Hour - All Vehicles



### Peak Hour - Pedestrians/Bicycles on Crosswalk



Note: Total study counts contained in parentheses.

### Traffic Counts

Interval Start Time	KEN PRATT BLVD				KEN PRATT BLVD				ZLATEN DRIVE				ZLATEN DRIVE				Total	Rolling Hour	Pedestrian Crossings			
	Eastbound				Westbound				Northbound				Southbound						West	East	South	North
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right						
7:00 AM	1	0	277	1	0	7	378	0	0	4	0	11	0	0	0	1	680	3,068	0	0	0	0
7:15 AM	0	0	276	0	0	8	453	0	0	3	0	13	0	1	0	0	754	3,148	0	0	0	1
7:30 AM	0	1	256	2	0	8	474	0	0	3	0	16	0	0	0	1	761	3,101	0	0	0	0
7:45 AM	0	0	319	2	0	11	525	0	0	2	0	14	0	0	0	0	873	3,022	0	0	0	0
8:00 AM	0	0	267	3	0	12	453	0	0	6	0	19	0	0	0	0	760	2,832	0	0	0	0
8:15 AM	0	1	269	5	0	9	410	0	0	3	0	9	0	0	0	1	707		0	0	0	0
8:30 AM	0	1	263	2	0	7	385	0	0	8	0	15	0	0	0	1	682		0	0	0	0
8:45 AM	0	0	285	1	0	21	358	0	0	8	0	10	0	0	0	0	683		0	0	0	1
Count Total	1	3	2,212	16	0	83	3,436	0	0	37	0	107	0	1	0	4	5,900		0	0	0	2
Peak Hour	0	1	1,118	7	0	39	1,905	0	0	14	0	62	0	1	0	1	3,148		0	0	0	1



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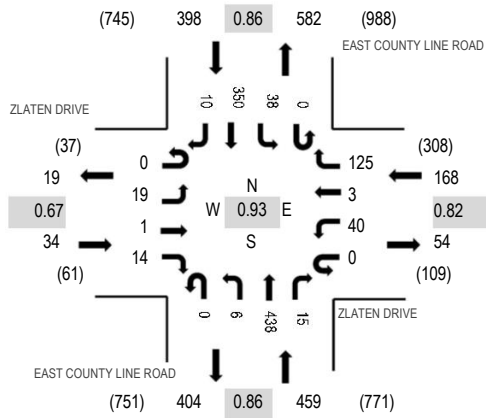
Location: 4 EAST COUNTY LINE ROAD & ZLATEN DRIVE AM

Date: Thursday, August 25, 2022

Peak Hour: 07:15 AM - 08:15 AM

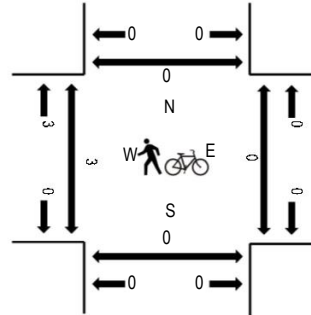
Peak 15-Minutes: 07:45 AM - 08:00 AM

### Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

### Peak Hour - Pedestrians/Bicycles on Crosswalk



### Traffic Counts

Interval Start Time	ZLATEN DRIVE Eastbound				ZLATEN DRIVE Westbound				E COUNTY LINE ROAD Northbound				E COUNTY LINE ROAD Southbound				Total	Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
7:00 AM	0	4	0	8	0	9	1	36	0	2	62	3	0	5	95	0	225	1,039	0	0	0	2
7:15 AM	0	11	1	4	0	11	0	40	0	1	100	2	0	5	71	2	248	1,059	0	0	0	0
7:30 AM	0	3	0	3	0	6	1	24	0	2	128	4	0	11	95	3	280	1,015	2	0	0	0
7:45 AM	0	4	0	5	0	14	1	25	0	3	113	3	0	13	102	3	286	940	1	0	0	0
8:00 AM	0	1	0	2	0	9	1	36	0	0	97	6	0	9	82	2	245	846	0	0	0	0
8:15 AM	0	2	0	3	0	8	0	26	0	4	84	3	0	10	61	3	204		0	0	0	0
8:30 AM	0	3	1	5	0	6	1	27	0	2	66	7	0	11	76	0	205		0	0	0	0
8:45 AM	0	0	0	1	0	3	0	23	0	1	73	5	0	10	72	4	192		0	0	0	0
Count Total	0	28	2	31	0	66	5	237	0	15	723	33	0	74	654	17	1,885		3	0	0	2
Peak Hour	0	19	1	14	0	40	3	125	0	6	438	15	0	38	350	10	1,059		3	0	0	0



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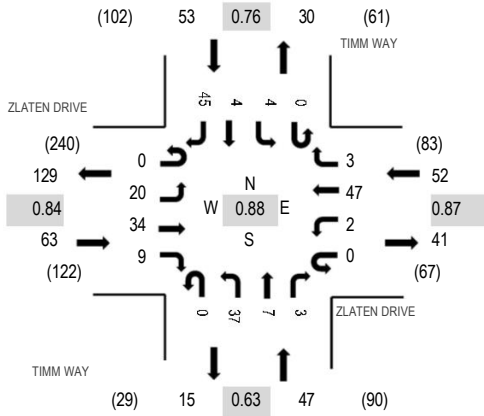
Location: 5 TIMM WAY & ZLATEN DRIVE AM

Date: Thursday, August 25, 2022

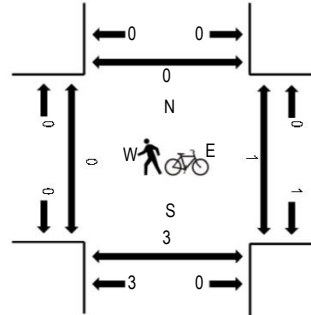
Peak Hour: 07:15 AM - 08:15 AM

Peak 15-Minutes: 07:15 AM - 07:30 AM

### Peak Hour - All Vehicles



### Peak Hour - Pedestrians/Bicycles on Crosswalk



Note: Total study counts contained in parentheses.

### Traffic Counts

Interval Start Time	ZLATEN DRIVE Eastbound				ZLATEN DRIVE Westbound				TIMM WAY Northbound				TIMM WAY Southbound				Total	Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
7:00 AM	0	1	4	3	0	0	13	0	0	14	2	2	0	0	0	12	51	208	0	2	1	0
7:15 AM	0	4	6	1	0	1	14	0	0	18	3	1	0	1	1	11	61	215	0	0	0	0
7:30 AM	0	6	12	2	0	0	9	1	0	4	1	0	0	0	2	7	44	193	0	0	2	0
7:45 AM	0	6	6	4	0	1	10	2	0	8	2	0	0	0	1	12	52	199	0	0	0	0
8:00 AM	0	4	10	2	0	0	14	0	0	7	1	2	0	3	0	15	58	189	0	1	1	0
8:15 AM	0	4	5	4	0	0	7	1	0	12	0	0	0	0	0	6	39		0	0	0	0
8:30 AM	0	11	8	1	0	0	4	0	0	9	0	1	0	0	1	15	50		0	0	0	0
8:45 AM	0	9	6	3	0	1	3	2	0	2	1	0	0	0	1	14	42		0	0	0	0
Count Total	0	45	57	20	0	3	74	6	0	74	10	6	0	4	6	92	397		0	3	4	0
Peak Hour	0	20	34	9	0	2	47	3	0	37	7	3	0	4	4	45	215		0	1	3	0





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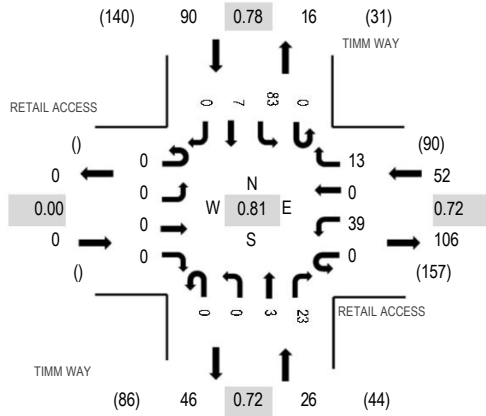
Location: 6 TIMM WAY & RETAIL ACCESS AM

Date: Thursday, August 25, 2022

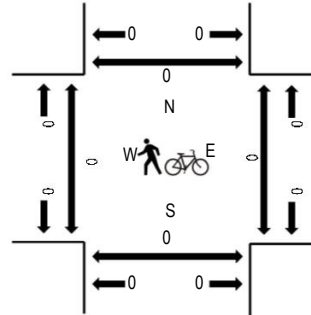
Peak Hour: 08:00 AM - 09:00 AM

Peak 15-Minutes: 08:45 AM - 09:00 AM

### Peak Hour - All Vehicles



### Peak Hour - Pedestrians/Bicycles on Crosswalk



Note: Total study counts contained in parentheses.

### Traffic Counts

Interval Start Time	RETAIL ACCESS Eastbound				RETAIL ACCESS Westbound				TIMM WAY Northbound				TIMM WAY Southbound				Total	Rolling Hour	Pedestrian Crossings				
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North	
7:00 AM	0	0	0	0	0	11	0	1	0	0	0	2	0	6	0	0	20	106	0	0	0	0	
7:15 AM	0	0	0	0	0	8	0	4	0	0	3	2	0	10	3	0	30	121	0	0	0	0	
7:30 AM	0	0	0	0	0	4	0	2	0	0	1	2	0	15	3	0	27	125	0	0	0	0	
7:45 AM	0	0	0	0	0	7	0	1	0	0	3	5	0	9	4	0	29	145	0	0	0	0	
8:00 AM	0	0	0	0	0	13	0	5	0	0	1	4	0	8	4	0	35	168	0	0	0	0	
8:15 AM	0	0	0	0	0	7	0	0	0	0	0	5	0	21	1	0	34		0	0	0	0	
8:30 AM	0	0	0	0	0	10	0	3	0	0	0	7	0	25	2	0	47		0	0	0	0	
8:45 AM	0	0	0	0	0	9	0	5	0	0	2	7	0	29	0	0	52		0	0	0	0	
Count Total	0	0	0	0	0	69	0	21	0	0	10	34	0	123	17	0	274		0	0	0	0	
Peak Hour	0	0	0	0	0	39	0	13	0	0	3	23	0	83	7	0	168		0	0	0	0	



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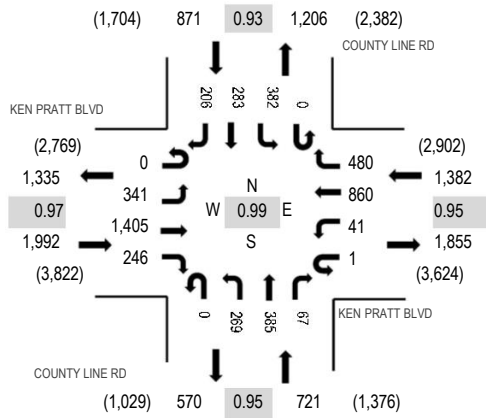
Location: 1 COUNTY LINE RD & KEN PRATT BLVD PM

Date: Thursday, August 25, 2022

Peak Hour: 04:30 PM - 05:30 PM

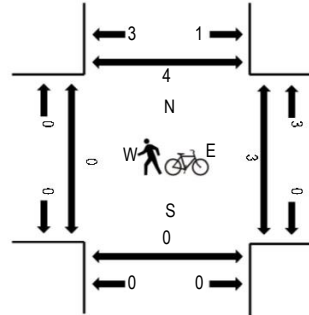
Peak 15-Minutes: 05:00 PM - 05:15 PM

### Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

### Peak Hour - Pedestrians/Bicycles on Crosswalk



### Traffic Counts

Interval Start Time	KEN PRATT BLVD Eastbound				KEN PRATT BLVD Westbound				COUNTY LINE RD Northbound				COUNTY LINE RD Southbound				Total	Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
4:00 PM	0	98	322	57	0	9	244	118	0	66	93	17	0	96	71	56	1,247	4,921	0	0	0	0
4:15 PM	0	85	291	48	0	9	251	133	0	86	94	13	0	88	59	49	1,206	4,930	0	0	0	0
4:30 PM	0	80	335	62	0	13	210	118	0	72	100	19	0	96	84	52	1,241	4,966	0	0	0	0
4:45 PM	0	80	343	66	0	10	194	120	0	69	89	15	0	100	78	63	1,227	4,949	0	0	0	1
5:00 PM	0	91	359	62	0	11	233	128	0	71	96	13	0	85	59	48	1,256	4,883	0	0	0	0
5:15 PM	0	90	368	56	1	7	223	114	0	57	100	20	0	101	62	43	1,242		0	1	0	1
5:30 PM	0	76	347	43	0	10	241	137	0	54	81	15	0	116	59	45	1,224		0	1	0	1
5:45 PM	0	80	345	38	0	16	233	119	0	54	62	20	0	99	40	55	1,161		0	0	0	0
Count Total	0	680	2,710	432	1	85	1,829	987	0	529	715	132	0	781	512	411	9,804		0	2	0	3
Peak Hour	0	341	1,405	246	1	41	860	480	0	269	385	67	0	382	283	206	4,966		0	1	0	2



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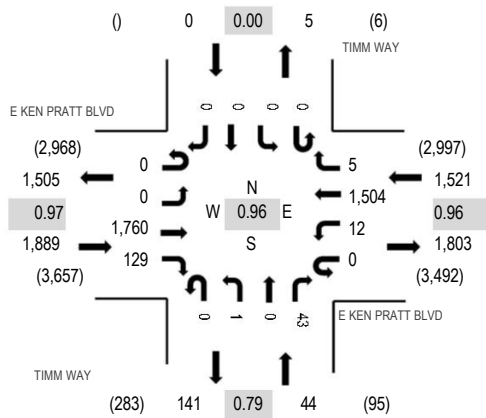
Location: 2 TIMM WAY & E KEN PRATT BLVD PM

Date: Thursday, August 25, 2022

Peak Hour: 05:00 PM - 06:00 PM

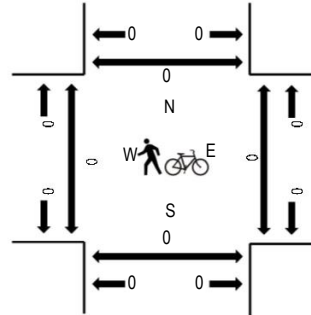
Peak 15-Minutes: 05:30 PM - 05:45 PM

### Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

### Peak Hour - Pedestrians/Bicycles on Crosswalk



### Traffic Counts

Interval Start Time	E KEN PRATT BLVD Eastbound				E KEN PRATT BLVD Westbound				TIMM WAY Northbound				TIMM WAY Southbound				Total	Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
4:00 PM	0	0	390	35	0	2	381	0	0	0	0	22	0	0	0	0	830	3,295	0	0	0	0
4:15 PM	0	0	382	32	0	4	401	0	0	0	0	5	0	0	0	0	824	3,307	0	0	0	0
4:30 PM	0	0	414	32	0	3	350	1	0	0	0	8	0	0	0	0	808	3,351	0	0	0	0
4:45 PM	0	0	452	31	0	3	331	0	0	0	0	16	0	0	0	0	833	3,438	0	0	0	0
5:00 PM	0	0	416	31	0	2	380	2	0	1	0	10	0	0	0	0	842	3,454	0	0	0	0
5:15 PM	0	0	461	33	0	4	352	1	0	0	0	17	0	0	0	0	868		0	0	0	0
5:30 PM	0	0	454	33	0	5	393	0	0	0	0	10	0	0	0	0	895		0	0	0	0
5:45 PM	0	0	429	32	0	1	379	2	0	0	0	6	0	0	0	0	849		0	0	0	0
Count Total	0	0	3,398	259	0	24	2,967	6	0	1	0	94	0	0	0	0	6,749		0	0	0	0
Peak Hour	0	0	1,760	129	0	12	1,504	5	0	1	0	43	0	0	0	0	3,454		0	0	0	0



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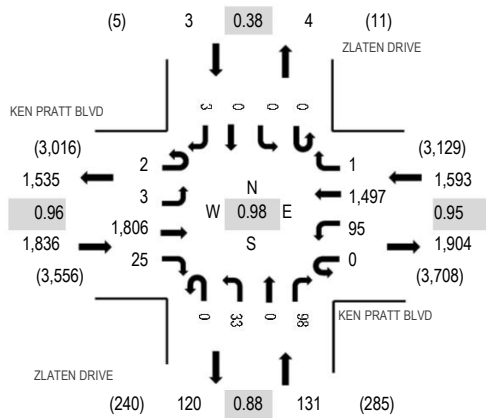
Location: 3 ZLATEN DRIVE & KEN PRATT BLVD PM

Date: Thursday, August 25, 2022

Peak Hour: 05:00 PM - 06:00 PM

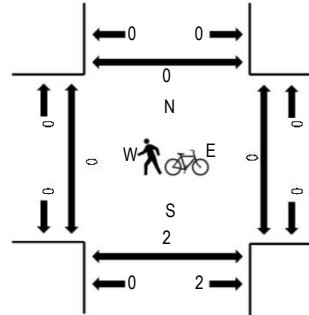
Peak 15-Minutes: 05:30 PM - 05:45 PM

### Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

### Peak Hour - Pedestrians/Bicycles on Crosswalk



### Traffic Counts

Interval Start Time	KEN PRATT BLVD Eastbound				KEN PRATT BLVD Westbound				ZLATEN DRIVE Northbound				ZLATEN DRIVE Southbound				Total	Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
4:00 PM	0	1	407	6	0	27	382	0	0	11	0	27	0	0	0	0	861	3,412	0	0	0	0
4:15 PM	1	0	399	2	0	24	374	1	0	15	1	28	0	0	0	0	845	3,442	0	0	0	0
4:30 PM	1	1	426	6	0	20	348	0	0	8	0	27	1	0	0	1	839	3,483	0	0	0	0
4:45 PM	1	0	465	4	0	31	327	2	0	12	0	25	0	0	0	0	867	3,554	0	0	0	0
5:00 PM	0	1	432	1	0	31	390	0	0	9	0	26	0	0	0	1	891	3,563	0	0	0	0
5:15 PM	2	1	476	3	0	28	336	1	0	5	0	34	0	0	0	0	886		0	0	0	0
5:30 PM	0	1	463	8	0	19	389	0	0	8	0	22	0	0	0	0	910		0	0	0	0
5:45 PM	0	0	435	13	0	17	382	0	0	11	0	16	0	0	0	2	876		0	0	0	0
Count Total	5	5	3,503	43	0	197	2,928	4	0	79	1	205	1	0	0	4	6,975		0	0	0	0
Peak Hour	2	3	1,806	25	0	95	1,497	1	0	33	0	98	0	0	0	3	3,563		0	0	0	0

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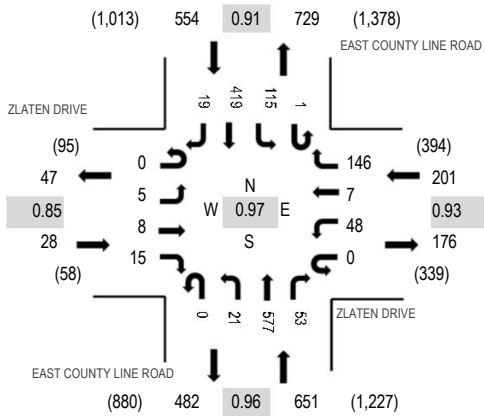
Location: 4 EAST COUNTY LINE ROAD & ZLATEN DRIVE PM

Date: Thursday, August 25, 2022

Peak Hour: 04:00 PM - 05:00 PM

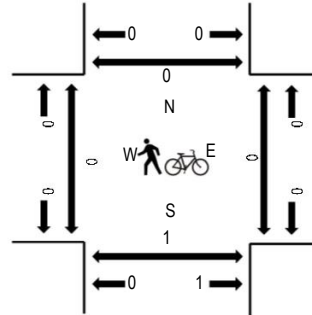
Peak 15-Minutes: 04:45 PM - 05:00 PM

### Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

### Peak Hour - Pedestrians/Bicycles on Crosswalk



## Traffic Counts

Interval Start Time	ZLATEN DRIVE				ZLATEN DRIVE				E COUNTY LINE ROAD				E COUNTY LINE ROAD				Total	Rolling Hour	Pedestrian Crossings			
	Eastbound				Westbound				Northbound				Southbound						West	East	South	North
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right						
4:00 PM	0	1	1	3	0	9	3	39	0	3	153	12	0	37	91	2	354	1,434	0	0	0	0
4:15 PM	0	1	1	1	0	18	0	29	0	4	151	15	0	25	90	5	340	1,425	0	0	0	0
4:30 PM	0	3	3	4	0	8	2	39	0	8	134	14	0	27	121	6	369	1,422	0	0	0	0
4:45 PM	0	0	3	7	0	13	2	39	0	6	139	12	1	26	117	6	371	1,359	0	0	0	0
5:00 PM	0	0	1	8	0	8	4	39	0	1	141	13	0	21	103	6	345	1,258	0	0	0	0
5:15 PM	0	0	1	4	0	8	3	33	0	1	148	14	0	21	97	7	337		0	0	0	0
5:30 PM	0	2	4	1	0	9	2	40	0	7	109	22	0	23	80	7	306		0	0	0	0
5:45 PM	0	4	2	3	0	10	2	35	0	5	98	17	0	24	67	3	270		0	1	0	0
Count Total	0	11	16	31	0	83	18	293	0	35	1,073	119	1	204	766	42	2,692		0	1	0	0
Peak Hour	0	5	8	15	0	48	7	146	0	21	577	53	1	115	419	19	1,434		0	0	0	0





(303) 216-2439  
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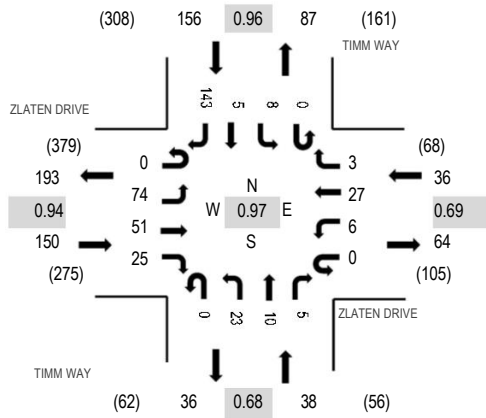
Location: 5 TIMM WAY & ZLATEN DRIVE PM

Date: Thursday, August 25, 2022

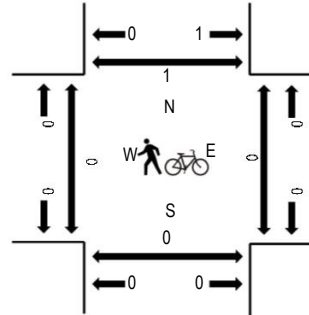
Peak Hour: 04:00 PM - 05:00 PM

Peak 15-Minutes: 04:45 PM - 05:00 PM

### Peak Hour - All Vehicles



### Peak Hour - Pedestrians/Bicycles on Crosswalk



Note: Total study counts contained in parentheses.

### Traffic Counts

Interval Start Time	ZLATEN DRIVE Eastbound				ZLATEN DRIVE Westbound				TIMM WAY Northbound				TIMM WAY Southbound				Total	Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
4:00 PM	0	21	12	4	0	1	7	1	0	4	0	2	0	3	1	36	92	380	0	0	0	0
4:15 PM	0	15	18	7	0	3	10	0	0	4	0	1	0	0	2	37	97	367	0	0	0	1
4:30 PM	0	17	9	8	0	1	4	1	0	7	5	2	0	2	0	37	93	344	0	0	0	0
4:45 PM	0	21	12	6	0	1	6	1	0	8	5	0	0	3	2	33	98	346	0	0	0	0
5:00 PM	0	16	4	6	0	1	5	0	0	6	0	0	0	1	1	39	79	327	0	0	1	0
5:15 PM	0	14	9	3	0	1	9	0	0	3	1	0	0	1	0	33	74		0	0	0	0
5:30 PM	0	25	12	6	0	0	7	1	0	4	1	0	0	1	4	34	95		0	0	0	0
5:45 PM	0	15	11	4	0	0	8	0	0	2	1	0	0	2	0	36	79		0	0	1	1
Count Total	0	144	87	44	0	8	56	4	0	38	13	5	0	13	10	285	707		0	0	2	2
Peak Hour	0	74	51	25	0	6	27	3	0	23	10	5	0	8	5	143	380		0	0	0	1



(303) 216-2439  
www.alltrafficdata.net

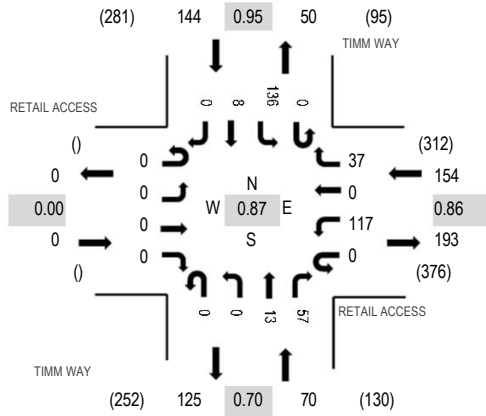
Location: 6 TIMM WAY & RETAIL ACCESS PM

Date: Thursday, August 25, 2022

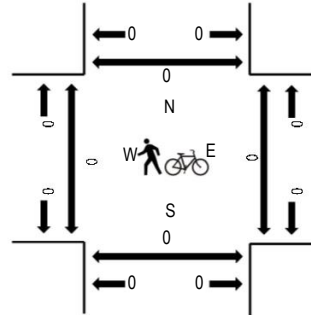
Peak Hour: 04:00 PM - 05:00 PM

Peak 15-Minutes: 04:00 PM - 04:15 PM

### Peak Hour - All Vehicles



### Peak Hour - Pedestrians/Bicycles on Crosswalk



Note: Total study counts contained in parentheses.

### Traffic Counts

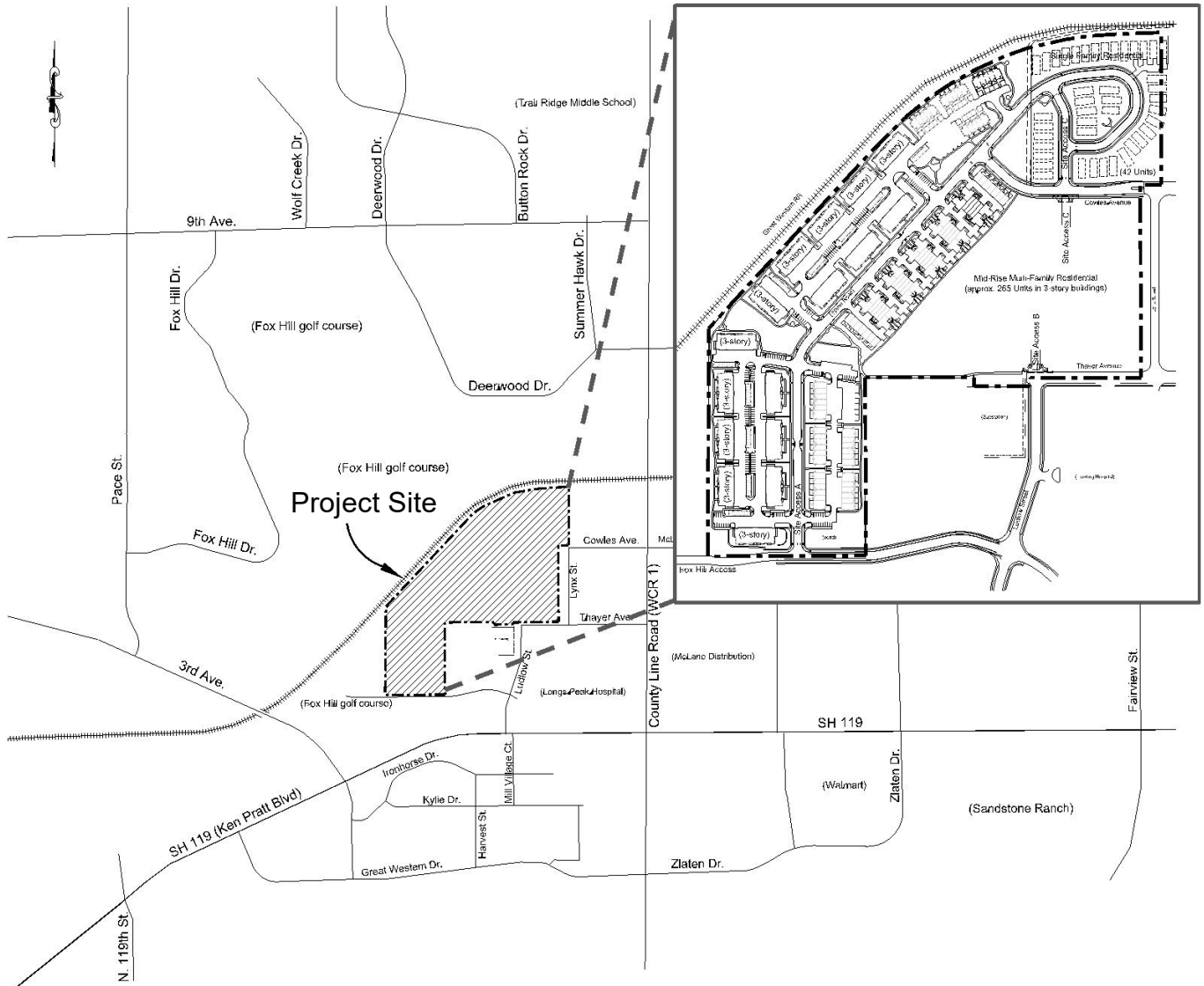
Interval Start Time	RETAIL ACCESS Eastbound				RETAIL ACCESS Westbound				TIMM WAY Northbound				TIMM WAY Southbound				Total	Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
4:00 PM	0	0	0	0	0	32	0	20	0	0	1	15	0	36	2	0	106	368	0	0	0	0
4:15 PM	0	0	0	0	0	30	0	4	0	0	1	11	0	34	2	0	82	346	0	0	0	0
4:30 PM	0	0	0	0	0	25	0	6	0	0	3	14	0	34	2	0	84	357	0	0	0	0
4:45 PM	0	0	0	0	0	30	0	7	0	0	8	17	0	32	2	0	96	366	0	0	0	0
5:00 PM	0	0	0	0	0	30	0	10	0	0	0	13	0	30	1	0	84	355	0	0	0	0
5:15 PM	0	0	0	0	0	30	0	16	0	0	1	9	0	35	2	0	93		0	0	0	0
5:30 PM	0	0	0	0	0	27	0	7	0	0	3	19	0	35	2	0	93		0	0	0	0
5:45 PM	0	0	0	0	0	31	0	7	0	0	1	14	0	28	4	0	85		0	0	0	0
Count Total	0	0	0	0	0	235	0	77	0	0	18	112	0	264	17	0	723		0	0	0	0
Peak Hour	0	0	0	0	0	117	0	37	0	0	13	57	0	136	8	0	368		0	0	0	0

# APPENDIX C

## Future Traffic Projections and Background Studies

# The Highlands Residential Project

## Revised Final Traffic Impact Study



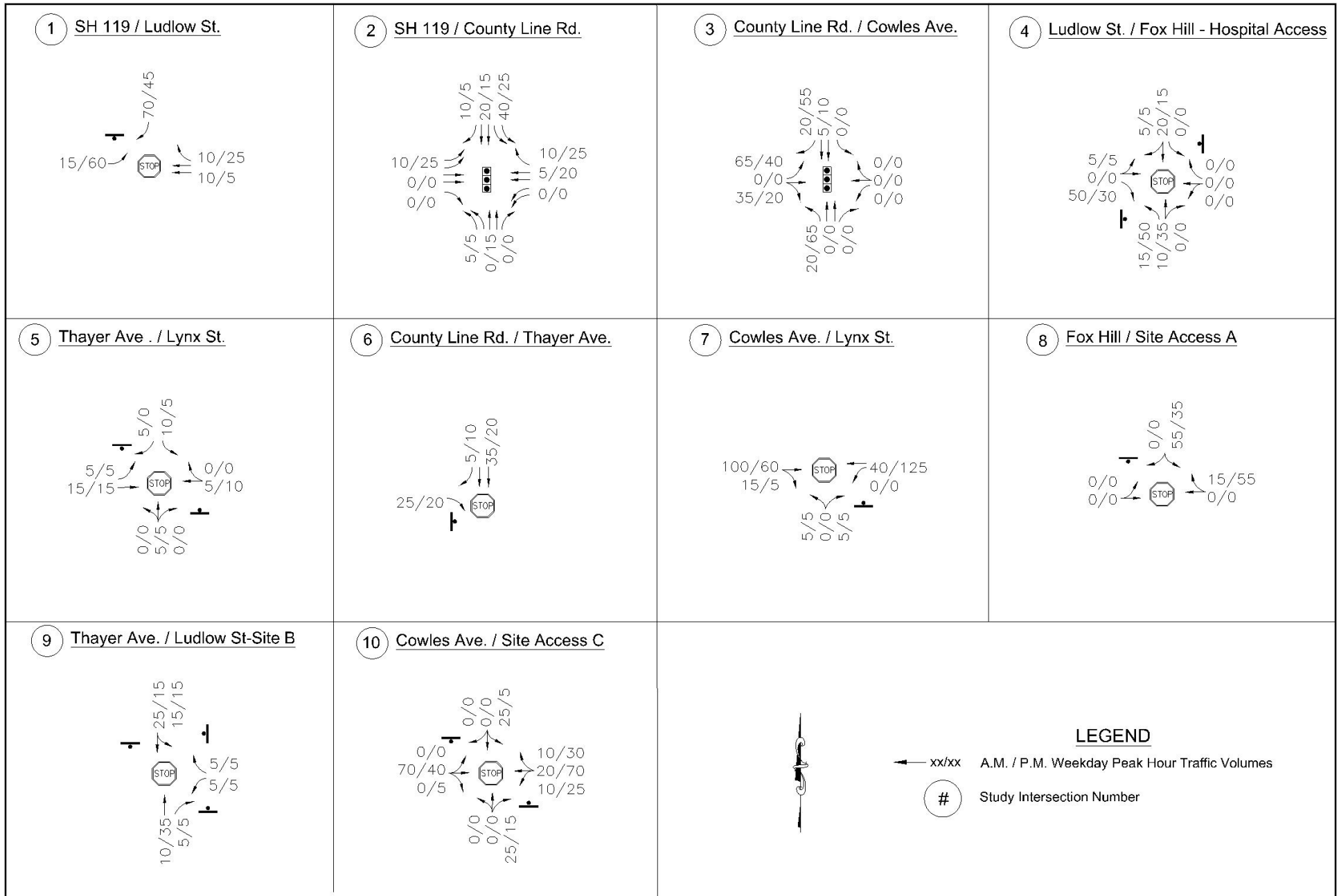
### **Prepared For:**

County Line Ventures, LLC  
6800 N. 79<sup>th</sup> Street, Suite 202  
Niwot, CO 80503

**Date:** July 9, 2020

(Prior dates: Nov. 28, 2018, April 27, 2019, Aug. 2, 2019, and March 17, 2020)

PG#218.003



THE HIGHLANDS RESIDENTIAL PROJECT TRAFFIC IMPACT STUDY  
SITE ADDED PEAK HOUR TRAFFIC VOLUMES

PG Project #	218.003	Original Scale	NTS	Date	08/01/19	Drawn by	JAH	Figure #	7
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# **TRAFFIC IMPACT REPORT**

## **SANDSTONE RANCH MULTIFAMILY LONGMONT, COLORADO**

**June 11, 2021**

Prepared for:  
Davis Development  
7375 W 52<sup>nd</sup> Ave, Suite 200  
Arvada, CO 80002

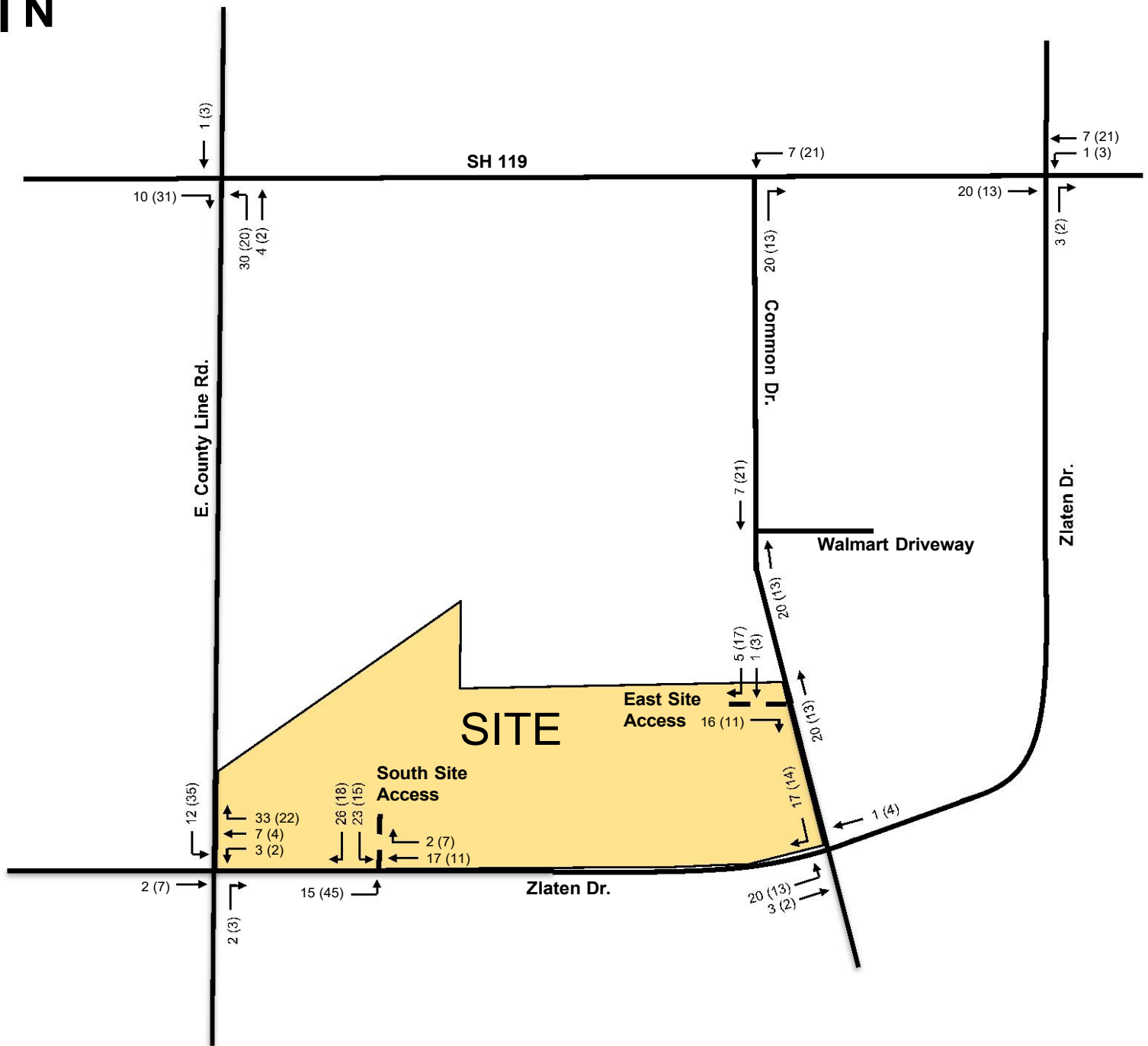
Prepared by:



1120 Lincoln Street  
Denver, CO 80203  
Ph: 303-623-6300



Harris Kocher Smith Project No. 200913



**Legend:** Drawing Not To Scale

↖	5 (8)	Weekday AM (PM)
↔	64 (50)	Peak Hour
↘	8 (7)	Traffic Volumes, vph



**Sandstone Ranch**  
Davis Development  
HKS #200913

## Site Generated Trip Assignment (Modifications at the E. County Line Rd./Zlaten Dr. Intersection)

Figure 14

# **SPRINGS AT LONGMONT**

## **Traffic Impact Analysis**

Prepared for:

Continental 510 Fund LLC  
c/o Continental Properties Company, Inc.  
WI 34 N8675 Executive Parkway  
Menomonee Falls, WI 53051

Prepared by:

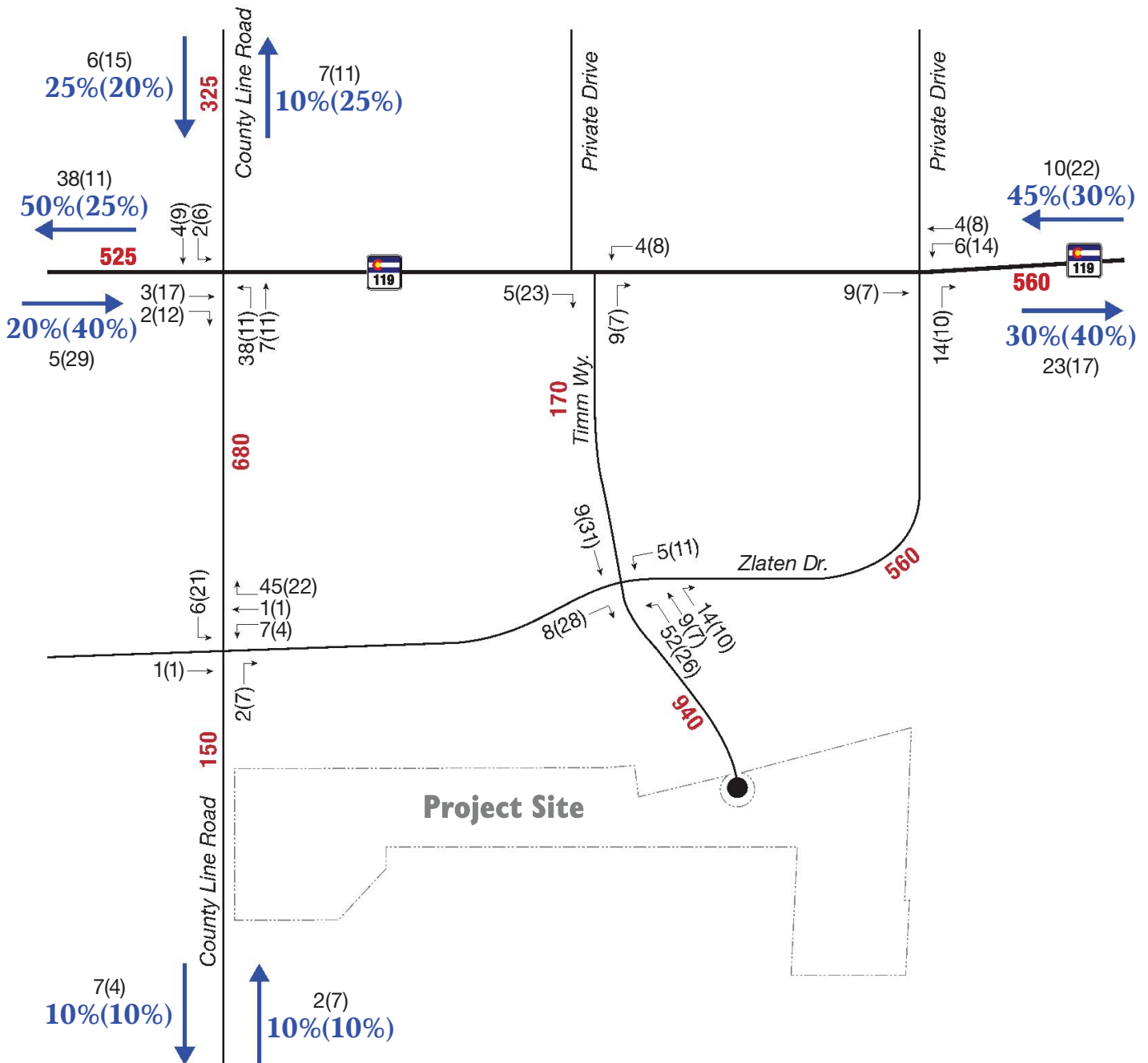
Felsburg Holt & Ullevig  
6400 S Fiddlers Green Circle, Suite 1500  
Greenwood Village, CO 80111  
303.721.1440

Project Manager: Richard R. Follmer, PE, PTOE



FHU Reference No. 120049-01

March 2020  
Revised September 2020



#### LEGEND

- XXX(XXX) = AM(PM) Peak Hour Traffic Volumes
- XX%(XX%) = AM(PM) Peak Hour Site Trip Distribution
- XXXX = Daily Traffic Volumes

# TRAFFIC IMPACT STUDY

For

**7-Eleven Ken Pratt & Zlaten  
Longmont, Colorado**

August 2020

Revised:

March 2021

Prepared for:

United Properties  
1331 17<sup>th</sup> Street, Suite 604  
Denver, Colorado 80202

Prepared by:



**SM ROCHA, LLC**

TRAFFIC AND TRANSPORTATION CONSULTANTS

8703 Yates Drive, Suite 210  
Westminster, Colorado 80031  
(303) 458-9798

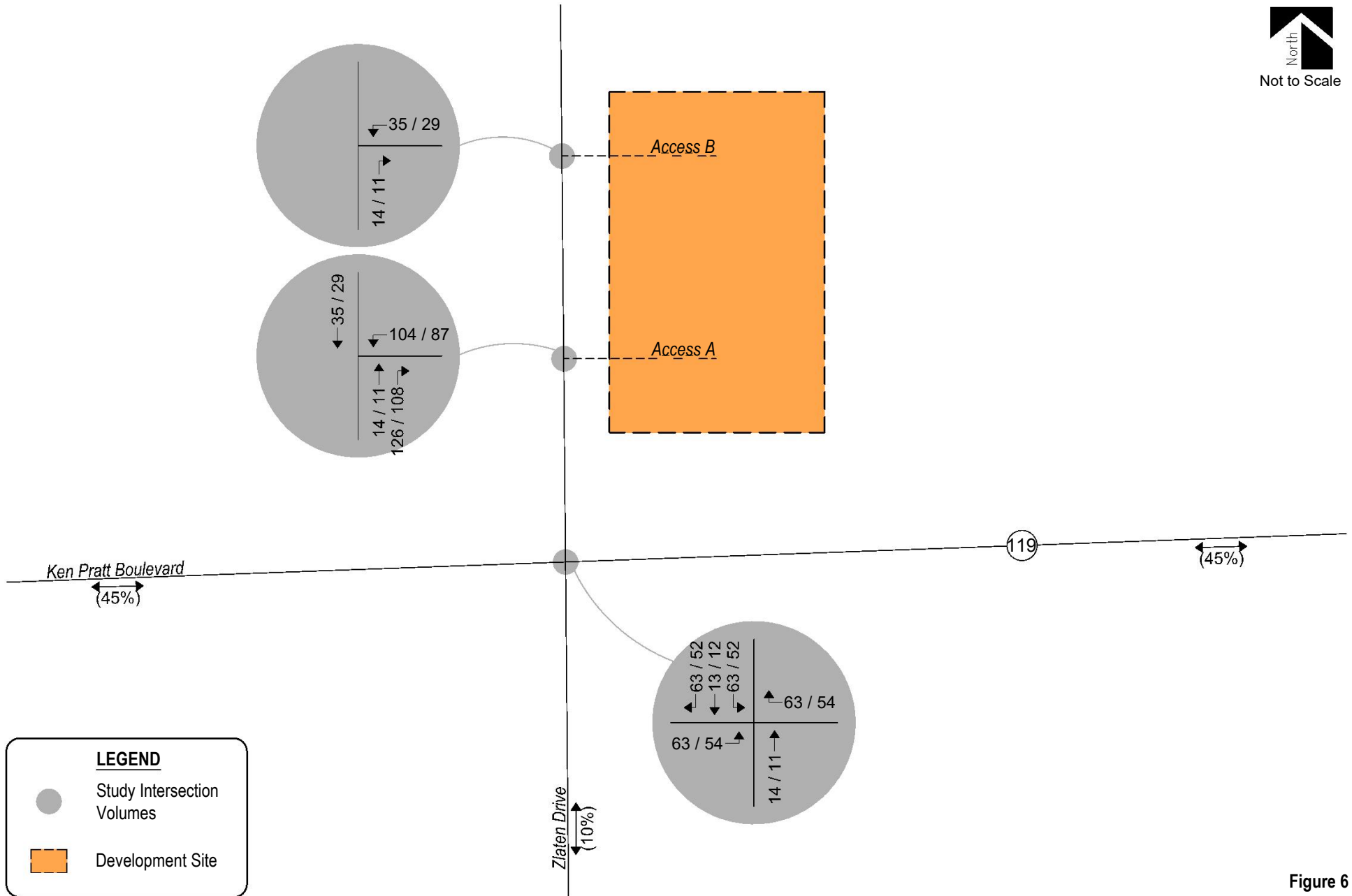
Project Engineer:  
Stephen Simon, EIT

Engineer in Responsible Charge:  
Fred Lantz, PE



19-081049





**Figure 6**  
**SITE DEVELOPMENT DISTRIBUTION**  
(%) : Overall  
**SITE-GENERATED**  
AM / PM Peak Hour



**7-ELEVEN KEN PRATT & ZLATEN**

*Traffic Impact Study*

**SM ROCHA, LLC**

*Traffic and Transportation Consultants*

Planning and Zoning Commission (Livestreamed), June 26, 2024

March 2021

Page 14

**Longmont Roadway Plan Traffic Projections: Sandstone Marketplace**

Location	Daily Volumes			
	2010	2035	Growth Factor	Annual Growth
Ken Pratt Blvd W/O County Line Rd	32,000	45,300	1.42	1.4%
Ken Pratt Blvd E/O County Line Rd	31,900	41,900	1.31	1.1%
County Line Rd N/O Ken Pratt Blvd	14,400	28,900	2.01	2.8%
County Line Rd S/O Ken Pratt Blvd	6,900	21,100	3.06	4.6%
Zlaten Dr E/O County Line Rd	1,500	3,800	2.53	3.8%
Total (Average)	86,700	141,000	1.63	2.0%

# APPENDIX D

## Trip Generation Worksheets

# Trip Generation Planner (ITE 11th Edition) - Summary Report



Weekday Trip Generation  
Trips Based on Average Rates/Equations

Project Name  
Project Number

Sandstone Marketplace  
196569000

ITE Code	Internal Capture Land Use	Land Use Description	Independent Variable	Setting/Location	No. of Units	Avg Rate or Eq	Rates			Total Trips							Net Trips after Internal Capture							Net Trips after Internal Capture & Pass-By						
							Daily Rate	AM Rate	PM Rate	Daily Trips	AM Trips	PM Trips	AM Trips In	AM Trips Out	PM Trips In	PM Trips Out	Daily Trips	AM Trips	PM Trips	AM Trips In	AM Trips Out	PM Trips In	PM Trips Out	Daily Trips	AM Trips	PM Trips	AM Trips In	AM Trips Out	PM Trips In	PM Trips Out
252	Residential	Senior Adult Housing-Attached	Dwelling Unit(s)	General Urban/Suburban	130	Avg	3.24	0.20	0.25	422	26	33	9	17	18	15	258	23	11	9	14	6	5	258	23	11	9	14	6	5
720	Office	Medical-Dental Office Building	1,000 Sq Ft	General Urban/Suburban	60	Avg	36.00	3.10	3.93	2,160	186	236	147	39	71	165	1,676	123	210	120	3	60	150	1,676	123	210	120	3	60	150
565	Other	Day Care Center	1,000 Sq Ft	General Urban/Suburban	10	Avg	47.62	11.00	11.12	478	110	111	58	52	52	59	478	110	111	58	52	52	59	268	62	62	32	29	29	33
822	Retail	Strip Retail Plaza	1,000 Sq Ft	General Urban/Suburban	30.9	Avg	54.45	2.36	6.59	1,682	73	204	44	29	102	102	962	48	99	29	19	37	62	577	29	59	17	11	22	37
930	Restaurant	Fast Casual Restaurant	1,000 Sq Ft	General Urban/Suburban	11.5	Avg	97.14	1.43	12.55	1,118	16	144	8	8	79	65	966	14	119	7	7	69	50	966	14	119	7	7	69	50
932	Restaurant	High-Turnover (Sit-Down) Restaurant	1,000 Sq Ft	General Urban/Suburban	6	Avg	107.20	9.57	9.05	644	57	54	31	26	33	21	558	51	45	28	24	29	16	318	29	25	16	14	16	9
934	Restaurant	Fast-Food Restaurant w/ D.T.	1,000 Sq Ft	General Urban/Suburban	11.5	Avg	467.48	44.61	33.03	5,378	513	380	262	251	198	182	4,648	463	314	234	229	173	140	2,092	232	141	117	114	78	63
Grand Total										11,882	981	1,162	559	422	553	609	9,546	833	908	485	348	426	482	6,155	512	627	318	192	280	347

NCHRP 684 Internal Trip Capture Estimation Tool					
Project Name:	Sandstone Marketplace			Organization:	Kimley-Horn and Associates, Inc.
Project Location:	Longmont, CO			Performed By:	TES
Scenario Description:				Date:	8/16/2022
Analysis Year:				Checked By:	
Analysis Period:	AM Street Peak Hour			Date:	

Table 1-A: Base Vehicle-Trip Generation Estimates (Single-Use Site Estimate)						
Land Use	Development Data (For Information Only)			Estimated Vehicle-Trips <sup>3</sup>		
	ITE LUCs <sup>1</sup>	Quantity	Units	Total	Entering	Exiting
Office		60	1,000 Sq Ft	186	147	39
Retail		31	1,000 Sq Ft	73	44	29
Restaurant		29	1,000 Sq Ft	586	301	285
Cinema/Entertainment		-	Screen(s)	0	0	0
Residential		130	Dwelling Unit(s)	26	9	17
Hotel		-	Room(s)	0	0	0
All Other Land Uses <sup>2</sup>		10	0	110	58	52
				981	559	422

Table 2-A: Mode Split and Vehicle Occupancy Estimates						
Land Use	Entering Trips			Exiting Trips		
	Veh. Occ. <sup>4</sup>	% Transit	% Non-Motorized	Veh. Occ. <sup>4</sup>	% Transit	% Non-Motorized
Office	1.00	0%	0%	1.00	0%	0%
Retail	1.00	0%	0%	1.00	0%	0%
Restaurant	1.00	0%	0%	1.00	0%	0%
Cinema/Entertainment	1.00	0%	0%	1.00	0%	0%
Residential	1.00	0%	0%	1.00	0%	0%
Hotel	1.00	0%	0%	1.00	0%	0%
All Other Land Uses <sup>2</sup>	1.00	0%	0%	1.00	0%	0%

Table 3-A: Average Land Use Interchange Distances (Feet Walking Distance)						
Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office						
Retail						
Restaurant						
Cinema/Entertainment						
Residential						
Hotel						

Table 4-A: Internal Person-Trip Origin-Destination Matrix*						
Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		11	25	0	0	0
Retail	6		4	0	0	0
Restaurant	21	4		0	0	0
Cinema/Entertainment	0	0	0		0	0
Residential	0	0	3	0		0
Hotel	0	0	0	0	0	

Table 5-A: Computations Summary			
	Total	Entering	Exiting
All Person-Trips	981	559	422
Internal Capture Percentage	15%	13%	18%
External Vehicle-Trips <sup>5</sup>	833	485	348
External Transit-Trips <sup>6</sup>	0	0	0
External Non-Motorized Trips <sup>6</sup>	0	0	0

Table 6-A: Internal Trip Capture Percentages by Land Use		
Land Use	Entering Trips	Exiting Trips
Office	18%	92%
Retail	34%	34%
Restaurant	11%	9%
Cinema/Entertainment	N/A	N/A
Residential	0%	18%
Hotel	N/A	N/A

<sup>1</sup> Land Use Codes (LUCs) from <i>Trip Generation Manual</i> , published by the Institute of Transportation Engineers.
<sup>2</sup> Total estimate for all other land uses at mixed-use development site is not subject to internal trip capture computations in this estimator.
<sup>3</sup> Enter trips assuming no transit or non-motorized trips (as assumed in ITE <i>Trip Generation Manual</i> ).
<sup>4</sup> Enter vehicle occupancy assumed in Table 1-A vehicle trips. If vehicle occupancy changes for proposed mixed-use project, manual adjustments must be made to Tables 5-A, 9-A (O and D). Enter transit, non-motorized percentages that will result with proposed mixed-use project complete.
<sup>5</sup> Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-A.
<sup>6</sup> Person-Trips
*Indicates computation that has been rounded to the nearest whole number.
Estimation Tool Developed by the Texas A&M Transportation Institute - Version 2013.1



<b>Project Name:</b>	Sandstone Marketplace
<b>Analysis Period:</b>	AM Street Peak Hour

Table 7-A: Conversion of Vehicle-Trip Ends to Person-Trip Ends						
Land Use	Table 7-A (D): Entering Trips			Table 7-A (O): Exiting Trips		
	Veh. Occ.	Vehicle-Trips	Person-Trips*	Veh. Occ.	Vehicle-Trips	Person-Trips*
Office	1.00	147	147	1.00	39	39
Retail	1.00	44	44	1.00	29	29
Restaurant	1.00	301	301	1.00	285	285
Cinema/Entertainment	1.00	0	0	1.00	0	0
Residential	1.00	9	9	1.00	17	17
Hotel	1.00	0	0	1.00	0	0

Table 8-A (O): Internal Person-Trip Origin-Destination Matrix (Computed at Origin)						
Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		11	25	0	0	0
Retail	8		4	0	4	0
Restaurant	88	40		0	11	9
Cinema/Entertainment	0	0	0		0	0
Residential	0	0	3	0		0
Hotel	0	0	0	0	0	

Table 8-A (D): Internal Person-Trip Origin-Destination Matrix (Computed at Destination)						
Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		14	69	0	0	0
Retail	6		151	0	0	0
Restaurant	21	4		0	0	0
Cinema/Entertainment	0	0	0		0	0
Residential	4	7	60	0		0
Hotel	4	2	18	0	0	

Table 9-A (D): Internal and External Trips Summary (Entering Trips)						
Destination Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles <sup>1</sup>	Transit <sup>2</sup>	Non-Motorized <sup>2</sup>
Office	27	120	147	120	0	0
Retail	15	29	44	29	0	0
Restaurant	32	269	301	269	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	0	9	9	9	0	0
Hotel	0	0	0	0	0	0
All Other Land Uses <sup>3</sup>	0	58	58	58	0	0

Table 9-A (O): Internal and External Trips Summary (Exiting Trips)						
Origin Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles <sup>1</sup>	Transit <sup>2</sup>	Non-Motorized <sup>2</sup>
Office	36	3	39	3	0	0
Retail	10	19	29	19	0	0
Restaurant	25	260	285	260	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	3	14	17	14	0	0
Hotel	0	0	0	0	0	0
All Other Land Uses <sup>3</sup>	0	52	52	52	0	0

<sup>1</sup>Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-A

<sup>2</sup>Person-Trips

<sup>3</sup>Total estimate for all other land uses at mixed-use development site is not subject to internal trip capture computations in this estimator

\*Indicates computation that has been rounded to the nearest whole number.

NCHRP 684 Internal Trip Capture Estimation Tool					
Project Name:	Sandstone Marketplace			Organization:	Kimley-Horn and Associates, Inc.
Project Location:	Longmont, CO			Performed By:	TES
Scenario Description:				Date:	8/16/2022
Analysis Year:				Checked By:	
Analysis Period:	PM Street Peak Hour			Date:	

Table 1-P: Base Vehicle-Trip Generation Estimates (Single-Use Site Estimate)						
Land Use	Development Data (For Information Only)			Estimated Vehicle-Trips		
	ITE LUCs <sup>1</sup>	Quantity	Units	Total	Entering	Exiting
Office		60	1,000 Sq Ft	236	71	165
Retail		31	1,000 Sq Ft	204	102	102
Restaurant		29	1,000 Sq Ft	578	310	268
Cinema/Entertainment		-	Screen(s)	0	0	0
Residential		130	Dwelling Unit(s)	33	18	15
Hotel		-	Room(s)	0	0	0
All Other Land Uses <sup>2</sup>		10	0	111	52	59
				1,162	553	609

Table 2-P: Mode Split and Vehicle Occupancy Estimates						
Land Use	Entering Trips			Exiting Trips		
	Veh. Occ. <sup>4</sup>	% Transit	% Non-Motorized	Veh. Occ. <sup>4</sup>	% Transit	% Non-Motorized
Office	1.00	0%	0%	1.00	0%	0%
Retail	1.00	0%	0%	1.00	0%	0%
Restaurant	1.00	0%	0%	1.00	0%	0%
Cinema/Entertainment	1.00	0%	0%	1.00	0%	0%
Residential	1.00	0%	0%	1.00	0%	0%
Hotel	1.00	0%	0%	1.00	0%	0%
All Other Land Uses <sup>2</sup>	1.00	0%	0%	1.00	0%	0%

Table 3-P: Average Land Use Interchange Distances (Feet Walking Distance)						
Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office						
Retail						
Restaurant						
Cinema/Entertainment						
Residential						
Hotel						

Table 4-P: Internal Person-Trip Origin-Destination Matrix*						
Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		8	6	0	1	0
Retail	2		30	0	8	0
Restaurant	8	51		0	3	0
Cinema/Entertainment	0	0	0		0	0
Residential	1	6	3	0		0
Hotel	0	0	0	0	0	

Table 5-P: Computations Summary			
	Total	Entering	Exiting
All Person-Trips	1,162	553	609
Internal Capture Percentage	22%	23%	21%
External Vehicle-Trips <sup>5</sup>	908	426	482
External Transit-Trips <sup>6</sup>	0	0	0
External Non-Motorized Trips <sup>6</sup>	0	0	0

Table 6-P: Internal Trip Capture Percentages by Land Use		
Land Use	Entering Trips	Exiting Trips
Office	15%	9%
Retail	64%	39%
Restaurant	13%	23%
Cinema/Entertainment	N/A	N/A
Residential	67%	67%
Hotel	N/A	N/A

<sup>1</sup> Land Use Codes (LUCs) from <i>Trip Generation Manual</i> , published by the Institute of Transportation Engineers.
<sup>2</sup> Total estimate for all other land uses at mixed-use development site is not subject to internal trip capture computations in this estimator.
<sup>3</sup> Enter trips assuming no transit or non-motorized trips (as assumed in ITE <i>Trip Generation Manual</i> ).
<sup>4</sup> Enter vehicle occupancy assumed in Table 1-P vehicle trips. If vehicle occupancy changes for proposed mixed-use project, manual adjustments must be made.
<sup>5</sup> Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-P.
<sup>6</sup> Person-Trips
*Indicates computation that has been rounded to the nearest whole number.
Estimation Tool Developed by the Texas A&M Transportation Institute - Version 2013.1

<b>Project Name:</b>	Sandstone Marketplace
<b>Analysis Period:</b>	PM Street Peak Hour

Table 7-P: Conversion of Vehicle-Trip Ends to Person-Trip Ends						
Land Use	Table 7-P (D): Entering Trips			Table 7-P (O): Exiting Trips		
	Veh. Occ.	Vehicle-Trips	Person-Trips*	Veh. Occ.	Vehicle-Trips	Person-Trips*
Office	1.00	71	71	1.00	165	165
Retail	1.00	102	102	1.00	102	102
Restaurant	1.00	310	310	1.00	268	268
Cinema/Entertainment	1.00	0	0	1.00	0	0
Residential	1.00	18	18	1.00	15	15
Hotel	1.00	0	0	1.00	0	0

Table 8-P (O): Internal Person-Trip Origin-Destination Matrix (Computed at Origin)						
Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		33	7	0	3	0
Retail	2		30	4	27	5
Restaurant	8	110		21	48	19
Cinema/Entertainment	0	0	0		0	0
Residential	1	6	3	0		0
Hotel	0	0	0	0	0	

Table 8-P (D): Internal Person-Trip Origin-Destination Matrix (Computed at Destination)						
Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		8	6	0	1	0
Retail	22		90	0	8	0
Restaurant	21	51		0	3	0
Cinema/Entertainment	4	4	9		1	0
Residential	40	10	43	0		0
Hotel	0	2	16	0	0	

Table 9-P (D): Internal and External Trips Summary (Entering Trips)						
Destination Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles <sup>1</sup>	Transit <sup>2</sup>	Non-Motorized <sup>2</sup>
Office	11	60	71	60	0	0
Retail	65	37	102	37	0	0
Restaurant	39	271	310	271	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	12	6	18	6	0	0
Hotel	0	0	0	0	0	0
All Other Land Uses <sup>3</sup>	0	52	52	52	0	0

Table 9-P (O): Internal and External Trips Summary (Exiting Trips)						
Origin Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles <sup>1</sup>	Transit <sup>2</sup>	Non-Motorized <sup>2</sup>
Office	15	150	165	150	0	0
Retail	40	62	102	62	0	0
Restaurant	62	206	268	206	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	10	5	15	5	0	0
Hotel	0	0	0	0	0	0
All Other Land Uses <sup>3</sup>	0	59	59	59	0	0

<sup>1</sup>Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-P

<sup>2</sup>Person-Trips

<sup>3</sup>Total estimate for all other land uses at mixed-use development site is not subject to internal trip capture computations in this estimator

\*Indicates computation that has been rounded to the nearest whole number.

Project Sandstone Marketplace  
 Subject Trip Generation for Senior Adult Housing - Multifamily  
 Designed by TES Date August 16, 2022 Job No. 196569000  
 Checked by \_\_\_\_\_ Date \_\_\_\_\_ Sheet No. \_\_\_\_\_ of \_\_\_\_\_

## **TRIP GENERATION MANUAL TECHNIQUES**

ITE Trip Generation Manual 11th Edition, Average Rate Equations

Land Use Code - Senior Adult Housing - Multifamily (252)

Independent Variable - Dwelling Units (X)

$$X = 130$$

T = Average Vehicle Trip Ends

### **Peak Hour of Adjacent Street Traffic, One Hour Between 7 and 9 a.m. (200 Series Page 416)**

Average Weekday	Directional Distribution:	34% ent.	66% exit.
(T) = 0.20 (X)	T = 26	Average Vehicle Trip Ends	
(T) = 0.20 * (130.0)	9 entering	17 exiting	
	9 + 17 = 26		

### **Peak Hour of Adjacent Street Traffic, One Hour Between 4 and 6 p.m. (200 Series Page 417)**

Average Weekday	Directional Distribution:	56% ent.	44% exit.
(T) = 0.25 (X)	T = 33	Average Vehicle Trip Ends	
(T) = 0.25 * (130.0)	18 entering	15 exiting	
	18 + 15 = 33		

### **Weekday (200 Series Page 415)**

Average Weekday	Directional Distribution:	50% ent.	50% exit.
(T) = 3.24 (X)	T = 422	Average Vehicle Trip Ends	
(T) = 3.24 * (130.0)	211 entering	211 exiting	
	211 + 211 = 422		

Project Sandstone Marketplace  
 Subject Trip Generation for Day Care Center  
 Designed by TES Date August 16, 2022 Job No. 196569000  
 Checked by \_\_\_\_\_ Date \_\_\_\_\_ Sheet No. \_\_\_\_\_ of \_\_\_\_\_

## TRIP GENERATION MANUAL TECHNIQUES

ITE Trip Generation Manual 11th Edition, Average Rate Equations

Land Use Code - Day Care Center (565)

Independent Variable - 1000 Square Feet Gross Floor Area (X)

Gross Floor Area = 10,000 Square Feet

X = 10.000

T = Average Vehicle Trip Ends

### Peak Hour of Adjacent Street Traffic, One Hour Between 7 and 9 a.m. (500 Series page 519)

Average Weekday	Directional Distribution:	53% ent.	47% exit.
T = 11.00 (X)	T = 110	Average Vehicle Trip Ends	
T = 11.00 * 10.000	58 entering	52 exiting	
	58 + 52 =	110	

### Peak Hour of Adjacent Street Traffic, One Hour Between 4 and 6 p.m. (500 Series page 520)

Average Weekday	Directional Distribution:	47% ent.	53% exit.
T = 11.12 (X)	T = 111	Average Vehicle Trip Ends	
T = 11.12 * 10.000	52 entering	59 exiting	
	52 + 59 =	111	

### Weekday (500 Series page 518)

Average Weekday	Directional Distribution:	50% entering, 50% exiting
T = 47.62 (X)	T = 478	Average Vehicle Trip Ends
T = 47.62 * 10.000	239 entering	239 exiting
	239 + 239 =	478

### Non Pass-By Trip Volumes (Per ITE Trip Generation Manual, 11th Edition)

AM Peak Hour =	56%	Non-Pass By	PM Peak Hour =	56%	Non-Pass By
	IN	Out	Total		
AM Peak	32	29	62	PM Peak Hour Rate Applied to AM	
PM Peak	29	33	62		
Daily	134	134	268	PM Peak Hour Rate Applied to Daily	

### Pass-By Trip Volumes (Per Trip Generation Manual, 11th Edition)

AM Peak Hour =	44%	Pass By	PM Peak Hour =	44%	Pass By
	IN	Out	Total		
AM Peak	26	23	48	PM Peak Hour Rate Applied to AM	
PM Peak	23	26	49		
Daily	105	105	210	PM Peak Hour Rate Applied to Daily	

Project Sandstone Marketplace  
 Subject Trip Generation for General Medical-Dental Office Building - Stand-Alone  
 Designed by TES Date August 16, 2022 Job No. 196569000  
 Checked by \_\_\_\_\_ Sheet No. \_\_\_\_\_ of \_\_\_\_\_

## **TRIP GENERATION MANUAL TECHNIQUES**

ITE Trip Generation Manual 11th Edition, Average Rates

Land Use Code - Medical-Dental Office Building (720)

Independent Variable - 1000 Square Feet (X)

SF = 60,000

X = 60.000

T = Average Vehicle Trip Ends

### **Peak Hour of Adjacent Street Traffic, One Hour Between 7 and 9 a.m. (700 Series Page 762)**

(T) = 3.10 (X)		Directional Distribution:	79% ent.	21% exit.
(T) = 3.10 *	(60.0)	T = 186	Average Vehicle Trip Ends	
		147 entering	39	exiting
		147 + 39 =	186	

### **Peak Hour of Adjacent Street Traffic, One Hour Between 4 and 6 p.m. (700 Series Page 763)**

(T) = 3.93 (X)		Directional Distribution:	30% ent.	70% exit.
(T) = 3.93 *	(60.0)	T = 236	Average Vehicle Trip Ends	
		71 entering	165	exiting
		71 + 165 =	236	

### **Weekday (700 Series Page 761)**

(T) = 36.00 (X)		Directional Distribution:	50% ent.	50% exit.
(T) = 36.00 *	(60.0)	T = 2160	Average Vehicle Trip Ends	
		1080 entering	1080	exiting
		1080 + 1080 =	2160	



Project Sandstone Marketplace  
 Subject Trip Generation for Strip Retail Plaza (<40k)  
 Designed by TES Date August 16, 2022 Job No. 196569000  
 Checked by \_\_\_\_\_ Date \_\_\_\_\_ Sheet No. \_\_\_\_\_ of \_\_\_\_\_

## TRIP GENERATION MANUAL TECHNIQUES

ITE Trip Generation Manual 11th Edition, Average Rate Equations

Land Use Code - Strip Retail Plaza (<40k) (822)

Independent Variable - 1000 Square Feet Gross Leasable Area (X)

Gross Leasable Area = 30,900 Square Feet

X = 30.900

T = Average Vehicle Trip Ends

### Peak Hour of Adjacent Street Traffic, One Hour Between 7 and 9 a.m. (800 Series Page 230)

Average Weekday	Directional Distribution:	60% ent.	40% exit.
T = 2.36 * (X)	T = 73	Average Vehicle Trip Ends	
T = 2.36 * 30.9	44 entering	29 exiting	
	44 + 29 = 73		

### Peak Hour of Adjacent Street Traffic, One Hour Between 4 and 6 p.m. (800 Series page 231)

Average Weekday	Directional Distribution:	50% ent.	50% exit.
T = 6.59 * (X)	T = 204	Average Vehicle Trip Ends	
T = 6.59 * 30.9	102 entering	102 exiting	
	102 + 102 = 204		

### Weekday (800 Series page 229)

Average Weekday	Directional Distribution: 50% entering, 50% exiting
T = 54.45 * (X)	T = 1682 Average Vehicle Trip Ends
T = 54.45 * 30.9	841 entering 841 exiting
	841 + 841 = 1682

### Non Pass-By Trip Volumes (Per ITE Trip Generation Manual, 11th Edition)

AM Peak Hour = 60% Non-Pass By	PM Peak Hour = 60% Non-Pass By
IN Out Total	Pass-By Rates from ITE 821
AM Peak 26 17 44	PM Peak Hour Rate Applied to AM Peak Hour
PM Peak 61 61 123	
Daily 505 505 1010	PM Peak Hour Rate Applied to Daily

### Pass-By Trip Volumes (Per ITE Trip Generation Manual, 11th Edition)

AM Peak Hour = 40% Pass By	PM Peak Hour = 40% Pass By
IN Out Total	
AM Peak 18 12 30	PM Peak Hour Rate Applied to AM Peak Hour
PM Peak 41 41 82	
Daily 336 336 672	PM Peak Hour Rate Applied to Daily

Project Sandstone Marketplace  
 Subject Trip Generation for Fast Casual Restaurant  
 Designed by TES Date August 16, 2022 Job No. 196569000  
 Checked by \_\_\_\_\_ Date \_\_\_\_\_ Sheet No. 1 of 1

## **TRIP GENERATION MANUAL TECHNIQUES**

ITE Trip Generation Manual 11th Edition, Average Rates

Land Use Code - Fast Casual Restaurant (930)

Independant Variable - 1000 Square Feet (X)

SF = 11,500

X = 11.500

T = Average Vehicle Trip Ends

### **Peak Hour of Adjacent Street Traffic, One Hour Between 7 and 9 a.m. (900 Series Page 640)**

(Note: Small Sample Size < 5)

(T) = 1.43 (X)	Directional Distribution:	50% ent.	50% exit.
(T) = 1.43 * (11.5)	T = 16	Average Vehicle Trip Ends	
	8 entering	8	exiting
	8 + 8 = 16		

### **Peak Hour of Adjacent Street Traffic, One Hour Between 4 and 6 p.m. (900 Series Page 641)**

(T) = 12.55 (X)	Directional Distribution:	55% ent.	45% exit.
(T) = 12.55 * (11.5)	T = 144	Average Vehicle Trip Ends	
	79 entering	65	exiting
	79 + 65 = 144		

### **Weekday (900 Series Page 639)**

(Note: Small Sample Size < 5)

(T) = 97.14 (X)	Directional Distribution:	50% ent.	50% exit.
(T) = 97.14 * (11.5)	T = 1118	Average Vehicle Trip Ends	
	559 entering	559	exiting
	559 + 559 = 1118		

Project Sandstone Marketplace  
 Subject Trip Generation for High Turnover Sit-Down Restaurant  
 Designed by TES Date August 16, 2022 Job No. 196569000  
 Checked by \_\_\_\_\_ Date \_\_\_\_\_ Sheet No. \_\_\_\_\_ of \_\_\_\_\_

## TRIP GENERATION MANUAL TECHNIQUES

ITE Trip Generation Manual 11th Edition, Average Rates

Land Use Code - High Turnover Sit-Down Restaurant (932)

Independent Variable - 1000 Square Feet (X)

SF = 6,000

X = 6.000

T = Average Vehicle Trip Ends

### Peak Hour of Adjacent Street Traffic, One Hour Between 7 and 9 a.m. (900 Series Page 674)

(T) = 9.57 (X)		Directional Distribution:	55% ent.	45% exit.
(T) = 9.57 *	(6.0)	T = 57	Average Vehicle Trip Ends	
		31 entering	26 exiting	
		31 + 26 = 57		

### Peak Hour of Adjacent Street Traffic, One Hour Between 4 and 6 p.m. (900 Series Page 674)

(T) = 9.05 (X)		Directional Distribution:	61% ent.	39% exit.
(T) = 9.05 *	(6.0)	T = 54	Average Vehicle Trip Ends	
		33 entering	21 exiting	
		33 + 21 = 54		

### Weekday (900 Series Page 673)

(T) = 107.20 (X)		Directional Distribution:	50% ent.	50% exit.
(T) = 107.20 *	(6.0)	T = 644	Average Vehicle Trip Ends	
		322 entering	322 exiting	
		322 + 322 = 644		

### Non Pass-By Trip Volumes (Per ITE Trip Generation Manual, 11th Edition)

AM Peak Hour =	57%	Non-Pass By	PM Peak Hour =	57%	Non-Pass By
	IN	Out	Total		
AM Peak	18	15	33	PM Peak Hour Rate Applied to AM Peak Hour	
PM Peak	19	12	31		
Daily	184	184	368	PM Peak Hour Rate Applied to Daily	

### Pass-By Trip Volumes (Per ITE Trip Generation Manual, 11th Edition)

AM Peak Hour =	43%	Pass By	PM Peak Hour =	43%	Pass By
	IN	Out	Total		
AM Peak	13	11	25	PM Peak Hour Rate Applied to AM Peak Hour	
PM Peak	14	9	23		
Daily	138	138	276	PM Peak Hour Rate Applied to Daily	

Project Sandstone Marketplace  
 Subject Trip Generation for Fast-Food Restaurant with Drive-Through Window  
 Designed by TES Date August 16, 2022 Job No. 196569000  
 Checked by \_\_\_\_\_ Date \_\_\_\_\_ Sheet No. \_\_\_\_\_ of \_\_\_\_\_

## **TRIP GENERATION MANUAL TECHNIQUES**

ITE Trip Generation Manual 11th Edition, Average Rates

Land Use Code - Fast-Food Restaurant with Drive-Through Window (934)

Independent Variable - 1000 Square Feet (X)

SF = 11,500

X = 11.500

T = Average Vehicle Trip Ends

### **Peak Hour of Adjacent Street Traffic, One Hour Between 7 and 9 a.m. (900 Series Page 726)**

(T) = 44.61 (X)  
 (T) = 44.61 \* (11.5)

Directional Distribution: 51% ent. 49% exit.  
 T = 513 Average Vehicle Trip Ends  
 262 entering 251 exiting  
 262 + 251 = 513

### **Peak Hour of Adjacent Street Traffic, One Hour Between 4 and 6 p.m. (900 Series Page 727)**

(T) = 33.03 (X)  
 (T) = 33.03 \* (11.5)

Directional Distribution: 52% ent. 48% exit.  
 T = 380 Average Vehicle Trip Ends  
 198 entering 182 exiting  
 198 + 182 = 380

### **Weekday (900 Series Page 725)**

(T) = 467.48 (X)  
 (T) = 467.48 \* (11.5)

Directional Distribution: 50% ent. 50% exit.  
 T = 5378 Average Vehicle Trip Ends  
 2689 entering 2689 exiting  
 2689 + 2689 = 5378

### **Non Pass-By Trip Volumes (Per ITE Trip Generation Manual, 11th Edition)**

AM Peak Hour =	50%	Non-Pass By	PM Peak Hour =	45%	Non-Pass By
	IN	Out	Total		
AM Peak	131	126	257		
PM Peak	89	82	171		
Daily	1210	1210	2420		PM Peak Hour Rate Applied to Daily

### **Pass-By Trip Volumes (Per Trip Generation Manual, 11th Edition)**

























AM Peak Hour =	50%	Pass By	PM Peak Hour =	55%	Pass By
	IN	Out	Total		
AM Peak	131	126	257		
PM Peak	109	100	209		
Daily	1479	1479	2958		PM Peak Hour Rate Applied to Daily

# APPENDIX E

## Intersection Analysis Worksheets

Timings  
1: County Line Rd & SH-119

2022 Existing AM  
09/15/2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	120	674	91	52	1462	335	309	229	47	427	266	481
Future Volume (vph)	120	674	91	52	1462	335	309	229	47	427	266	481
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Free	Prot	NA	Free
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			Free			Free
Detector Phase	7	4	4	3	8	8	5	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Minimum Split (s)	11.0	24.0	24.0	11.0	24.0	24.0	11.0	24.0		11.0	24.0	
Total Split (s)	11.0	62.0	62.0	11.0	62.0	62.0	23.0	24.0		23.0	24.0	
Total Split (%)	9.2%	51.7%	51.7%	9.2%	51.7%	51.7%	19.2%	20.0%		19.2%	20.0%	
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	4.5	4.5		4.5	4.5	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.5	1.5		1.5	1.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0		6.0	6.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	Max		None	Max	
Act Effct Green (s)	5.0	58.2	58.2	5.0	56.0	56.0	15.6	18.0	120.0	17.0	19.4	120.0
Actuated g/C Ratio	0.04	0.48	0.48	0.04	0.47	0.47	0.13	0.15	1.00	0.14	0.16	1.00
v/c Ratio	0.90	0.42	0.12	0.39	0.95	0.39	0.74	0.46	0.03	0.94	0.50	0.33
Control Delay	110.3	21.5	1.4	52.8	53.8	11.2	60.8	49.8	0.0	80.4	49.8	0.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	110.3	21.5	1.4	52.8	53.8	11.2	60.8	49.8	0.0	80.4	49.8	0.6
LOS	F	C	A	D	D	B	E	D	A	F	D	A
Approach Delay		31.5			46.1			51.6			40.8	
Approach LOS		C			D			D			D	

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 0 (0%), Referenced to phase 4:EBT and 8:WBT, Start of Green

Natural Cycle: 110

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.95

Intersection Signal Delay: 42.5

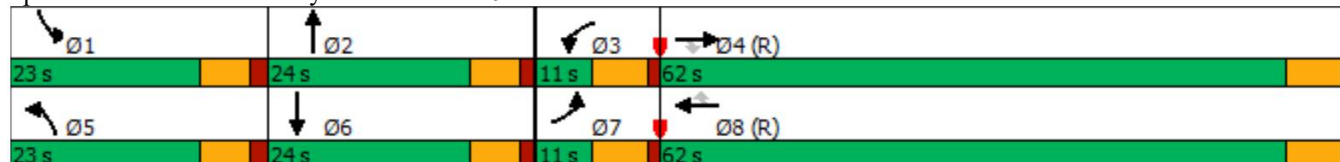
Intersection LOS: D

Intersection Capacity Utilization 83.1%

ICU Level of Service E

Analysis Period (min) 15

Splits and Phases: 1: County Line Rd & SH-119





























# HCM 6th Signalized Intersection Summary

## 1: County Line Rd & SH-119

























2022 Existing AM

09/15/2022

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	120	674	91	52	1462	335	309	229	47	427	266	481
Future Volume (veh/h)	120	674	91	52	1462	335	309	229	47	427	266	481
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	129	725	0	56	1572	360	332	246	0	459	286	0
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	144	1681		122	1658	740	395	533		490	630	
Arrive On Green	0.04	0.47	0.00	0.01	0.15	0.15	0.11	0.15	0.00	0.14	0.18	0.00
Sat Flow, veh/h	3456	3554	1585	3456	3554	1585	3456	3554	1585	3456	3554	1585
Grp Volume(v), veh/h	129	725	0	56	1572	360	332	246	0	459	286	0
Grp Sat Flow(s),veh/h/ln	1728	1777	1585	1728	1777	1585	1728	1777	1585	1728	1777	1585
Q Serve(g_s), s	4.5	16.2	0.0	1.9	52.6	24.9	11.3	7.6	0.0	15.8	8.6	0.0
Cycle Q Clear(g_c), s	4.5	16.2	0.0	1.9	52.6	24.9	11.3	7.6	0.0	15.8	8.6	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	144	1681		122	1658	740	395	533		490	630	
V/C Ratio(X)	0.90	0.43		0.46	0.95	0.49	0.84	0.46		0.94	0.45	
Avail Cap(c_a), veh/h	144	1681		144	1658	740	490	533		490	630	
HCMPlatoon Ratio	1.00	1.00	1.00	0.33	0.33	0.33	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	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	57.2	20.9	0.0	58.2	49.3	37.6	52.1	46.6	0.0	51.0	44.2	0.0
Incr Delay (d2), s/veh	45.6	0.8	0.0	2.7	12.8	2.3	10.4	2.9	0.0	25.9	2.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.9	6.9	0.0	0.9	28.0	11.1	5.5	3.6	0.0	8.6	4.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	102.9	21.7	0.0	60.9	62.1	39.9	62.4	49.4	0.0	76.9	46.5	0.0
LnGrp LOS	F	C		E	E	D	E	D		E	D	
Approach Vol, veh/h		854	A		1988			578	A		745	A
Approach Delay, s/veh		34.0			58.0			56.9			65.2	
Approach LOS		C			E			E			E	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	23.0	24.0	10.2	62.8	19.7	27.3	11.0	62.0				
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0				
Max Green Setting (Gmax), s	17.0	18.0	5.0	56.0	17.0	18.0	5.0	56.0				
Max Q Clear Time (g_c+I1), s	17.8	9.6	3.9	18.2	13.3	10.6	6.5	54.6				
Green Ext Time (p_c), s	0.0	0.9	0.0	5.9	0.4	1.0	0.0	1.3				
<b>Intersection Summary</b>												
HCM6th Ctrl Delay			54.2									
HCM6th LOS			D									
<b>Notes</b>												
User approved pedestrian interval to be less than phase max green.												
Unsignalized Delay for [NBR, EBR, SBR] is excluded from calculations of the approach delay and intersection delay.												

Timings  
1: County Line Rd & SH-119

2022 Existing PM  
09/15/2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	341	1405	246	42	860	480	269	385	67	382	283	206
Future Volume (vph)	341	1405	246	42	860	480	269	385	67	382	283	206
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Free	Prot	NA	Free
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			Free			Free
Detector Phase	7	4	4	3	8	8	5	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Minimum Split (s)	11.0	24.0	24.0	11.0	24.0	24.0	11.0	24.0		11.0	24.0	
Total Split (s)	24.0	63.0	63.0	11.0	50.0	50.0	21.0	24.0		22.0	25.0	
Total Split (%)	20.0%	52.5%	52.5%	9.2%	41.7%	41.7%	17.5%	20.0%		18.3%	20.8%	
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	4.5	4.5		4.5	4.5	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.5	1.5		1.5	1.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0		6.0	6.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	Max		None	Max	
Act Effct Green (s)	16.3	59.2	59.2	5.0	45.7	45.7	13.7	18.3	120.0	15.7	20.3	120.0
Actuated g/C Ratio	0.14	0.49	0.49	0.04	0.38	0.38	0.11	0.15	1.00	0.13	0.17	1.00
v/c Ratio	0.74	0.81	0.28	0.29	0.64	0.57	0.69	0.72	0.04	0.86	0.48	0.13
Control Delay	59.8	31.1	4.8	51.9	51.0	25.1	60.8	57.0	0.0	70.4	48.5	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	59.8	31.1	4.8	51.9	51.0	25.1	60.8	57.0	0.0	70.4	48.5	0.2
LOS	E	C	A	D	D	C	E	E	A	E	D	A
Approach Delay		32.8			42.0			53.1			46.7	
Approach LOS		C			D			D			D	

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 0 (0%), Referenced to phase 4:EBT and 8:WBT, Start of Green

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.86

Intersection Signal Delay: 40.7

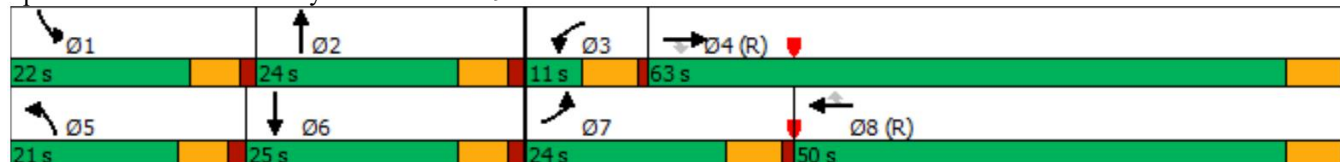
Intersection LOS: D

Intersection Capacity Utilization 84.5%

ICU Level of Service E

Analysis Period (min) 15

Splits and Phases: 1: County Line Rd & SH-119



























# HCM 6th Signalized Intersection Summary

## 1: County Line Rd & SH-119

2022 Existing PM

09/15/2022

























												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	341	1405	246	42	860	480	269	385	67	382	283	206
Future Volume (veh/h)	341	1405	246	42	860	480	269	385	67	382	283	206
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	344	1419	0	42	869	243	272	389	0	386	286	0
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	409	1745		108	1436	641	334	533		441	643	
Arrive On Green	0.12	0.49	0.00	0.01	0.13	0.13	0.10	0.15	0.00	0.13	0.18	0.00
Sat Flow, veh/h	3456	3554	1585	3456	3554	1585	3456	3554	1585	3456	3554	1585
Grp Volume(v), veh/h	344	1419	0	42	869	243	272	389	0	386	286	0
Grp Sat Flow(s),veh/h/ln	1728	1777	1585	1728	1777	1585	1728	1777	1585	1728	1777	1585
Q Serve(g_s), s	11.7	40.6	0.0	1.4	27.7	16.8	9.3	12.5	0.0	13.2	8.6	0.0
Cycle Q Clear(g_c), s	11.7	40.6	0.0	1.4	27.7	16.8	9.3	12.5	0.0	13.2	8.6	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	409	1745		108	1436	641	334	533		441	643	
V/C Ratio(X)	0.84	0.81		0.39	0.61	0.38	0.81	0.73		0.88	0.44	
Avail Cap(c_a), veh/h	518	1745		144	1436	641	432	533		461	643	
HCMPlatoon Ratio	1.00	1.00	1.00	0.33	0.33	0.33	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	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	51.8	25.9	0.0	58.2	43.0	38.3	53.2	48.7	0.0	51.4	43.8	0.0
Incr Delay (d2), s/veh	9.7	4.3	0.0	2.2	1.9	1.7	9.0	8.5	0.0	16.6	2.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.6	17.7	0.0	0.7	13.6	7.5	4.4	6.2	0.0	6.7	4.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	61.5	30.1	0.0	60.5	44.9	40.0	62.1	57.2	0.0	68.0	46.0	0.0
LnGrp LOS	E	C		E	D	D	E	E		E	D	
Approach Vol, veh/h		1763	A		1154			661	A		672	A
Approach Delay, s/veh		36.3			44.4			59.2			58.6	
Approach LOS		D			D			E			E	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	21.3	24.0	9.8	64.9	17.6	27.7	20.2	54.5				
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0				
Max Green Setting (Gmax), s	16.0	18.0	5.0	57.0	15.0	19.0	18.0	44.0				
Max Q Clear Time (g_c+I1), s	15.2	14.5	3.4	42.6	11.3	10.6	13.7	29.7				
Green Ext Time (p_c), s	0.1	0.8	0.0	8.8	0.3	1.1	0.5	6.0				
<b>Intersection Summary</b>												
HCM6th Ctrl Delay			45.6									
HCM6th LOS			D									
<b>Notes</b>												
User approved pedestrian interval to be less than phase max green.												
Unsignalized Delay for [NBR, EBR, SBR] is excluded from calculations of the approach delay and intersection delay.												

# Timings

## 1: County Line Rd & SH-119

2025 Background AM

09/15/2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	137	781	109	55	1619	366	401	254	50	495	307	520
Future Volume (vph)	137	781	109	55	1619	366	401	254	50	495	307	520
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Free	Prot	NA	Free
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			Free			Free
Detector Phase	7	4	4	3	8	8	5	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Minimum Split (s)	11.0	24.0	24.0	11.0	24.0	24.0	11.0	24.0		11.0	24.0	
Total Split (s)	11.0	62.0	62.0	11.0	62.0	62.0	23.0	24.0		23.0	24.0	
Total Split (%)	9.2%	51.7%	51.7%	9.2%	51.7%	51.7%	19.2%	20.0%		19.2%	20.0%	
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	4.5	4.5		4.5	4.5	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.5	1.5		1.5	1.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0		6.0	6.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	Max		None	Max	
Act Effct Green (s)	5.0	58.2	58.2	5.0	56.0	56.0	16.9	18.0	120.0	17.0	18.1	120.0
Actuated g/C Ratio	0.04	0.48	0.48	0.04	0.47	0.47	0.14	0.15	1.00	0.14	0.15	1.00
v/c Ratio	1.03	0.49	0.14	0.41	1.05	0.42	0.89	0.52	0.03	1.09	0.62	0.35
Control Delay	139.0	22.6	2.4	51.3	78.4	11.1	72.7	50.9	0.0	116.8	53.4	0.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	139.0	22.6	2.4	51.3	78.4	11.1	72.7	50.9	0.0	116.8	53.4	0.6
LOS	F	C	A	D	E	B	E	D	A	F	D	A
Approach Delay		36.0			65.6			59.6			56.4	
Approach LOS		D			E			E			E	

### Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 0 (0%), Referenced to phase 4:EBT and 8:WBT, Start of Green

Natural Cycle: 130

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.09

Intersection Signal Delay: 56.4

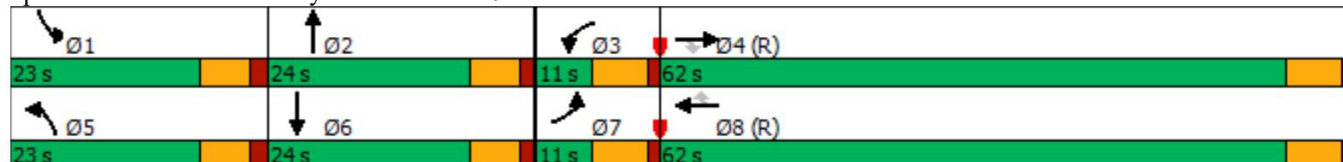
Intersection LOS: E

Intersection Capacity Utilization 90.1%

ICU Level of Service E

Analysis Period (min) 15

Splits and Phases: 1: County Line Rd & SH-119



























# HCM 6th Signalized Intersection Summary

## 1: County Line Rd & SH-119

2025 Background AM

09/15/2022

























												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	137	781	109	55	1619	366	401	254	50	495	307	520
Future Volume (veh/h)	137	781	109	55	1619	366	401	254	50	495	307	520
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	147	840	0	59	1741	394	431	273	0	532	330	0
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	144	1679		124	1658	740	483	533		490	540	
Arrive On Green	0.04	0.47	0.00	0.01	0.15	0.15	0.14	0.15	0.00	0.14	0.15	0.00
Sat Flow, veh/h	3456	3554	1585	3456	3554	1585	3456	3554	1585	3456	3554	1585
Grp Volume(v), veh/h	147	840	0	59	1741	394	431	273	0	532	330	0
Grp Sat Flow(s),veh/h/ln	1728	1777	1585	1728	1777	1585	1728	1777	1585	1728	1777	1585
Q Serve(g_s), s	5.0	19.6	0.0	2.0	56.0	27.5	14.7	8.5	0.0	17.0	10.4	0.0
Cycle Q Clear(g_c), s	5.0	19.6	0.0	2.0	56.0	27.5	14.7	8.5	0.0	17.0	10.4	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	144	1679		124	1658	740	483	533		490	540	
V/C Ratio(X)	1.02	0.50		0.48	1.05	0.53	0.89	0.51		1.09	0.61	
Avail Cap(c_a), veh/h	144	1679		144	1658	740	490	533		490	540	
HCMPlatoon Ratio	1.00	1.00	1.00	0.33	0.33	0.33	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	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	57.5	21.9	0.0	58.2	50.8	38.7	50.7	47.0	0.0	51.5	47.6	0.0
Incr Delay (d2), s/veh	80.6	1.1	0.0	2.8	36.5	2.7	18.3	3.5	0.0	66.2	5.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.8	8.3	0.0	0.9	35.1	12.3	7.6	4.0	0.0	11.8	5.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	138.1	22.9	0.0	61.0	87.2	41.4	69.0	50.4	0.0	117.7	52.7	0.0
LnGrp LOS	F	C		E	F	D	E	D		F	D	
Approach Vol, veh/h		987	A		2194			704	A		862	A
Approach Delay, s/veh		40.1			78.3			61.8			92.8	
Approach LOS		D			E			E			F	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	23.0	24.0	10.3	62.7	22.8	24.2	11.0	62.0				
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0				
Max Green Setting (Gmax), s	17.0	18.0	5.0	56.0	17.0	18.0	5.0	56.0				
Max Q Clear Time (g_c+I1), s	19.0	10.5	4.0	21.6	16.7	12.4	7.0	58.0				
Green Ext Time (p_c), s	0.0	0.9	0.0	7.0	0.1	1.0	0.0	0.0				
<b>Intersection Summary</b>												
HCM6th Ctrl Delay			70.5									
HCM6th LOS			E									
<b>Notes</b>												
User approved pedestrian interval to be less than phase max green.												
Unsignalized Delay for [NBR, EBR, SBR] is excluded from calculations of the approach delay and intersection delay.												

# Timings

## 1: County Line Rd & SH-119

2025 Background PM

09/15/2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	387	1562	304	45	985	534	321	437	71	436	327	224
Future Volume (vph)	387	1562	304	45	985	534	321	437	71	436	327	224
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Free	Prot	NA	Free
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			Free			Free
Detector Phase	7	4	4	3	8	8	5	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Minimum Split (s)	11.0	24.0	24.0	11.0	24.0	24.0	11.0	24.0		11.0	24.0	
Total Split (s)	22.0	63.0	63.0	11.0	52.0	52.0	22.0	24.0		22.0	24.0	
Total Split (%)	18.3%	52.5%	52.5%	9.2%	43.3%	43.3%	18.3%	20.0%		18.3%	20.0%	
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	4.5	4.5		4.5	4.5	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.5	1.5		1.5	1.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0		6.0	6.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	Max		None	Max	
Act Effct Green (s)	15.8	59.2	59.2	5.0	46.2	46.2	15.0	18.0	120.0	16.0	19.0	120.0
Actuated g/C Ratio	0.13	0.49	0.49	0.04	0.38	0.38	0.12	0.15	1.00	0.13	0.16	1.00
v/c Ratio	0.87	0.90	0.34	0.31	0.73	0.63	0.76	0.83	0.05	0.96	0.59	0.14
Control Delay	71.2	37.1	6.2	50.3	46.6	24.5	62.6	64.1	0.1	85.7	52.0	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	71.2	37.1	6.2	50.3	46.6	24.5	62.6	64.1	0.1	85.7	52.0	0.2
LOS	E	D	A	D	D	C	E	E	A	F	D	A
Approach Delay		38.8			39.1			58.0			55.2	
Approach LOS		D			D			E			E	

### Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 0 (0%), Referenced to phase 4:EBT and 8:WBT, Start of Green

Natural Cycle: 100

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.96

Intersection Signal Delay: 44.6

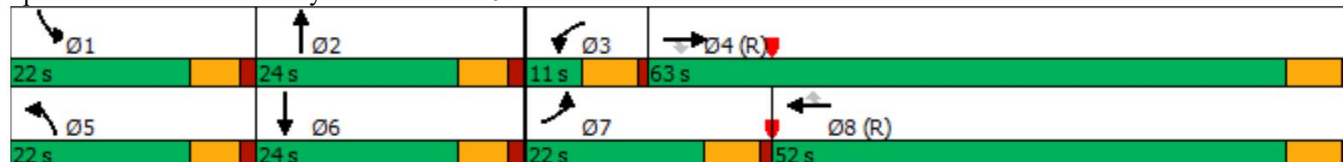
Intersection LOS: D

Intersection Capacity Utilization 91.9%

ICU Level of Service F

Analysis Period (min) 15

Splits and Phases: 1: County Line Rd & SH-119





























# HCM 6th Signalized Intersection Summary

## 1: County Line Rd & SH-119

























2025 Background PM

09/15/2022

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	387	1562	304	45	985	534	321	437	71	436	327	224
Future Volume (veh/h)	387	1562	304	45	985	534	321	437	71	436	327	224
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	391	1578	0	45	995	276	324	441	0	440	330	0
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	445	1721		112	1378	615	385	533		461	611	
Arrive On Green	0.13	0.48	0.00	0.01	0.13	0.13	0.11	0.15	0.00	0.13	0.17	0.00
Sat Flow, veh/h	3456	3554	1585	3456	3554	1585	3456	3554	1585	3456	3554	1585
Grp Volume(v), veh/h	391	1578	0	45	995	276	324	441	0	440	330	0
Grp Sat Flow(s),veh/h/ln	1728	1777	1585	1728	1777	1585	1728	1777	1585	1728	1777	1585
Q Serve(g_s), s	13.3	49.4	0.0	1.6	32.3	19.3	11.0	14.5	0.0	15.2	10.2	0.0
Cycle Q Clear(g_c), s	13.3	49.4	0.0	1.6	32.3	19.3	11.0	14.5	0.0	15.2	10.2	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	445	1721		112	1378	615	385	533		461	611	
V/C Ratio(X)	0.88	0.92		0.40	0.72	0.45	0.84	0.83		0.95	0.54	
Avail Cap(c_a), veh/h	461	1721		144	1378	615	461	533		461	611	
HCMPlatoon Ratio	1.00	1.00	1.00	0.33	0.33	0.33	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	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	51.4	28.7	0.0	58.2	46.1	40.5	52.3	49.5	0.0	51.6	45.4	0.0
Incr Delay (d2), s/veh	17.0	9.3	0.0	2.3	3.3	2.4	11.4	13.7	0.0	30.6	3.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.8	22.5	0.0	0.7	16.0	8.6	5.4	7.4	0.0	8.5	4.8	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	68.4	38.0	0.0	60.5	49.4	42.8	63.7	63.2	0.0	82.3	48.8	0.0
LnGrp LOS	E	D		E	D	D	E	E		F	D	
Approach Vol, veh/h		1969	A		1316			765	A		770	A
Approach Delay, s/veh		44.0			48.4			63.4			67.9	
Approach LOS		D			D			E			E	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	22.0	24.0	9.9	64.1	19.4	26.6	21.5	52.5				
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0				
Max Green Setting (Gmax), s	16.0	18.0	5.0	57.0	16.0	18.0	16.0	46.0				
Max Q Clear Time (g_c+I1), s	17.2	16.5	3.6	51.4	13.0	12.2	15.3	34.3				
Green Ext Time (p_c), s	0.0	0.5	0.0	4.4	0.3	1.0	0.1	6.1				
<b>Intersection Summary</b>												
HCM6th Ctrl Delay			52.1									
HCM6th LOS			D									
<b>Notes</b>												
User approved pedestrian interval to be less than phase max green.												
Unsignalized Delay for [NBR, EBR, SBR] is excluded from calculations of the approach delay and intersection delay.												

Timings  
1: County Line Rd & SH-119

2025 Total AM  
09/15/2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	132	816	207	93	1566	354	545	318	72	527	373	502
Future Volume (vph)	132	816	207	93	1566	354	545	318	72	527	373	502
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Free	Prot	NA	Free
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			Free			Free
Detector Phase	7	4	4	3	8	8	5	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Minimum Split (s)	11.0	24.0	24.0	11.0	24.0	24.0	11.0	24.0		11.0	24.0	
Total Split (s)	11.0	58.0	58.0	13.0	60.0	60.0	25.0	24.0		25.0	24.0	
Total Split (%)	9.2%	48.3%	48.3%	10.8%	50.0%	50.0%	20.8%	20.0%		20.8%	20.0%	
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	4.5	4.5		4.5	4.5	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.5	1.5		1.5	1.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0		6.0	6.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	Max		None	Max	
Act Effct Green (s)	5.0	52.1	52.1	6.9	54.0	54.0	19.0	18.0	120.0	19.0	18.0	120.0
Actuated g/C Ratio	0.04	0.43	0.43	0.06	0.45	0.45	0.16	0.15	1.00	0.16	0.15	1.00
v/c Ratio	0.99	0.57	0.27	0.51	1.06	0.41	1.08	0.65	0.05	1.04	0.76	0.34
Control Delay	131.1	27.4	3.6	49.2	76.1	10.2	106.0	57.7	0.1	99.5	59.0	0.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	131.1	27.4	3.6	49.2	76.1	10.2	106.0	57.7	0.1	99.5	59.0	0.6
LOS	F	C	A	D	E	B	F	E	A	F	E	A
Approach Delay		35.0			63.3			81.4			53.3	
Approach LOS		C			E			F			D	

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 0 (0%), Referenced to phase 4:EBT and 8:WBT, Start of Green

Natural Cycle: 130

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.08

Intersection Signal Delay: 57.9

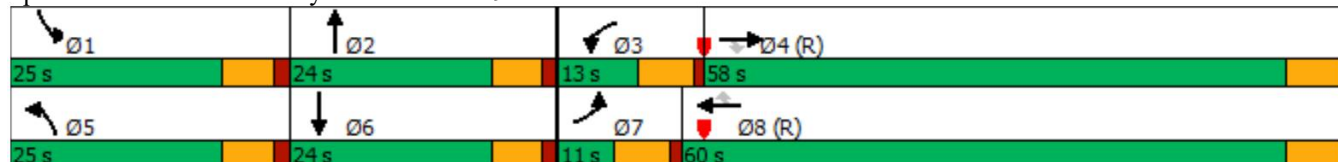
Intersection LOS: E

Intersection Capacity Utilization 93.3%

ICU Level of Service F

Analysis Period (min) 15

Splits and Phases: 1: County Line Rd & SH-119



























# HCM 6th Signalized Intersection Summary

## 1: County Line Rd & SH-119

























2025 Total AM

09/15/2022

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	132	816	207	93	1566	354	545	318	72	527	373	502
Future Volume (veh/h)	132	816	207	93	1566	354	545	318	72	527	373	502
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	142	877	0	100	1684	381	586	342	0	567	401	0
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	144	1590		152	1599	713	547	533		547	533	
Arrive On Green	0.04	0.45	0.00	0.01	0.15	0.15	0.05	0.05	0.00	0.16	0.15	0.00
Sat Flow, veh/h	3456	3554	1585	3456	3554	1585	3456	3554	1585	3456	3554	1585
Grp Volume(v), veh/h	142	877	0	100	1684	381	586	342	0	567	401	0
Grp Sat Flow(s),veh/h/ln	1728	1777	1585	1728	1777	1585	1728	1777	1585	1728	1777	1585
Q Serve(g_s), s	4.9	21.7	0.0	3.5	54.0	26.7	19.0	11.3	0.0	19.0	13.0	0.0
Cycle Q Clear(g_c), s	4.9	21.7	0.0	3.5	54.0	26.7	19.0	11.3	0.0	19.0	13.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	144	1590		152	1599	713	547	533		547	533	
V/C Ratio(X)	0.99	0.55		0.66	1.05	0.53	1.07	0.64		1.04	0.75	
Avail Cap(c_a), veh/h	144	1590		202	1599	713	547	533		547	533	
HCMPlatoon Ratio	1.00	1.00	1.00	0.33	0.33	0.33	0.33	0.33	0.33	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	57.5	24.3	0.0	58.2	51.1	39.5	56.9	53.9	0.0	50.5	48.9	0.0
Incr Delay (d2), s/veh	70.6	1.4	0.0	4.7	37.9	2.9	58.9	5.8	0.0	48.2	9.5	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.6	9.3	0.0	1.6	34.2	11.9	13.3	5.9	0.0	11.8	6.4	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	128.1	25.7	0.0	62.9	89.0	42.3	115.7	59.7	0.0	98.7	58.3	0.0
LnGrp LOS	F	C		E	F	D	F	E		F	E	
Approach Vol, veh/h		1019	A		2165			928	A		968	A
Approach Delay, s/veh		40.0			79.6			95.1			82.0	
Approach LOS		D			E			F			F	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	25.0	24.0	11.3	59.7	25.0	24.0	11.0	60.0				
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0				
Max Green Setting (Gmax), s	19.0	18.0	7.0	52.0	19.0	18.0	5.0	54.0				
Max Q Clear Time (g_c+I1), s	21.0	13.3	5.5	23.7	21.0	15.0	6.9	56.0				
Green Ext Time (p_c), s	0.0	0.9	0.0	7.1	0.0	0.7	0.0	0.0				
<b>Intersection Summary</b>												
HCM6th Ctrl Delay			74.9									
HCM6th LOS			E									
<b>Notes</b>												
User approved pedestrian interval to be less than phase max green.												
Unsignalized Delay for [NBR, EBR, SBR] is excluded from calculations of the approach delay and intersection delay.												

Timings  
1: County Line Rd & SH-119

2025 Total PM  
09/15/2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	377	1584	405	71	960	519	488	547	107	464	375	218
Future Volume (vph)	377	1584	405	71	960	519	488	547	107	464	375	218
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Free	Prot	NA	Free
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			Free			Free
Detector Phase	7	4	4	3	8	8	5	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Minimum Split (s)	11.0	24.0	24.0	11.0	24.0	24.0	11.0	24.0		11.0	24.0	
Total Split (s)	31.0	61.0	61.0	11.0	41.0	41.0	24.0	25.0		23.0	24.0	
Total Split (%)	25.8%	50.8%	50.8%	9.2%	34.2%	34.2%	20.0%	20.8%		19.2%	20.0%	
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	4.5	4.5		4.5	4.5	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.5	1.5		1.5	1.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0		6.0	6.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	Max		None	Max	
Act Effct Green (s)	18.5	57.2	57.2	5.0	41.5	41.5	18.0	19.0	120.0	17.0	18.0	120.0
Actuated g/C Ratio	0.15	0.48	0.48	0.04	0.35	0.35	0.15	0.16	1.00	0.14	0.15	1.00
v/c Ratio	0.72	0.95	0.45	0.50	0.79	0.66	0.96	0.99	0.07	0.97	0.72	0.14
Control Delay	56.1	43.8	7.6	61.6	42.2	23.2	75.5	83.3	0.1	84.4	56.9	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	56.1	43.8	7.6	61.6	42.2	23.2	75.5	83.3	0.1	84.4	56.9	0.2
LOS	E	D	A	E	D	C	E	F	A	F	E	A
Approach Delay		39.5			36.7			72.2			57.3	
Approach LOS		D			D			E			E	

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 0 (0%), Referenced to phase 4:EBT and 8:WBT, Start of Green

Natural Cycle: 110

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.99

Intersection Signal Delay: 48.0

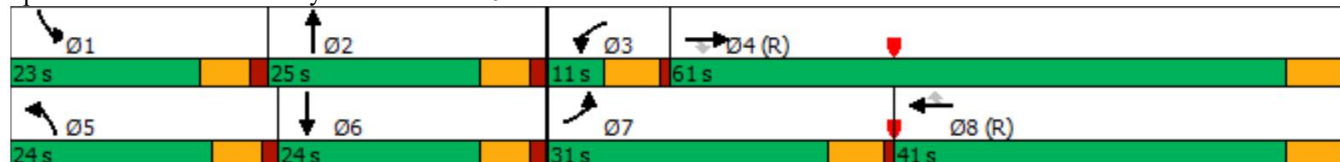
Intersection LOS: D

Intersection Capacity Utilization 96.3%

ICU Level of Service F

Analysis Period (min) 15

Splits and Phases: 1: County Line Rd & SH-119



























# HCM 6th Signalized Intersection Summary

## 1: County Line Rd & SH-119

2025 Total PM

























09/15/2022

																														
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR																		
Lane Configurations																														
Traffic Volume (veh/h)	377	1584	405	71	960	519	488	547	107	464	375	218																		
Future Volume (veh/h)	377	1584	405	71	960	519	488	547	107	464	375	218																		
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0																		
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00																		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00																		
Work Zone On Approach	No			No			No			No																				
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870																		
Adj Flow Rate, veh/h	381	1600	0	72	970	524	493	553	0	469	379	0																		
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99																		
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2																		
Cap, veh/h	458	1642		131	1306	582	518	563		490	533																			
Arrive On Green	0.13	0.46	0.00	0.01	0.12	0.12	0.05	0.05	0.00	0.14	0.15	0.00																		
Sat Flow, veh/h	3456	3554	1585	3456	3554	1585	3456	3554	1585	3456	3554	1585																		
Grp Volume(v), veh/h	381	1600	0	72	970	524	493	553	0	469	379	0																		
Grp Sat Flow(s),veh/h/ln	1728	1777	1585	1728	1777	1585	1728	1777	1585	1728	1777	1585																		
Q Serve(g_s), s	12.9	52.9	0.0	2.5	31.6	39.1	17.1	18.7	0.0	16.2	12.2	0.0																		
Cycle Q Clear(g_c), s	12.9	52.9	0.0	2.5	31.6	39.1	17.1	18.7	0.0	16.2	12.2	0.0																		
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00																		
Lane Grp Cap(c), veh/h	458	1642		131	1306	582	518	563		490	533																			
V/C Ratio(X)	0.83	0.97		0.55	0.74	0.90	0.95	0.98		0.96	0.71																			
Avail Cap(c_a), veh/h	720	1642		144	1306	582	518	563		490	533																			
HCMPlatoon Ratio	1.00	1.00	1.00	0.33	0.33	0.33	0.33	0.33	0.33	1.00	1.00	1.00																		
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00																		
Uniform Delay (d), s/veh	50.7	31.6	0.0	58.2	47.2	50.5	56.6	56.7	0.0	51.1	48.5	0.0																		
Incr Delay (d2), s/veh	4.8	16.9	0.0	3.6	3.9	19.4	27.6	33.9	0.0	30.2	7.8	0.0																		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0																		
%ile BackOfQ(50%),veh/ln	5.9	25.7	0.0	1.2	15.8	19.8	9.9	11.6	0.0	9.0	6.0	0.0																		
Unsig. Movement Delay, s/veh																														
LnGrp Delay(d),s/veh	55.5	48.5	0.0	61.8	51.1	69.9	84.2	90.6	0.0	81.3	56.4	0.0																		
LnGrp LOS	E	D		E	D	E	F	F		F	E																			
Approach Vol, veh/h	1981		A	1566			1046		A	848		A																		
Approach Delay, s/veh	49.8			57.9			87.6			70.2																				
Approach LOS	D			E			F			E																				
Timer - Assigned Phs	1	2	3	4	5	6	7	8																						
Phs Duration (G+Y+Rc), s	23.0	25.0	10.5	61.5	24.0	24.0	21.9	50.1																						
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0																						
Max Green Setting (Gmax), s	17.0	19.0	5.0	55.0	18.0	18.0	25.0	35.0																						
Max Q Clear Time (g_c+I1), s	18.2	20.7	4.5	54.9	19.1	14.2	14.9	41.1																						
Green Ext Time (p_c), s	0.0	0.0	0.0	0.1	0.0	0.8	1.0	0.0																						
<b>Intersection Summary</b>																														
HCM6th Ctrl Delay	62.6																													
HCM6th LOS	E																													
<b>Notes</b>																														
User approved pedestrian interval to be less than phase max green.																														
Unsignalized Delay for [NBR, EBR, SBR] is excluded from calculations of the approach delay and intersection delay.																														

Timings  
1: County Line Rd & SH-119

2025 Total AM - Improved

09/15/2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	132	816	207	93	1566	354	545	318	72	527	373	502
Future Volume (vph)	132	816	207	93	1566	354	545	318	72	527	373	502
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Free	Prot	NA	Free
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			Free			Free
Detector Phase	7	4	4	3	8	8	5	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Minimum Split (s)	11.0	24.0	24.0	11.0	24.0	24.0	11.0	24.0		11.0	24.0	
Total Split (s)	13.0	53.0	53.0	13.0	53.0	53.0	30.0	25.0		29.0	24.0	
Total Split (%)	10.8%	44.2%	44.2%	10.8%	44.2%	44.2%	25.0%	20.8%		24.2%	20.0%	
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	4.5	4.5		4.5	4.5	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.5	1.5		1.5	1.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0		6.0	6.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	Max		None	Max	
Act Effct Green (s)	7.0	47.1	47.1	6.9	47.0	47.0	23.2	19.6	120.0	22.4	18.8	120.0
Actuated g/C Ratio	0.06	0.39	0.39	0.06	0.39	0.39	0.19	0.16	1.00	0.19	0.16	1.00
v/c Ratio	0.71	0.44	0.29	0.51	0.85	0.45	0.88	0.59	0.05	0.89	0.72	0.34
Control Delay	75.1	27.7	4.1	49.2	44.5	10.8	59.2	54.8	0.1	64.5	56.8	0.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	75.1	27.7	4.1	49.2	44.5	10.8	59.2	54.8	0.1	64.5	56.8	0.6
LOS	E	C	A	D	D	B	E	D	A	E	E	A
Approach Delay		28.9			38.8			53.2			39.6	
Approach LOS		C			D			D			D	

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 0 (0%), Referenced to phase 4:EBT and 8:WBT, Start of Green

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.89

Intersection Signal Delay: 39.3

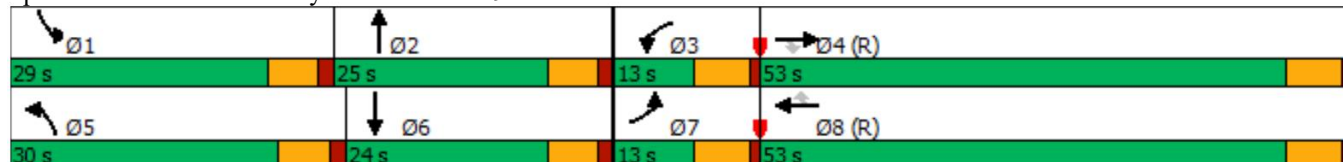
Intersection LOS: D

Intersection Capacity Utilization 80.3%

ICU Level of Service D

Analysis Period (min) 15

Splits and Phases: 1: County Line Rd & SH-119




























# HCM 6th Signalized Intersection Summary

## 1: County Line Rd & SH-119

2025 Total AM - Improved

09/15/2022

























																														
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR																		
Lane Configurations																														
Traffic Volume (veh/h)	132	816	207	93	1566	354	545	318	72	527	373	502																		
Future Volume (veh/h)	132	816	207	93	1566	354	545	318	72	527	373	502																		
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0																		
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00																		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00																		
Work Zone On Approach	No			No			No			No																				
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870																		
Adj FlowRate, veh/h	142	877	0	100	1684	381	586	342	0	567	401	0																		
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93																		
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2																		
Cap, veh/h	196	2127		152	2063	640	653	563		626	534																			
Arrive On Green	0.06	0.42	0.00	0.01	0.13	0.13	0.06	0.05	0.00	0.18	0.15	0.00																		
Sat Flow, veh/h	3456	5106	1585	3456	5106	1585	3456	3554	1585	3456	3554	1585																		
Grp Volume(v), veh/h	142	877	0	100	1684	381	586	342	0	567	401	0																		
Grp Sat Flow(s),veh/h/ln	1728	1702	1585	1728	1702	1585	1728	1777	1585	1728	1777	1585																		
Q Serve(g_s), s	4.9	14.5	0.0	3.5	38.5	27.2	20.2	11.3	0.0	19.3	13.0	0.0																		
Cycle Q Clear(g_c), s	4.9	14.5	0.0	3.5	38.5	27.2	20.2	11.3	0.0	19.3	13.0	0.0																		
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00																		
Lane Grp Cap(c), veh/h	196	2127		152	2063	640	653	563		626	534																			
V/C Ratio(X)	0.73	0.41		0.66	0.82	0.60	0.90	0.61		0.91	0.75																			
Avail Cap(c_a), veh/h	202	2127		202	2063	640	691	563		662	534																			
HCMPlatoon Ratio	1.00	1.00	1.00	0.33	0.33	0.33	0.33	0.33	0.33	1.00	1.00	1.00																		
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00																		
Uniform Delay (d), s/veh	55.7	24.7	0.0	58.2	47.7	42.8	55.1	53.2	0.0	48.1	48.8	0.0																		
Incr Delay (d2), s/veh	11.9	0.6	0.0	4.7	3.7	4.0	14.0	4.8	0.0	15.7	9.4	0.0																		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0																		
%ile BackOfQ(50%),veh/ln	2.4	6.0	0.0	1.6	18.3	12.3	10.7	5.8	0.0	9.6	6.4	0.0																		
Unsig. Movement Delay, s/veh																														
LnGrp Delay(d),s/veh	67.6	25.3	0.0	62.9	51.4	46.8	69.1	58.0	0.0	63.8	58.2	0.0																		
LnGrp LOS	E	C		E	D	D	E	E		E	E																			
Approach Vol, veh/h	1019		A	2165			928		A	968		A																		
Approach Delay, s/veh	31.2			51.1			65.0			61.5																				
Approach LOS	C			D			E			E																				
Timer - Assigned Phs	1	2	3	4	5	6	7	8																						
Phs Duration (G+Y+Rc), s	27.7	25.0	11.3	56.0	28.7	24.0	12.8	54.5																						
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0																						
Max Green Setting (Gmax), s	23.0	19.0	7.0	47.0	24.0	18.0	7.0	47.0																						
Max Q Clear Time (g_c+I1), s	21.3	13.3	5.5	16.5	22.2	15.0	6.9	40.5																						
Green Ext Time (p_c), s	0.4	1.0	0.0	7.1	0.5	0.7	0.0	5.5																						
<b>Intersection Summary</b>																														
HCM6th Ctrl Delay	51.6																													
HCM6th LOS	D																													
<b>Notes</b>																														
User approved pedestrian interval to be less than phase max green.																														
Unsignalized Delay for [NBR, EBR, SBR] is excluded from calculations of the approach delay and intersection delay.																														

# Timings

## 1: County Line Rd & SH-119

2025 Total PM - Improved

09/15/2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	377	1584	405	71	960	519	488	547	107	464	375	218
Future Volume (vph)	377	1584	405	71	960	519	488	547	107	464	375	218
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Free	Prot	NA	Free
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			Free			Free
Detector Phase	7	4	4	3	8	8	5	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Minimum Split (s)	11.0	24.0	24.0	11.0	24.0	24.0	11.0	24.0		11.0	24.0	
Total Split (s)	24.0	51.0	51.0	11.0	38.0	38.0	30.0	30.0		28.0	28.0	
Total Split (%)	20.0%	42.5%	42.5%	9.2%	31.7%	31.7%	25.0%	25.0%		23.3%	23.3%	
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	4.5	4.5		4.5	4.5	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.5	1.5		1.5	1.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0		6.0	6.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	Max		None	Max	
Act Effct Green (s)	16.9	47.2	47.2	5.0	33.1	33.1	21.5	25.8	120.0	20.2	24.5	120.0
Actuated g/C Ratio	0.14	0.39	0.39	0.04	0.28	0.28	0.18	0.22	1.00	0.17	0.20	1.00
v/c Ratio	0.79	0.80	0.48	0.50	0.69	0.69	0.80	0.73	0.07	0.81	0.52	0.14
Control Delay	62.3	36.6	6.1	57.1	40.8	22.4	51.0	51.8	0.1	59.8	46.3	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	62.3	36.6	6.1	57.1	40.8	22.4	51.0	51.8	0.1	59.8	46.3	0.2
LOS	E	D	A	E	D	C	D	D	A	E	D	A
Approach Delay		35.5			35.4			46.6			42.7	
Approach LOS		D			D			D			D	

### Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 0 (0%), Referenced to phase 4:EBT and 8:WBT, Start of Green

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.81

Intersection Signal Delay: 38.8

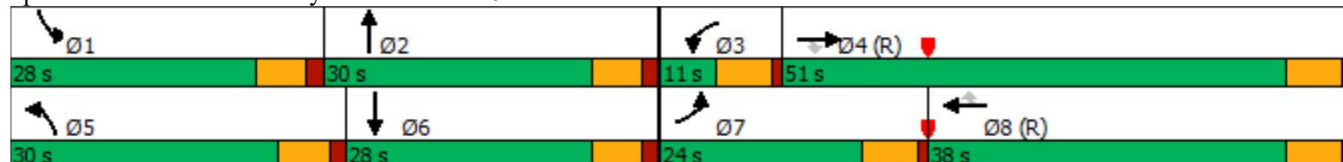
Intersection LOS: D

Intersection Capacity Utilization 83.1%

ICU Level of Service E

Analysis Period (min) 15

Splits and Phases: 1: County Line Rd & SH-119



























# HCM 6th Signalized Intersection Summary

## 1: County Line Rd & SH-119

2025 Total PM - Improved

























09/15/2022

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	377	1584	405	71	960	519	488	547	107	464	375	218
Future Volume (veh/h)	377	1584	405	71	960	519	488	547	107	464	375	218
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	381	1600	0	72	970	261	493	553	0	469	379	0
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	443	2077		131	1615	501	572	711		537	674	
Arrive On Green	0.13	0.41	0.00	0.01	0.10	0.10	0.05	0.07	0.00	0.16	0.19	0.00
Sat Flow, veh/h	3456	5106	1585	3456	5106	1585	3456	3554	1585	3456	3554	1585
Grp Volume(v), veh/h	381	1600	0	72	970	261	493	553	0	469	379	0
Grp Sat Flow(s),veh/h/ln	1728	1702	1585	1728	1702	1585	1728	1777	1585	1728	1777	1585
Q Serve(g_s), s	13.0	32.5	0.0	2.5	21.8	18.7	17.0	18.4	0.0	15.9	11.6	0.0
Cycle Q Clear(g_c), s	13.0	32.5	0.0	2.5	21.8	18.7	17.0	18.4	0.0	15.9	11.6	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	443	2077		131	1615	501	572	711		537	674	
V/C Ratio(X)	0.86	0.77		0.55	0.60	0.52	0.86	0.78		0.87	0.56	
Avail Cap(c_a), veh/h	518	2077		144	1615	501	691	711		634	674	
HCMPlatoon Ratio	1.00	1.00	1.00	0.33	0.33	0.33	0.33	0.33	0.33	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	51.2	30.7	0.0	58.2	46.5	45.1	55.4	53.4	0.0	49.5	44.1	0.0
Incr Delay (d2), s/veh	12.1	2.8	0.0	3.6	1.7	3.8	9.4	8.2	0.0	11.5	3.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.4	13.7	0.0	1.2	10.2	8.5	8.7	9.6	0.0	7.7	5.4	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	63.4	33.6	0.0	61.8	48.1	48.9	64.7	61.6	0.0	61.0	47.5	0.0
LnGrp LOS	E	C		E	D	D	E	E		E	D	
Approach Vol, veh/h		1981	A		1303			1046	A		848	A
Approach Delay, s/veh		39.3			49.1			63.1			54.9	
Approach LOS		D			D			E			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	24.6	30.0	10.5	54.8	25.9	28.8	21.4	44.0				
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0				
Max Green Setting (Gmax), s	22.0	24.0	5.0	45.0	24.0	22.0	18.0	32.0				
Max Q Clear Time (g_c+I1), s	17.9	20.4	4.5	34.5	19.0	13.6	15.0	23.8				
Green Ext Time (p_c), s	0.7	1.2	0.0	7.5	0.9	1.5	0.4	4.6				
<b>Intersection Summary</b>												
HCM6th Ctrl Delay			49.1									
HCM6th LOS			D									
<b>Notes</b>												
User approved pedestrian interval to be less than phase max green.												
Unsignalized Delay for [NBR, EBR, SBR] is excluded from calculations of the approach delay and intersection delay.												

Timings  
1: County Line Rd & SH-119

2045 Background AM

09/15/2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	199	1129	155	82	2373	538	560	372	74	715	444	768
Future Volume (vph)	199	1129	155	82	2373	538	560	372	74	715	444	768
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Free	Prot	NA	Free
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			Free			Free
Detector Phase	7	4	4	3	8	8	5	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Minimum Split (s)	11.0	24.0	24.0	11.0	24.0	24.0	11.0	24.0		11.0	24.0	
Total Split (s)	11.0	57.0	57.0	12.0	58.0	58.0	27.0	24.0		27.0	24.0	
Total Split (%)	9.2%	47.5%	47.5%	10.0%	48.3%	48.3%	22.5%	20.0%		22.5%	20.0%	
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	4.5	4.5		4.5	4.5	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.5	1.5		1.5	1.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0		6.0	6.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	Max		None	Max	
Act Effct Green (s)	5.0	51.0	51.0	6.0	52.0	52.0	21.0	18.0	120.0	21.0	18.0	120.0
Actuated g/C Ratio	0.04	0.42	0.42	0.05	0.43	0.43	0.18	0.15	1.00	0.18	0.15	1.00
v/c Ratio	1.50	0.56	0.22	0.51	1.16	0.59	1.00	0.75	0.05	1.28	0.90	0.52
Control Delay	295.4	27.3	3.9	50.4	116.0	14.6	80.2	64.2	0.1	179.6	71.3	1.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	295.4	27.3	3.9	50.4	116.0	14.6	80.2	64.2	0.1	179.6	71.3	1.2
LOS	F	C	A	D	F	B	F	E	A	F	E	A
Approach Delay		60.8			96.0			68.3			83.6	
Approach LOS		E			F			E			F	

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 0 (0%), Referenced to phase 4:EBT and 8:WBT, Start of Green

Natural Cycle: 150

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.50

Intersection Signal Delay: 82.0









Intersection LOS: F

Intersection Capacity Utilization 102.2%

ICU Level of Service G

Analysis Period (min) 15

Splits and Phases: 1: County Line Rd & SH-119

























			
Ø1	Ø2	Ø3	Ø4 (R)
27 s	24 s	12 s	57 s
			
Ø5	Ø6	Ø7	Ø8 (R)
27 s	24 s	11 s	58 s

# HCM 6th Signalized Intersection Summary

## 1: County Line Rd & SH-119

2045 Background AM

09/15/2022

























																														
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR																		
Lane Configurations																														
Traffic Volume (veh/h)	199	1129	155	82	2373	538	560	372	74	715	444	768																		
Future Volume (veh/h)	199	1129	155	82	2373	538	560	372	74	715	444	768																		
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0																		
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00																		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00																		
Work Zone On Approach	No			No			No			No																				
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870																		
Adj Flow Rate, veh/h	214	1214	0	88	2552	578	602	400	0	769	477	0																		
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93																		
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2																		
Cap, veh/h	144	2222		138	2213	687	605	533		605	533																			
Arrive On Green	0.04	0.44	0.00	0.01	0.14	0.14	0.06	0.05	0.00	0.17	0.15	0.00																		
Sat Flow, veh/h	3456	5106	1585	3456	5106	1585	3456	3554	1585	3456	3554	1585																		
Grp Volume(v), veh/h	214	1214	0	88	2552	578	602	400	0	769	477	0																		
Grp Sat Flow(s),veh/h/ln	1728	1702	1585	1728	1702	1585	1728	1777	1585	1728	1777	1585																		
Q Serve(g_s), s	5.0	21.1	0.0	3.0	52.0	42.6	20.9	13.3	0.0	21.0	15.8	0.0																		
Cycle Q Clear(g_c), s	5.0	21.1	0.0	3.0	52.0	42.6	20.9	13.3	0.0	21.0	15.8	0.0																		
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00																		
Lane Grp Cap(c), veh/h	144	2222		138	2213	687	605	533		605	533																			
V/C Ratio(X)	1.49	0.55		0.64	1.15	0.84	1.00	0.75		1.27	0.89																			
Avail Cap(c_a), veh/h	144	2222		173	2213	687	605	533		605	533																			
HCMPlatoon Ratio	1.00	1.00	1.00	0.33	0.33	0.33	0.33	0.33	0.33	1.00	1.00	1.00																		
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	0.89	0.89	0.00	1.00	1.00	0.00																		
Uniform Delay (d), s/veh	57.5	25.1	0.0	58.3	51.4	47.4	56.5	54.8	0.0	49.5	50.1	0.0																		
Incr Delay (d2), s/veh	252.0	1.0	0.0	5.1	74.7	11.9	33.3	8.4	0.0	134.9	20.2	0.0																		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0																		
%ile BackOfQ(50%),veh/ln	7.2	8.7	0.0	1.5	39.1	20.4	12.5	7.0	0.0	20.3	8.5	0.0																		
Unsig. Movement Delay, s/veh																														
LnGrp Delay(d),s/veh	309.5	26.1	0.0	63.5	126.1	59.3	89.8	63.2	0.0	184.4	70.2	0.0																		
LnGrp LOS	F	C		E	F	E	F	E		F	E																			
Approach Vol, veh/h	1428		A	3218			1002		A	1246		A																		
Approach Delay, s/veh	68.6			112.4			79.2			140.7																				
Approach LOS	E			F			E			F																				
Timer - Assigned Phs	1	2	3	4	5	6	7	8																						
Phs Duration (G+Y+Rc), s	27.0	24.0	10.8	58.2	27.0	24.0	11.0	58.0																						
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0																						
Max Green Setting (Gmax), s	21.0	18.0	6.0	51.0	21.0	18.0	5.0	52.0																						
Max Q Clear Time (g_c+I1), s	23.0	15.3	5.0	23.1	22.9	17.8	7.0	54.0																						
Green Ext Time (p_c), s	0.0	0.7	0.0	10.4	0.0	0.1	0.0	0.0																						
<b>Intersection Summary</b>																														
HCM6th Ctrl Delay	103.6																													
HCM6th LOS	F																													
<b>Notes</b>																														
User approved pedestrian interval to be less than phase max green.																														
Unsignalized Delay for [NBR, EBR, SBR] is excluded from calculations of the approach delay and intersection delay.																														

# Timings

## 1: County Line Rd & SH-119

2045 Background PM

09/15/2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	563	2287	431	66	1428	782	460	635	106	633	473	330
Future Volume (vph)	563	2287	431	66	1428	782	460	635	106	633	473	330
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Free	Prot	NA	Free
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			Free			Free
Detector Phase	7	4	4	3	8	8	5	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Minimum Split (s)	11.0	24.0	24.0	11.0	24.0	24.0	11.0	24.0		11.0	24.0	
Total Split (s)	30.0	56.0	56.0	15.0	41.0	41.0	25.0	24.0		25.0	24.0	
Total Split (%)	25.0%	46.7%	46.7%	12.5%	34.2%	34.2%	20.8%	20.0%		20.8%	20.0%	
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	4.5	4.5		4.5	4.5	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.5	1.5		1.5	1.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0		6.0	6.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	Max		None	Max	
Act Effct Green (s)	22.9	53.8	53.8	7.6	36.1	36.1	18.6	18.0	120.0	19.0	18.4	120.0
Actuated g/C Ratio	0.19	0.45	0.45	0.06	0.30	0.30	0.16	0.15	1.00	0.16	0.15	1.00
v/c Ratio	0.87	1.01	0.50	0.31	0.94	1.06	0.88	1.21	0.07	1.18	0.88	0.21
Control Delay	61.7	56.2	10.1	48.0	54.6	77.9	53.6	147.1	0.1	141.7	68.4	0.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	61.7	56.2	10.1	48.0	54.6	77.9	53.6	147.1	0.1	141.7	68.4	0.3
LOS	E	E	B	D	D	E	D	F	A	F	E	A
Approach Delay		51.1			62.4			98.3			85.1	
Approach LOS		D			E			F			F	

### Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 0 (0%), Referenced to phase 4:EBT and 8:WBT, Start of Green

Natural Cycle: 150

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.21

Intersection Signal Delay: 67.1

Intersection LOS: E

Intersection Capacity Utilization 104.0%

ICU Level of Service G

Analysis Period (min) 15

Splits and Phases: 1: County Line Rd & SH-119




























# HCM 6th Signalized Intersection Summary

## 1: County Line Rd & SH-119

























2045 Background PM

09/15/2022

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	563	2287	431	66	1428	782	460	635	106	633	473	330
Future Volume (veh/h)	563	2287	431	66	1428	782	460	635	106	633	473	330
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	569	2310	0	67	1442	396	465	641	0	639	478	0
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	633	2321		129	1576	489	526	533		547	555	
Arrive On Green	0.18	0.45	0.00	0.01	0.10	0.10	0.05	0.05	0.00	0.16	0.16	0.00
Sat Flow, veh/h	3456	5106	1585	3456	5106	1585	3456	3554	1585	3456	3554	1585
Grp Volume(v), veh/h	569	2310	0	67	1442	396	465	641	0	639	478	0
Grp Sat Flow(s),veh/h/ln	1728	1702	1585	1728	1702	1585	1728	1777	1585	1728	1777	1585
Q Serve(g_s), s	19.3	54.1	0.0	2.3	33.6	29.3	16.0	18.0	0.0	19.0	15.7	0.0
Cycle Q Clear(g_c), s	19.3	54.1	0.0	2.3	33.6	29.3	16.0	18.0	0.0	19.0	15.7	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	633	2321		129	1576	489	526	533		547	555	
V/C Ratio(X)	0.90	1.00		0.52	0.92	0.81	0.88	1.20		1.17	0.86	
Avail Cap(c_a), veh/h	691	2321		259	1576	489	547	533		547	555	
HCMPlatoon Ratio	1.00	1.00	1.00	0.33	0.33	0.33	0.33	0.33	0.33	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	0.79	0.79	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	47.9	32.6	0.0	58.2	52.3	50.4	55.9	57.0	0.0	50.5	49.4	0.0
Incr Delay (d2), s/veh	14.0	17.6	0.0	3.2	9.8	13.5	12.8	104.9	0.0	93.9	16.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.5	25.3	0.0	1.1	16.8	14.3	8.4	16.4	0.0	15.3	8.2	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	62.0	50.3	0.0	61.4	62.1	64.0	68.7	161.9	0.0	144.4	65.3	0.0
LnGrp LOS	E	D		E	E	E	E	F		F	E	
Approach Vol, veh/h	2879		A	1905		1106		A	1117		A	
Approach Delay, s/veh	52.6			62.5		122.7			110.6			
Approach LOS	D			E		F			F			
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	25.0	24.0	10.5	60.5	24.2	24.8	28.0	43.0				
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0				
Max Green Setting (Gmax), s	19.0	18.0	9.0	50.0	19.0	18.0	24.0	35.0				
Max Q Clear Time (g_c+I1), s	21.0	20.0	4.3	56.1	18.0	17.7	21.3	35.6				
Green Ext Time (p_c), s	0.0	0.0	0.1	0.0	0.2	0.1	0.6	0.0				
Intersection Summary												
HCM6th Ctrl Delay	75.6											
HCM6th LOS	E											
Notes												
User approved pedestrian interval to be less than phase max green.												
Unsignalized Delay for [NBR, EBR, SBR] is excluded from calculations of the approach delay and intersection delay.												

Timings  
1: County Line Rd & SH-119

2045 Total AM  
09/15/2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	194	1164	253	120	2320	526	704	436	96	747	510	750
Future Volume (vph)	194	1164	253	120	2320	526	704	436	96	747	510	750
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Free	Prot	NA	Free
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			Free			Free
Detector Phase	7	4	4	3	8	8	5	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Minimum Split (s)	11.0	24.0	24.0	11.0	24.0	24.0	11.0	24.0		11.0	24.0	
Total Split (s)	11.0	54.0	54.0	14.0	57.0	57.0	27.0	24.0		28.0	25.0	
Total Split (%)	9.2%	45.0%	45.0%	11.7%	47.5%	47.5%	22.5%	20.0%		23.3%	20.8%	
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	4.5	4.5		4.5	4.5	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.5	1.5		1.5	1.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0		6.0	6.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	Max		None	Max	
Act Effct Green (s)	5.0	48.2	48.2	7.8	51.0	51.0	21.0	18.0	120.0	22.0	19.0	120.0
Actuated g/C Ratio	0.04	0.40	0.40	0.06	0.42	0.42	0.18	0.15	1.00	0.18	0.16	1.00
v/c Ratio	1.46	0.61	0.34	0.58	1.15	0.58	1.26	0.88	0.07	1.28	0.98	0.51
Control Delay	281.8	30.2	4.0	47.4	111.4	13.0	167.5	71.5	0.1	176.8	83.6	1.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	281.8	30.2	4.0	47.4	111.4	13.0	167.5	71.5	0.1	176.8	83.6	1.2
LOS	F	C	A	D	F	B	F	E	A	F	F	A
Approach Delay		56.4			91.4			120.6			87.5	
Approach LOS		E			F			F			F	

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 0 (0%), Referenced to phase 4:EBT and 8:WBT, Start of Green

Natural Cycle: 150

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.46

Intersection Signal Delay: 87.8

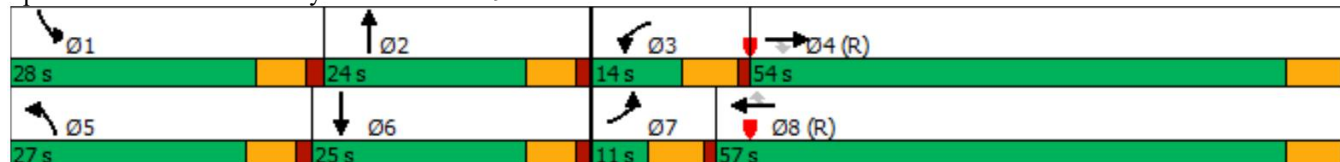
Intersection LOS: F

Intersection Capacity Utilization 104.5%

ICU Level of Service G

Analysis Period (min) 15

Splits and Phases: 1: County Line Rd & SH-119



























# HCM 6th Signalized Intersection Summary

## 1: County Line Rd & SH-119

2045 Total AM

























09/15/2022

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	194	1164	253	120	2320	526	704	436	96	747	510	750
Future Volume (veh/h)	194	1164	253	120	2320	526	704	436	96	747	510	750
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj FlowRate, veh/h	209	1252	0	129	2495	566	757	469	0	803	548	0
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	144	2110		185	2170	674	605	533		634	563	
Arrive On Green	0.04	0.41	0.00	0.02	0.14	0.14	0.06	0.05	0.00	0.18	0.16	0.00
Sat Flow, veh/h	3456	5106	1585	3456	5106	1585	3456	3554	1585	3456	3554	1585
Grp Volume(v), veh/h	209	1252	0	129	2495	566	757	469	0	803	548	0
Grp Sat Flow(s),veh/h/ln	1728	1702	1585	1728	1702	1585	1728	1777	1585	1728	1777	1585
Q Serve(g_s), s	5.0	22.9	0.0	4.5	51.0	41.8	21.0	15.7	0.0	22.0	18.4	0.0
Cycle Q Clear(g_c), s	5.0	22.9	0.0	4.5	51.0	41.8	21.0	15.7	0.0	22.0	18.4	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	144	2110		185	2170	674	605	533		634	563	
V/C Ratio(X)	1.45	0.59		0.70	1.15	0.84	1.25	0.88		1.27	0.97	
Avail Cap(c_a), veh/h	144	2110		230	2170	674	605	533		634	563	
HCMPlatoon Ratio	1.00	1.00	1.00	0.33	0.33	0.33	0.33	0.33	0.33	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	57.5	27.4	0.0	58.0	51.6	47.6	56.5	56.0	0.0	49.0	50.3	0.0
Incr Delay (d2), s/veh	237.6	1.2	0.0	6.7	73.2	12.0	126.5	18.4	0.0	132.6	32.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.9	9.5	0.0	2.2	38.0	20.0	20.4	8.9	0.0	21.1	10.7	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	295.1	28.6	0.0	64.6	124.8	59.6	183.1	74.4	0.0	181.6	82.3	0.0
LnGrp LOS	F	C		E	F	E	F	E		F	F	
Approach Vol, veh/h	1461		A	3190				1226	A	1351		A
Approach Delay, s/veh	66.7			110.8				141.5		141.3		
Approach LOS	E			F				F		F		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	28.0	24.0	12.4	55.6	27.0	25.0	11.0	57.0				
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0				
Max Green Setting (Gmax), s	22.0	18.0	8.0	48.0	21.0	19.0	5.0	51.0				
Max Q Clear Time (g_c+I1), s	24.0	17.7	6.5	24.9	23.0	20.4	7.0	53.0				
Green Ext Time (p_c), s	0.0	0.1	0.1	9.9	0.0	0.0	0.0	0.0				
Intersection Summary												
HCM6th Ctrl Delay	112.8											
HCM6th LOS	F											
Notes												
User approved pedestrian interval to be less than phase max green.												
Unsignalized Delay for [NBR, EBR, SBR] is excluded from calculations of the approach delay and intersection delay.												

# Timings

## 1: County Line Rd & SH-119

2045 Total PM  
09/15/2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	553	2309	532	92	1403	767	627	745	142	661	521	324
Future Volume (vph)	553	2309	532	92	1403	767	627	745	142	661	521	324
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Free	Prot	NA	Free
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			Free			Free
Detector Phase	7	4	4	3	8	8	5	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Minimum Split (s)	11.0	24.0	24.0	11.0	24.0	24.0	11.0	24.0		11.0	24.0	
Total Split (s)	25.0	55.0	55.0	11.0	41.0	41.0	29.0	28.0		26.0	25.0	
Total Split (%)	20.8%	45.8%	45.8%	9.2%	34.2%	34.2%	24.2%	23.3%		21.7%	20.8%	
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	4.5	4.5		4.5	4.5	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.5	1.5		1.5	1.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0		6.0	6.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	Max		None	Max	
Act Effct Green (s)	19.0	49.0	49.0	5.0	35.0	35.0	23.0	22.0	120.0	20.0	19.0	120.0
Actuated g/C Ratio	0.16	0.41	0.41	0.04	0.29	0.29	0.19	0.18	1.00	0.17	0.16	1.00
v/c Ratio	1.03	1.12	0.63	0.65	0.96	1.02	0.96	1.16	0.09	1.17	0.94	0.21
Control Delay	95.8	96.5	12.7	63.2	56.2	63.5	64.3	128.1	0.1	137.3	75.9	0.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	95.8	96.5	12.7	63.2	56.2	63.5	64.3	128.1	0.1	137.3	75.9	0.3
LOS	F	F	B	E	E	E	E	F	A	F	E	A
Approach Delay		83.3			59.0			89.7			86.6	
Approach LOS		F			E			F			F	

### Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 0 (0%), Referenced to phase 4:EBT and 8:WBT, Start of Green

Natural Cycle: 150

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.17

Intersection Signal Delay: 78.6

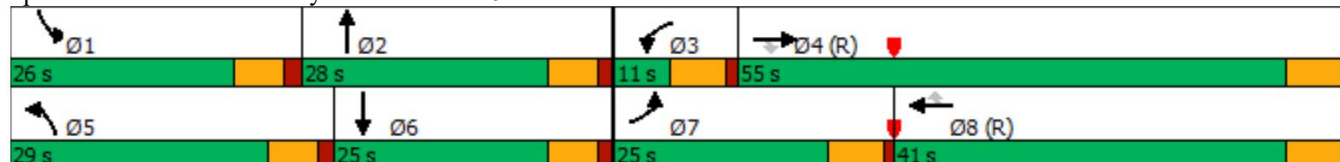
Intersection LOS: E

Intersection Capacity Utilization 108.2%

ICU Level of Service G

Analysis Period (min) 15

Splits and Phases: 1: County Line Rd & SH-119


























# HCM 6th Signalized Intersection Summary

## 1: County Line Rd & SH-119

2045 Total PM

























09/15/2022

																												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR																
Lane Configurations																												
Traffic Volume (veh/h)	553	2309	532	92	1403	767	627	745	142	661	521	324																
Future Volume (veh/h)	553	2309	532	92	1403	767	627	745	142	661	521	324																
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0																
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00																
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00																
Work Zone On Approach	No			No			No			No																		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870																
Adj Flow Rate, veh/h	559	2332	0	93	1417	512	633	753	0	668	526	0																
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99																
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2																
Cap, veh/h	547	2086		143	1489	462	662	652		576	563																	
Arrive On Green	0.16	0.41	0.00	0.01	0.10	0.10	0.06	0.06	0.00	0.17	0.16	0.00																
Sat Flow, veh/h	3456	5106	1585	3456	5106	1585	3456	3554	1585	3456	3554	1585																
Grp Volume(v), veh/h	559	2332	0	93	1417	512	633	753	0	668	526	0																
Grp Sat Flow(s),veh/h/ln	1728	1702	1585	1728	1702	1585	1728	1777	1585	1728	1777	1585																
Q Serve(g_s), s	19.0	49.0	0.0	3.2	33.1	35.0	21.9	22.0	0.0	20.0	17.5	0.0																
Cycle Q Clear(g_c), s	19.0	49.0	0.0	3.2	33.1	35.0	21.9	22.0	0.0	20.0	17.5	0.0																
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00																
Lane Grp Cap(c), veh/h	547	2086		143	1489	462	662	652		576	563																	
V/C Ratio(X)	1.02	1.12		0.65	0.95	1.11	0.96	1.16		1.16	0.93																	
Avail Cap(c_a), veh/h	547	2086		144	1489	462	662	652		576	563																	
HCMPlatoon Ratio	1.00	1.00	1.00	0.33	0.33	0.33	0.33	0.33	0.33	1.00	1.00	1.00																
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00																
Uniform Delay (d), s/veh	50.5	35.5	0.0	58.3	53.4	54.2	55.7	56.4	0.0	50.0	49.9	0.0																
Incr Delay (d2), s/veh	44.1	60.3	0.0	9.7	14.3	74.4	24.5	86.7	0.0	90.0	24.8	0.0																
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0																
%ile BackOfQ(50%),veh/ln	11.5	31.4	0.0	1.6	17.1	24.5	12.4	18.4	0.0	15.8	9.7	0.0																
Unsig. Movement Delay, s/veh																												
LnGrp Delay(d),s/veh	94.6	95.8	0.0	68.0	67.7	128.7	80.2	143.0	0.0	140.0	74.7	0.0																
LnGrp LOS	F	F		E	E	F	F	F		F	E																	
Approach Vol, veh/h	2891		A	2022		1386		A	1194		A																	
Approach Delay, s/veh	95.5			83.1		114.3			111.3																			
Approach LOS	F			F		F			F																			
Timer - Assigned Phs	1	2	3	4	5	6	7	8																				
Phs Duration (G+Y+Rc), s	26.0	28.0	11.0	55.0	29.0	25.0	25.0	41.0																				
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0																				
Max Green Setting (Gmax), s	20.0	22.0	5.0	49.0	23.0	19.0	19.0	35.0																				
Max Q Clear Time (g_c+I1), s	22.0	24.0	5.2	51.0	23.9	19.5	21.0	37.0																				
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0																				
<b>Intersection Summary</b>																												
HCM6th Ctrl Delay	98.2																											
HCM6th LOS	F																											
<b>Notes</b>																												
User approved pedestrian interval to be less than phase max green.																												
Unsignalized Delay for [NBR, EBR, SBR] is excluded from calculations of the approach delay and intersection delay.																												

Timings  
1: County Line Rd & SH-119

2045 Total AM - Improved

09/15/2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	194	1164	253	120	2320	526	704	436	96	747	510	750
Future Volume (vph)	194	1164	253	120	2320	526	704	436	96	747	510	750
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Free	Prot	NA	Free
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			Free			Free
Detector Phase	7	4	4	3	8	8	5	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Minimum Split (s)	11.0	24.0	24.0	11.0	24.0	24.0	11.0	24.0		11.0	24.0	
Total Split (s)	15.0	77.0	77.0	16.0	78.0	78.0	28.0	26.0		31.0	29.0	
Total Split (%)	10.0%	51.3%	51.3%	10.7%	52.0%	52.0%	18.7%	17.3%		20.7%	19.3%	
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	4.5	4.5		4.5	4.5	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.5	1.5		1.5	1.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0		6.0	6.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	Max		None	Max	
Act Effct Green (s)	9.0	71.5	71.5	9.5	72.0	72.0	22.0	20.0	150.0	25.0	23.0	150.0
Actuated g/C Ratio	0.06	0.48	0.48	0.06	0.48	0.48	0.15	0.13	1.00	0.17	0.15	1.00
v/c Ratio	1.02	0.52	0.30	0.59	1.02	0.56	1.04	1.00	0.07	0.97	1.01	0.51
Control Delay	135.4	28.3	3.3	79.9	62.5	6.7	103.8	104.4	0.1	85.6	103.3	1.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	135.4	28.3	3.3	79.9	62.5	6.7	103.8	104.4	0.1	85.6	103.3	1.2
LOS	F	C	A	E	E	A	F	F	A	F	F	A
Approach Delay		37.3			53.3			96.0			58.5	
Approach LOS		D			D			F			E	

Intersection Summary

Cycle Length: 150

Actuated Cycle Length: 150

Offset: 0 (0%), Referenced to phase 4:EBT and 8:WBT, Start of Green

Natural Cycle: 150

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.04

Intersection Signal Delay: 58.1

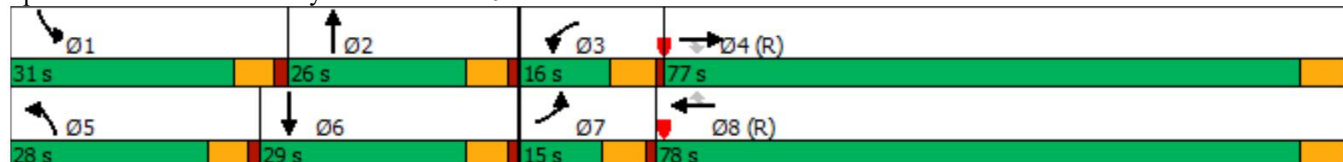
Intersection LOS: E

Intersection Capacity Utilization 97.8%

ICU Level of Service F

Analysis Period (min) 15

Splits and Phases: 1: County Line Rd & SH-119





























# HCM 6th Signalized Intersection Summary

## 1: County Line Rd & SH-119

























2045 Total AM - Improved

09/15/2022

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	194	1164	253	120	2320	526	704	436	96	747	510	750
Future Volume (veh/h)	194	1164	253	120	2320	526	704	436	96	747	510	750
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj FlowRate, veh/h	209	1252	0	129	2495	566	757	469	0	803	548	0
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	207	2500		174	2451	761	737	474		837	545	
Arrive On Green	0.06	0.49	0.00	0.05	0.48	0.48	0.15	0.13	0.00	0.17	0.15	0.00
Sat Flow, veh/h	3456	5106	1585	3456	5106	1585	5023	3554	1585	5023	3554	1585
Grp Volume(v), veh/h	209	1252	0	129	2495	566	757	469	0	803	548	0
Grp Sat Flow(s),veh/h/ln	1728	1702	1585	1728	1702	1585	1674	1777	1585	1674	1777	1585
Q Serve(g_s), s	9.0	24.9	0.0	5.5	72.0	43.3	22.0	19.8	0.0	23.8	23.0	0.0
Cycle Q Clear(g_c), s	9.0	24.9	0.0	5.5	72.0	43.3	22.0	19.8	0.0	23.8	23.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	207	2500		174	2451	761	737	474		837	545	
V/C Ratio(X)	1.01	0.50		0.74	1.02	0.74	1.03	0.99		0.96	1.01	
Avail Cap(c_a), veh/h	207	2500		230	2451	761	737	474		837	545	
HCMPlatoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	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	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	70.5	25.9	0.0	70.2	39.0	31.5	64.0	64.9	0.0	62.0	63.5	0.0
Incr Delay (d2), s/veh	64.6	0.7	0.0	8.5	22.8	6.5	40.4	38.9	0.0	21.7	40.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.9	10.3	0.0	2.7	34.7	17.9	12.2	11.5	0.0	11.8	13.4	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	135.1	26.6	0.0	78.7	61.8	38.0	104.4	103.8	0.0	83.7	103.5	0.0
LnGrp LOS	F	C		E	F	D	F	F		F	F	
Approach Vol, veh/h	1461		A	3190			1226		A	1351		A
Approach Delay, s/veh	42.1			58.3			104.1			91.7		
Approach LOS	D			E			F			F		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	31.0	26.0	13.6	79.4	28.0	29.0	15.0	78.0				
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0				
Max Green Setting (Gmax), s	25.0	20.0	10.0	71.0	22.0	23.0	9.0	72.0				
Max Q Clear Time (g_c+I1), s	25.8	21.8	7.5	26.9	24.0	25.0	11.0	74.0				
Green Ext Time (p_c), s	0.0	0.0	0.1	12.4	0.0	0.0	0.0	0.0				
Intersection Summary												
HCM6th Ctrl Delay	69.0											
HCM6th LOS	E											
Notes												
User approved pedestrian interval to be less than phase max green.												
Unsignalized Delay for [NBR, EBR, SBR] is excluded from calculations of the approach delay and intersection delay.												

Timings  
1: County Line Rd & SH-119

2045 Total PM - Improved  
09/15/2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	553	2309	532	92	1403	767	627	745	142	661	521	324
Future Volume (vph)	553	2309	532	92	1403	767	627	745	142	661	521	324
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Free	Prot	NA	Free
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			Free			Free
Detector Phase	7	4	4	3	8	8	5	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Minimum Split (s)	11.0	24.0	24.0	11.0	24.0	24.0	11.0	24.0		11.0	24.0	
Total Split (s)	30.0	76.0	76.0	11.0	57.0	57.0	28.0	37.0		26.0	35.0	
Total Split (%)	20.0%	50.7%	50.7%	7.3%	38.0%	38.0%	18.7%	24.7%		17.3%	23.3%	
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	4.5	4.5		4.5	4.5	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.5	1.5		1.5	1.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0		6.0	6.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	Max		None	Max	
Act Effct Green (s)	24.0	70.0	70.0	5.0	51.0	51.0	21.6	31.0	150.0	20.0	29.4	150.0
Actuated g/C Ratio	0.16	0.47	0.47	0.03	0.34	0.34	0.14	0.21	1.00	0.13	0.20	1.00
v/c Ratio	1.02	0.98	0.59	0.82	0.82	1.03	0.88	1.03	0.09	1.00	0.76	0.21
Control Delay	104.1	54.1	14.4	116.2	50.1	66.9	77.6	98.4	0.1	99.8	65.0	0.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	104.1	54.1	14.4	116.2	50.1	66.9	77.6	98.4	0.1	99.8	65.0	0.3
LOS	F	D	B	F	D	E	E	F	A	F	E	A
Approach Delay		56.0			58.5			80.6			66.4	
Approach LOS		E			E			F			E	

Intersection Summary

Cycle Length: 150

Actuated Cycle Length: 150

Offset: 0 (0%), Referenced to phase 4:EBT and 8:WBT, Start of Green

Natural Cycle: 150

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.03

Intersection Signal Delay: 62.7

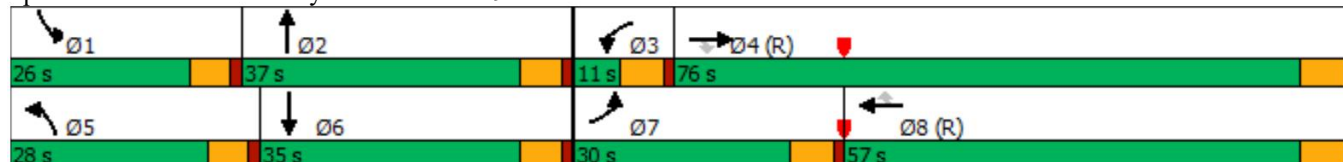
Intersection LOS: E

Intersection Capacity Utilization 101.9%

ICU Level of Service G

Analysis Period (min) 15

Splits and Phases: 1: County Line Rd & SH-119



























# HCM 6th Signalized Intersection Summary

## 1: County Line Rd & SH-119

2045 Total PM - Improved

09/15/2022

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	553	2309	532	92	1403	767	627	745	142	661	521	324
Future Volume (veh/h)	553	2309	532	92	1403	767	627	745	142	661	521	324
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	559	2332	0	93	1417	512	633	753	0	668	526	0
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	553	2383		115	1736	539	704	734		670	710	
Arrive On Green	0.16	0.47	0.00	0.03	0.34	0.34	0.14	0.21	0.00	0.13	0.20	0.00
Sat Flow, veh/h	3456	5106	1585	3456	5106	1585	5023	3554	1585	5023	3554	1585
Grp Volume(v), veh/h	559	2332	0	93	1417	512	633	753	0	668	526	0
Grp Sat Flow(s),veh/h/ln	1728	1702	1585	1728	1702	1585	1674	1777	1585	1674	1777	1585
Q Serve(g_s), s	24.0	67.3	0.0	4.0	38.0	47.2	18.6	31.0	0.0	19.9	20.9	0.0
Cycle Q Clear(g_c), s	24.0	67.3	0.0	4.0	38.0	47.2	18.6	31.0	0.0	19.9	20.9	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	553	2383		115	1736	539	704	734		670	710	
V/C Ratio(X)	1.01	0.98		0.81	0.82	0.95	0.90	1.03		1.00	0.74	
Avail Cap(c_a), veh/h	553	2383		115	1736	539	737	734		670	710	
HCMPlatoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	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	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	63.0	39.3	0.0	72.0	45.2	48.3	63.4	59.5	0.0	65.0	56.4	0.0
Incr Delay (d2), s/veh	41.0	14.1	0.0	33.1	4.4	28.2	13.7	39.8	0.0	34.1	6.8	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	13.7	30.8	0.0	2.3	16.8	22.8	8.8	18.0	0.0	10.6	10.1	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	104.0	53.3	0.0	105.1	49.6	76.4	77.1	99.3	0.0	99.0	63.2	0.0
LnGrp LOS	F	D		F	D	E	E	F		F	E	
Approach Vol, veh/h		2891	A		2022			1386	A		1194	A
Approach Delay, s/veh		63.1			58.9			89.2			83.3	
Approach LOS		E			E			F			F	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	26.0	37.0	11.0	76.0	27.0	36.0	30.0	57.0				
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0				
Max Green Setting (Gmax), s	20.0	31.0	5.0	70.0	22.0	29.0	24.0	51.0				
Max Q Clear Time (g_c+I1), s	21.9	33.0	6.0	69.3	20.6	22.9	26.0	49.2				
Green Ext Time (p_c), s	0.0	0.0	0.0	0.7	0.4	1.8	0.0	1.5				
<b>Intersection Summary</b>												
HCM6th Ctrl Delay			70.0									
HCM6th LOS			E									
<b>Notes</b>												
User approved pedestrian interval to be less than phase max green.												
Unsignalized Delay for [NBR, EBR, SBR] is excluded from calculations of the approach delay and intersection delay.												

Intersection												
Int Delay, s/veh	0											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↑	↑	↑↑	↑			↑			
Traffic Vol, veh/h	0	1099	47	9	1846	3	0	0	19	0	0	0
Future Vol, veh/h	0	1099	47	9	1846	3	0	0	19	0	0	0
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	-	-	Free	-	-	None
Storage Length	-	-	0	600	-	475	-	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	1157	49	9	1943	3	0	0	20	0	0	0
Major/Minor	Major1			Major2			Minor1					
Conflicting Flow All	-	0	0	1206	0	0	-	-	-			
Stage 1	-	-	-	-	-	-	-	-	-			
Stage 2	-	-	-	-	-	-	-	-	-			
Critical Hdwy	-	-	-	4.14	-	-	-	-	-			
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-			
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-			
Follow-up Hdwy	-	-	-	2.22	-	-	-	-	-			
Pot Cap-1 Maneuver	0	-	-	*946	-	-	0	0	0			
Stage 1	0	-	-	-	-	-	0	0	0			
Stage 2	0	-	-	-	-	-	0	0	0			
Platoon blocked, %		-	-	1	-	-						
MovCap-1 Maneuver	-	-	-	*946	-	-	-	0	-			
MovCap-2 Maneuver	-	-	-	-	-	-	-	0	-			
Stage 1	-	-	-	-	-	-	-	0	-			
Stage 2	-	-	-	-	-	-	-	0	-			
Approach	EB			WB			NB					
HCMControl Delay, s	0			0			0					
HCMLOS							A					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	WBR						
Capacity (veh/h)		-	-	-	*946	-	-					
HCMLane V/C Ratio		-	-	-	0.01	-	-					
HCMControl Delay (s)		0	-	-	8.8	-	-					
HCMLane LOS		A	-	-	A	-	-					
HCM95th %tile Q(veh)		-	-	-	0	-	-					
Notes												
~: Volume exceeds capacity		\$: Delay exceeds 300s		+: Computation Not Defined		*: All major volume in platoon						

Intersection												
Int Delay, s/veh	0											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↑	↑	↑↑	↑			↑			
Traffic Vol, veh/h	0	1760	129	12	1504	5	0	0	43	0	0	0
Future Vol, veh/h	0	1760	129	12	1504	5	0	0	43	0	0	0
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	-	-	Free	-	-	None
Storage Length	-	-	0	600	-	475	-	-	0	-	-	-
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, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	1833	134	13	1567	5	0	0	45	0	0	0
Major/Minor	Major1			Major2			Minor1					
Conflicting Flow All	-	0	0	1967	0	0	-	-	-			
Stage 1	-	-	-	-	-	-	-	-	-			
Stage 2	-	-	-	-	-	-	-	-	-			
Critical Hdwy	-	-	-	4.14	-	-	-	-	-			
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-			
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-			
Follow-up Hdwy	-	-	-	2.22	-	-	-	-	-			
Pot Cap-1 Maneuver	0	-	-	*518	-	-	0	0	0			
Stage 1	0	-	-	-	-	-	0	0	0			
Stage 2	0	-	-	-	-	-	0	0	0			
Platoon blocked, %		-	-	1	-	-						
MovCap-1 Maneuver	-	-	-	*518	-	-	-	0	-			
MovCap-2 Maneuver	-	-	-	-	-	-	-	0	-			
Stage 1	-	-	-	-	-	-	-	0	-			
Stage 2	-	-	-	-	-	-	-	0	-			
Approach	EB			WB			NB					
HCMControl Delay, s	0			0.1			0					
HCMLOS							A					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	WBR						
Capacity (veh/h)	-	-	-	*518	-	-						
HCMLane V/C Ratio	-	-	-	0.024	-	-						
HCMControl Delay (s)	0	-	-	12.1	-	-						
HCMLane LOS	A	-	-	B	-	-						
HCM95th %tile Q(veh)	-	-	-	0.1	-	-						
Notes												
~: Volume exceeds capacity		\$: Delay exceeds 300s		+: Computation Not Defined		*: All major volume in platoon						

Intersection												
Int Delay, s/veh	0.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↗	↖	↑↑	↗			↗			
Traffic Vol, veh/h	0	1269	55	21	2037	3	0	0	49	0	0	0
Future Vol, veh/h	0	1269	55	21	2037	3	0	0	49	0	0	0
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	-	-	Free	-	-	None
Storage Length	-	-	0	600	-	475	-	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	1336	58	22	2144	3	0	0	52	0	0	0
Major/Minor	Major1			Major2			Minor1					
Conflicting Flow All	-	0	0	1394	0	0	-	-	-			
Stage 1	-	-	-	-	-	-	-	-	-			
Stage 2	-	-	-	-	-	-	-	-	-			
Critical Hdwy	-	-	-	4.14	-	-	-	-	-			
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-			
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-			
Follow-up Hdwy	-	-	-	2.22	-	-	-	-	-			
Pot Cap-1 Maneuver	0	-	-	*829	-	-	0	0	0			
Stage 1	0	-	-	-	-	-	0	0	0			
Stage 2	0	-	-	-	-	-	0	0	0			
Platoon blocked, %		-	-	1	-	-						
MovCap-1 Maneuver	-	-	-	*829	-	-	-	0	-			
MovCap-2 Maneuver	-	-	-	-	-	-	-	0	-			
Stage 1	-	-	-	-	-	-	-	0	-			
Stage 2	-	-	-	-	-	-	-	0	-			
Approach	EB			WB			NB					
HCMControl Delay, s	0			0.1			0					
HCMLOS							A					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	WBR						
Capacity (veh/h)		-	-	-	*829	-	-					
HCMLane V/C Ratio		-	-	-	0.027	-	-					
HCMControl Delay (s)		0	-	-	9.5	-	-					
HCMLane LOS		A	-	-	A	-	-					
HCM95th %tile Q(veh)		-	-	-	0.1	-	-					
Notes												
~: Volume exceeds capacity		\$: Delay exceeds 300s		+: Computation Not Defined		*: All major volume in platoon						



Intersection												
Int Delay, s/veh	0.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↑	↑	↑↑	↑			↑			
Traffic Vol, veh/h	0	1947	160	42	1693	5	0	0	66	0	0	0
Future Vol, veh/h	0	1947	160	42	1693	5	0	0	66	0	0	0
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	-	-	Free	-	-	None
Storage Length	-	-	0	600	-	475	-	-	0	-	-	-
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, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	2028	167	44	1764	5	0	0	69	0	0	0
Major/Minor	Major1			Major2			Minor1					
Conflicting Flow All	-	0	0	2195	0	0	-	-	-			
Stage 1	-	-	-	-	-	-	-	-	-			
Stage 2	-	-	-	-	-	-	-	-	-			
Critical Hdwy	-	-	-	4.14	-	-	-	-	-			
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-			
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-			
Follow-up Hdwy	-	-	-	2.22	-	-	-	-	-			
Pot Cap-1 Maneuver	0	-	-	*401	-	-	0	0	0			
Stage 1	0	-	-	-	-	-	0	0	0			
Stage 2	0	-	-	-	-	-	0	0	0			
Platoon blocked, %		-	-	1	-	-						
MovCap-1 Maneuver	-	-	-	*401	-	-	-	0	-			
MovCap-2 Maneuver	-	-	-	-	-	-	-	0	-			
Stage 1	-	-	-	-	-	-	-	0	-			
Stage 2	-	-	-	-	-	-	-	0	-			
Approach	EB			WB			NB					
HCMControl Delay, s	0			0.4			0					
HCMLOS							A					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	WBR						
Capacity (veh/h)	-	-	-	*401	-	-						
HCMLane V/C Ratio	-	-	-	0.109	-	-						
HCMControl Delay (s)	0	-	-	15.1	-	-						
HCMLane LOS	A	-	-	C	-	-						
HCM95th %tile Q(veh)	-	-	-	0.4	-	-						
Notes												
~: Volume exceeds capacity    \$: Delay exceeds 300s    +: Computation Not Defined    *: All major volume in platoon												

Intersection												
Int Delay, s/veh	0.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↑	↑	↑↑	↑			↑			
Traffic Vol, veh/h	0	1251	163	112	2010	3	0	0	105	0	0	0
Future Vol, veh/h	0	1251	163	112	2010	3	0	0	105	0	0	0
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	-	-	Free	-	-	None
Storage Length	-	-	0	600	-	475	-	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	1317	172	118	2116	3	0	0	111	0	0	0
Major/Minor	Major1			Major2			Minor1					
Conflicting Flow All	-	0	0	1489	0	0	-	-	-			
Stage 1	-	-	-	-	-	-	-	-	-			
Stage 2	-	-	-	-	-	-	-	-	-			
Critical Hdwy	-	-	-	4.14	-	-	-	-	-			
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-			
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-			
Follow-up Hdwy	-	-	-	2.22	-	-	-	-	-			
Pot Cap-1 Maneuver	0	-	-	797	-	-	0	0	0			
Stage 1	0	-	-	-	-	-	0	0	0			
Stage 2	0	-	-	-	-	-	0	0	0			
Platoon blocked, %		-	-	1	-	-						
MovCap-1 Maneuver	-	-	-	797	-	-	-	0	-			
MovCap-2 Maneuver	-	-	-	-	-	-	-	0	-			
Stage 1	-	-	-	-	-	-	-	0	-			
Stage 2	-	-	-	-	-	-	-	0	-			
Approach	EB			WB			NB					
HCMControl Delay, s	0			0.5			0					
HCMLOS	A											
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	WBR						
Capacity (veh/h)	-	-	-	797	-	-						
HCMLane V/C Ratio	-	-	-	0.148	-	-						
HCMControl Delay (s)	0	-	-	10.3	-	-						
HCMLane LOS	A	-	-	B	-	-						
HCM95th %tile O(veh)	-	-	-	0.5	-	-						

Intersection												
Int Delay, s/veh	0.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↑	↑	↑↑	↑			↑			
Traffic Vol, veh/h	0	1932	262	112	1679	5	0	0	148	0	0	0
Future Vol, veh/h	0	1932	262	112	1679	5	0	0	148	0	0	0
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	-	-	Free	-	-	None
Storage Length	-	-	0	600	-	475	-	-	0	-	-	-
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, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	2013	273	117	1749	5	0	0	154	0	0	0
Major/Minor	Major1			Major2			Minor1					
Conflicting Flow All	-	0	0	2286	0	0	-	-	-			
Stage 1	-	-	-	-	-	-	-	-	-			
Stage 2	-	-	-	-	-	-	-	-	-			
Critical Hdwy	-	-	-	4.14	-	-	-	-	-			
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-			
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-			
Follow-up Hdwy	-	-	-	2.22	-	-	-	-	-			
Pot Cap-1 Maneuver	0	-	-	365	-	-	0	0	0			
Stage 1	0	-	-	-	-	-	0	0	0			
Stage 2	0	-	-	-	-	-	0	0	0			
Platoon blocked, %		-	-	1	-	-						
MovCap-1 Maneuver	-	-	-	365	-	-	-	0	-			
MovCap-2 Maneuver	-	-	-	-	-	-	-	0	-			
Stage 1	-	-	-	-	-	-	-	0	-			
Stage 2	-	-	-	-	-	-	-	0	-			
Approach	EB			WB			NB					
HCMControl Delay, s	0			1.2			0					
HCMLOS							A					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	WBR						
Capacity (veh/h)	-	-	-	365	-	-						
HCMLane V/C Ratio	-	-	-	0.32	-	-						
HCMControl Delay (s)	0	-	-	19.4	-	-						
HCMLane LOS	A	-	-	C	-	-						
HCM95th %tile O(veh)	-	-	-	1.4	-	-						

Intersection												
Int Delay, s/veh	0.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑↑	↑	↑	↑↑↑↑	↑			↑			
Traffic Vol, veh/h	0	1836	79	25	2989	5	0	0	59	0	0	0
Future Vol, veh/h	0	1836	79	25	2989	5	0	0	59	0	0	0
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	-	-	Free	-	-	None
Storage Length	-	-	0	600	-	475	-	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	1933	83	26	3146	5	0	0	62	0	0	0
Major/Minor	Major1			Major2			Minor1					
Conflicting Flow All	-	0	0	2016	0	0	-	-	-			
Stage 1	-	-	-	-	-	-	-	-	-			
Stage 2	-	-	-	-	-	-	-	-	-			
Critical Hdwy	-	-	-	5.34	-	-	-	-	-			
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-			
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-			
Follow-up Hdwy	-	-	-	3.12	-	-	-	-	-			
Pot Cap-1 Maneuver	0	-	-	*618	-	-	0	0	0			
Stage 1	0	-	-	-	-	-	0	0	0			
Stage 2	0	-	-	-	-	-	0	0	0			
Platoon blocked, %		-	-	1	-	-						
MovCap-1 Maneuver	-	-	-	*618	-	-	-	0	-			
MovCap-2 Maneuver	-	-	-	-	-	-	-	0	-			
Stage 1	-	-	-	-	-	-	-	0	-			
Stage 2	-	-	-	-	-	-	-	0	-			
Approach	EB			WB			NB					
HCMControl Delay, s	0			0.1			0					
HCMLOS							A					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	WBR						
Capacity (veh/h)		-	-	-	*618	-	-					
HCMLane V/C Ratio		-	-	-	0.043	-	-					
HCMControl Delay (s)		0	-	-	11.1	-	-					
HCMLane LOS		A	-	-	B	-	-					
HCM95th %tile Q(veh)		-	-	-	0.1	-	-					
Notes												
~: Volume exceeds capacity		\$: Delay exceeds 300s		+: Computation Not Defined		*: All major volume in platoon						

Intersection												
Int Delay, s/veh	0.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑↑	↑	↑	↑↑↑↑	↑			↑			
Traffic Vol, veh/h	0	2854	226	48	2469	8	0	0	88	0	0	0
Future Vol, veh/h	0	2854	226	48	2469	8	0	0	88	0	0	0
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	-	-	Free	-	-	None
Storage Length	-	-	0	600	-	475	-	-	0	-	-	-
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, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	2973	235	50	2572	8	0	0	92	0	0	0
Major/Minor	Major1			Major2			Minor1					
Conflicting Flow All	-	0	0	3208	0	0	-	-	-			
Stage 1	-	-	-	-	-	-	-	-	-			
Stage 2	-	-	-	-	-	-	-	-	-			
Critical Hdwy	-	-	-	5.34	-	-	-	-	-			
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-			
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-			
Follow-up Hdwy	-	-	-	3.12	-	-	-	-	-			
Pot Cap-1 Maneuver	0	-	-	*285	-	-	0	0	0			
Stage 1	0	-	-	-	-	-	0	0	0			
Stage 2	0	-	-	-	-	-	0	0	0			
Platoon blocked, %		-	-	1	-	-						
MovCap-1 Maneuver	-	-	-	*285	-	-	-	0	-			
MovCap-2 Maneuver	-	-	-	-	-	-	-	0	-			
Stage 1	-	-	-	-	-	-	-	0	-			
Stage 2	-	-	-	-	-	-	-	0	-			
Approach	EB			WB			NB					
HCMControl Delay, s	0			0.4			0					
HCMLOS							A					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	WBR						
Capacity (veh/h)		-	-	-	*285	-	-					
HCMLane V/C Ratio		-	-	-	0.175	-	-					
HCMControl Delay (s)		0	-	-	20.3	-	-					
HCMLane LOS		A	-	-	C	-	-					
HCM95th %tile Q(veh)		-	-	-	0.6	-	-					
Notes												
~: Volume exceeds capacity		\$: Delay exceeds 300s		+: Computation Not Defined		*: All major volume in platoon						



















Intersection												
Int Delay, s/veh	0.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑↑	↑	↑	↑↑↑↑	↑			↑			
Traffic Vol, veh/h	0	1818	187	116	2962	5	0	0	115	0	0	0
Future Vol, veh/h	0	1818	187	116	2962	5	0	0	115	0	0	0
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	-	-	Free	-	-	None
Storage Length	-	-	0	600	-	475	-	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	1914	197	122	3118	5	0	0	121	0	0	0
Major/Minor	Major1			Major2			Minor1					
Conflicting Flow All	-	0	0	2111	0	0	-	-	-			
Stage 1	-	-	-	-	-	-	-	-	-			
Stage 2	-	-	-	-	-	-	-	-	-			
Critical Hdwy	-	-	-	5.34	-	-	-	-	-			
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-			
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-			
Follow-up Hdwy	-	-	-	3.12	-	-	-	-	-			
Pot Cap-1 Maneuver	0	-	-	591	-	-	0	0	0			
Stage 1	0	-	-	-	-	-	0	0	0			
Stage 2	0	-	-	-	-	-	0	0	0			
Platoon blocked, %		-	-	1	-	-						
MovCap-1 Maneuver	-	-	-	591	-	-	-	0	-			
MovCap-2 Maneuver	-	-	-	-	-	-	-	0	-			
Stage 1	-	-	-	-	-	-	-	0	-			
Stage 2	-	-	-	-	-	-	-	0	-			
Approach	EB			WB			NB					
HCMControl Delay, s	0			0.5			0					
HCMLOS	A											
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	WBR						
Capacity (veh/h)	-	-	-	591	-	-						
HCMLane V/C Ratio	-	-	-	0.207	-	-						
HCMControl Delay (s)	0	-	-	12.7	-	-						
HCMLane LOS	A	-	-	B	-	-						
HCM95th %tile O(veh)	-	-	-	0.8	-	-						



Intersection												
Int Delay, s/veh	0.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑↑	↑↑	↑↑	↑↑↑↑	↑↑			↑↑			
Traffic Vol, veh/h	0	2839	328	118	2455	8	0	0	170	0	0	0
Future Vol, veh/h	0	2839	328	118	2455	8	0	0	170	0	0	0
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	-	-	Free	-	-	None
Storage Length	-	-	0	600	-	475	-	-	0	-	-	-
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, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	2957	342	123	2557	8	0	0	177	0	0	0
Major/Minor	Major1			Major2			Minor1					
Conflicting Flow All	-	0	0	3299	0	0	-	-	-			
Stage 1	-	-	-	-	-	-	-	-	-			
Stage 2	-	-	-	-	-	-	-	-	-			
Critical Hdwy	-	-	-	5.34	-	-	-	-	-			
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-			
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-			
Follow-up Hdwy	-	-	-	3.12	-	-	-	-	-			
Pot Cap-1 Maneuver	0	-	-	*285	-	-	0	0	0			
Stage 1	0	-	-	-	-	-	0	0	0			
Stage 2	0	-	-	-	-	-	0	0	0			
Platoon blocked, %		-	-	1	-	-						
MovCap-1 Maneuver	-	-	-	*285	-	-	-	0	-			
MovCap-2 Maneuver	-	-	-	-	-	-	-	0	-			
Stage 1	-	-	-	-	-	-	-	0	-			
Stage 2	-	-	-	-	-	-	-	0	-			
Approach	EB			WB			NB					
HCMControl Delay, s	0			1.2			0					
HCMLOS							A					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	WBR						
Capacity (veh/h)		-	-	-	*285	-	-					
HCMLane V/C Ratio		-	-	-	0.431	-	-					
HCMControl Delay (s)		0	-	-	26.9	-	-					
HCMLane LOS		A	-	-	D	-	-					
HCM95th %tile Q(veh)		-	-	-	2.1	-	-					
Notes												
~: Volume exceeds capacity    \$: Delay exceeds 300s    +: Computation Not Defined    *: All major volume in platoon												

# Timings 3: Zlaten Dr & SH-119

2022 Existing AM  
09/14/2022

									
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	1	1118	7	39	1905	14	0	1	0
Future Volume (vph)	1	1118	7	39	1905	14	0	1	0
Turn Type	Prot	NA	Perm	Prot	NA	Perm	NA	Perm	NA
Protected Phases	7	4		3	8		2		6
Permitted Phases			4			2		6	
Detector Phase	7	4	4	3	8	2	2	6	6
Switch Phase									
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	11.0	24.0	24.0	11.0	24.0	23.0	23.0	23.0	23.0
Total Split (s)	11.0	82.0	82.0	15.0	86.0	23.0	23.0	23.0	23.0
Total Split (%)	9.2%	68.3%	68.3%	12.5%	71.7%	19.2%	19.2%	19.2%	19.2%
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.5	1.5	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	5.0	5.0		4.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes				
Recall Mode	None	C-Max	C-Max	None	C-Max	Max	Max	Max	Max
Act Effct Green (s)	5.0	79.5	79.5	7.8	88.8	18.0	18.0		18.5
Actuated g/C Ratio	0.04	0.66	0.66	0.06	0.74	0.15	0.15		0.15
v/c Ratio	0.01	0.53	0.01	0.38	0.81	0.04	0.19		0.01
Control Delay	60.0	12.7	0.0	62.9	14.2	44.1	1.2		0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0
Total Delay	60.0	12.7	0.0	62.9	14.2	44.1	1.2		0.0
LOS	E	B	A	E	B	D	A		A
Approach Delay		12.6			15.2		9.3		
Approach LOS		B			B		A		

## Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 0 (0%), Referenced to phase 4:EBT and 8:WBT, Start of Green

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.81

Intersection Signal Delay: 14.1

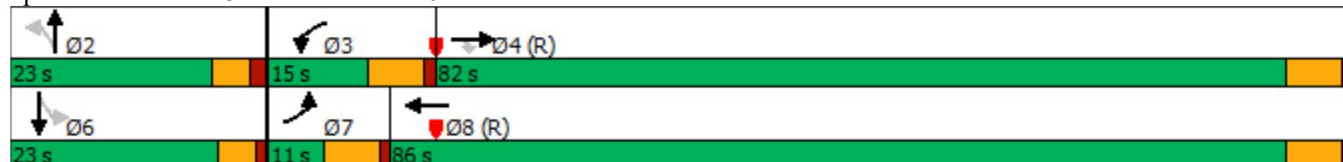
Intersection LOS: B

Intersection Capacity Utilization 66.0%

ICU Level of Service C

Analysis Period (min) 15






















Splits and Phases: 3: Zlaten Dr & SH-119



# HCM 6th Signalized Intersection Summary

















## 3: Zlaten Dr & SH-119

2022 Existing AM  
09/14/2022

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	1118	7	39	1905	0	14	0	62	1	0	1
Future Volume (veh/h)	1	1118	7	39	1905	0	14	0	62	1	0	1
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj FlowRate, veh/h	1	1242	8	43	2117	0	16	0	69	1	0	1
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	2	2390	1066	57	2498	0	556	0	244	129	14	98
Arrive On Green	0.00	0.89	0.89	0.03	0.70	0.00	0.15	0.00	0.15	0.15	0.00	0.15
Sat Flow, veh/h	1781	3554	1585	1781	3647	0	2748	0	1585	543	93	636
Grp Volume(v), veh/h	1	1242	8	43	2117	0	16	0	69	2	0	0
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	0	1374	0	1585	1271	0	0
Q Serve(g_s), s	0.1	8.3	0.1	2.9	52.6	0.0	0.0	0.0	4.6	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.1	8.3	0.1	2.9	52.6	0.0	0.5	0.0	4.6	4.6	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.00	1.00		1.00	0.50		0.50
Lane Grp Cap(c), veh/h	2	2390	1066	57	2498	0	556	0	244	241	0	0
V/C Ratio(X)	0.41	0.52	0.01	0.76	0.85	0.00	0.03	0.00	0.28	0.01	0.00	0.00
Avail Cap(c_a), veh/h	74	2390	1066	134	2498	0	556	0	244	241	0	0
HCMPlatoon Ratio	1.33	1.33	1.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	59.8	2.5	2.1	57.6	13.1	0.0	43.2	0.0	44.9	43.0	0.0	0.0
Incr Delay (d2), s/veh	84.5	0.8	0.0	18.7	3.8	0.0	0.1	0.0	2.9	0.1	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	2.1	0.0	1.6	19.7	0.0	0.2	0.0	2.0	0.1	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	144.4	3.3	2.1	76.3	16.9	0.0	43.2	0.0	47.8	43.1	0.0	0.0
LnGrp LOS	F	A	A	E	B	A	D	A	D	D	A	A
Approach Vol, veh/h	1251				2160				85		2	
Approach Delay, s/veh	3.4				18.1				46.9		43.1	
Approach LOS	A				B				D		D	
Timer - Assigned Phs	2		3		4		6		7		8	
Phs Duration (G+Y+Rc), s	23.5		9.8		86.7		23.5		6.2		90.3	
Change Period (Y+Rc), s	5.0		6.0		6.0		*5		6.0		6.0	
Max Green Setting (Gmax), s	18.0		9.0		76.0		*19		5.0		80.0	
Max Q Clear Time (g_c+I1), s	6.6		4.9		10.3		6.6		2.1		54.6	
Green Ext Time (p_c), s	0.2		0.0		13.7		0.0		0.0		19.8	
Intersection Summary												
HCM6th Ctrl Delay	13.6											
HCM6th LOS	B											
Notes												

# Timings 3: Zlaten Dr & SH-119

2022 Existing PM  
09/14/2022

								
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBT
Lane Configurations								
Traffic Volume (vph)	5	1806	25	95	1497	33	0	0
Future Volume (vph)	5	1806	25	95	1497	33	0	0
Turn Type	Prot	NA	Perm	Prot	NA	Perm	NA	NA
Protected Phases	7	4		3	8		2	6
Permitted Phases			4			2		
Detector Phase	7	4	4	3	8	2	2	6
Switch Phase								
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	11.0	24.0	24.0	11.0	24.0	23.0	23.0	23.0
Total Split (s)	14.0	81.0	81.0	16.0	83.0	23.0	23.0	23.0
Total Split (%)	11.7%	67.5%	67.5%	13.3%	69.2%	19.2%	19.2%	19.2%
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.5	1.5	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	5.0	5.0	4.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag			
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes			
Recall Mode	None	C-Max	C-Max	None	C-Max	Max	Max	Max
Act Effct Green (s)	6.0	75.5	75.5	9.5	88.4	18.0	18.0	18.5
Actuated g/C Ratio	0.05	0.63	0.63	0.08	0.74	0.15	0.15	0.15
v/c Ratio	0.06	0.83	0.03	0.69	0.59	0.08	0.29	0.01
Control Delay	44.6	23.4	1.5	78.8	9.1	44.6	6.9	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	44.6	23.4	1.5	78.8	9.1	44.6	6.9	0.0
LOS	D	C	A	E	A	D	A	A
Approach Delay		23.1			13.2		16.5	
Approach LOS		C			B		B	

## Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 0 (0%), Referenced to phase 4:EBT and 8:WBT, Start of Green

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.83

Intersection Signal Delay: 18.4

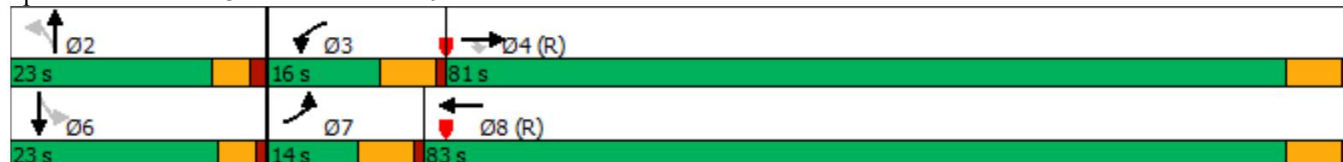
Intersection LOS: B

Intersection Capacity Utilization 77.0%

ICU Level of Service D

Analysis Period (min) 15

## Splits and Phases: 3: Zlaten Dr &SH-119























# HCM 6th Signalized Intersection Summary

## 3: Zlaten Dr & SH-119



















2022 Existing PM

09/14/2022

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	1806	25	95	1497	1	33	0	98	0	0	3
Future Volume (veh/h)	5	1806	25	95	1497	1	33	0	98	0	0	3
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj FlowRate, veh/h	5	1843	26	97	1528	1	34	0	100	0	0	3
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	11	2261	1009	121	2543	2	538	0	244	0	0	244
Arrive On Green	0.01	0.64	0.64	0.07	0.70	0.70	0.15	0.00	0.15	0.00	0.00	0.15
Sat Flow, veh/h	1781	3554	1585	1781	3644	2	2743	0	1585	0	0	1585
Grp Volume(v), veh/h	5	1843	26	97	745	784	34	0	100	0	0	3
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1870	1371	0	1585	0	0	1585
Q Serve(g_s), s	0.3	47.0	0.7	6.4	26.2	26.2	1.3	0.0	6.8	0.0	0.0	0.2
Cycle Q Clear(g_c), s	0.3	47.0	0.7	6.4	26.2	26.2	1.5	0.0	6.8	0.0	0.0	0.2
Prop In Lane	1.00		1.00	1.00		0.00	1.00		1.00	0.00		1.00
Lane Grp Cap(c), veh/h	11	2261	1009	121	1240	1305	538	0	244	0	0	244
V/C Ratio(X)	0.44	0.81	0.03	0.80	0.60	0.60	0.06	0.00	0.41	0.00	0.00	0.01
Avail Cap(c_a), veh/h	119	2261	1009	148	1240	1305	538	0	244	0	0	244
HCMPlatoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	0.00	1.00
Uniform Delay (d), s/veh	59.4	16.5	8.1	55.1	9.4	9.4	43.6	0.0	45.8	0.0	0.0	43.0
Incr Delay (d2), s/veh	24.3	3.4	0.0	22.2	2.2	2.1	0.2	0.0	5.0	0.0	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	18.7	0.3	3.6	10.0	10.5	0.5	0.0	3.0	0.0	0.0	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	83.7	19.9	8.1	77.3	11.6	11.5	43.9	0.0	50.8	0.0	0.0	43.1
LnGrp LOS	F	B	A	E	B	B	D	A	D	A	A	D
Approach Vol, veh/h	1874		1626				134		3			
Approach Delay, s/veh	19.9		15.5				49.1		43.1			
Approach LOS	B		B				D		D			
Timer - Assigned Phs	2		3		4		6		7		8	
Phs Duration (G+Y+Rc), s	23.5		14.1		82.4		23.5		6.8		89.7	
Change Period (Y+Rc), s	5.0		6.0		6.0		*5		6.0		6.0	
Max Green Setting (Gmax), s	18.0		10.0		75.0		*19		8.0		77.0	
Max Q Clear Time (g_c+I1), s	8.8		8.4		49.0		2.2		2.3		28.2	
Green Ext Time (p_c), s	0.4		0.0		17.5		0.0		0.0		17.0	
Intersection Summary												
HCM6th Ctrl Delay	19.0											
HCM6th LOS	B											
Notes												

# Timings 3: Zlaten Dr & SH-119

2025 Background AM  
09/14/2022

									
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	64	1255	7	48	2048	15	14	64	13
Future Volume (vph)	64	1255	7	48	2048	15	14	64	13
Turn Type	Prot	NA	Perm	Prot	NA	Perm	NA	Perm	NA
Protected Phases	7	4		3	8		2		6
Permitted Phases			4			2		6	
Detector Phase	7	4	4	3	8	2	2	6	6
Switch Phase									
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	11.0	24.0	24.0	11.0	24.0	23.0	23.0	23.0	23.0
Total Split (s)	11.0	82.0	82.0	15.0	86.0	23.0	23.0	23.0	23.0
Total Split (%)	9.2%	68.3%	68.3%	12.5%	71.7%	19.2%	19.2%	19.2%	19.2%
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.5	1.5	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	5.0	5.0		4.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes				
Recall Mode	None	C-Max	C-Max	None	C-Max	Max	Max	Max	Max
Act Effct Green (s)	5.0	79.3	79.3	8.0	80.0	18.0	18.0		18.5
Actuated g/C Ratio	0.04	0.66	0.66	0.07	0.67	0.15	0.15		0.15
v/c Ratio	0.97	0.60	0.01	0.45	1.00	0.06	0.34		0.70
Control Delay	133.2	16.2	0.0	65.7	38.4	44.4	15.5		56.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0
Total Delay	133.2	16.2	0.0	65.7	38.4	44.4	15.5		56.3
LOS	F	B	A	E	D	D	B		E
Approach Delay		21.7			39.0		19.4		56.3
Approach LOS		C			D		B		E

## Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 0 (0%), Referenced to phase 4:EBT and 8:WBT, Start of Green

Natural Cycle: 110

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.00

Intersection Signal Delay: 32.9

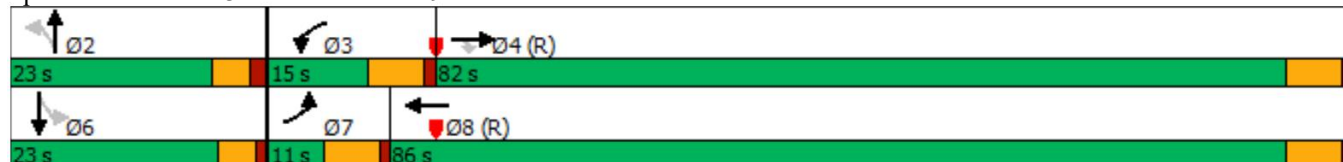
Intersection LOS: C

Intersection Capacity Utilization 82.2%

ICU Level of Service E

Analysis Period (min) 15

## Splits and Phases: 3: Zlaten Dr &SH-119

























# HCM 6th Signalized Intersection Summary

## 3: Zlaten Dr & SH-119



















2025 Background AM

09/14/2022

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	64	1255	7	48	2048	63	15	14	83	64	13	64
Future Volume (veh/h)	64	1255	7	48	2048	63	15	14	83	64	13	64
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj FlowRate, veh/h	71	1394	8	53	2276	70	17	16	92	71	14	71
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	74	2869	1280	68	2831	87	396	37	213	106	30	76
Arrive On Green	0.06	1.00	1.00	0.04	0.80	0.80	0.15	0.15	0.15	0.15	0.15	0.15
Sat Flow, veh/h	1781	3554	1585	1781	3520	108	2547	240	1381	402	192	496
Grp Volume(v), veh/h	71	1394	8	53	1143	1203	17	0	108	156	0	0
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1851	1273	0	1622	1090	0	0
Q Serve(g_s), s	4.8	0.0	0.0	3.5	42.4	43.6	0.0	0.0	7.2	10.1	0.0	0.0
Cycle Q Clear(g_c), s	4.8	0.0	0.0	3.5	42.4	43.6	1.0	0.0	7.2	17.4	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.06	1.00		0.85	0.46		0.46
Lane Grp Cap(c), veh/h	74	2869	1280	68	1429	1488	396	0	250	212	0	0
V/C Ratio(X)	0.96	0.49	0.01	0.77	0.80	0.81	0.04	0.00	0.43	0.74	0.00	0.00
Avail Cap(c_a), veh/h	74	2869	1280	134	1429	1488	396	0	250	212	0	0
HCMPlatoon Ratio	1.33	1.33	1.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	56.6	0.0	0.0	57.2	6.4	6.6	43.3	0.0	46.0	51.6	0.0	0.0
Incr Delay (d2), s/veh	89.4	0.6	0.0	16.7	4.8	4.8	0.2	0.0	5.4	20.3	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.0	0.2	0.0	1.9	13.5	14.5	0.2	0.0	3.3	5.8	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	145.9	0.6	0.0	73.9	11.2	11.4	43.6	0.0	51.4	71.9	0.0	0.0
LnGrp LOS	F	A	A	E	B	B	D	A	D	E	A	A
Approach Vol, veh/h	1473			2399			125			156		
Approach Delay, s/veh	7.6			12.7			50.3			71.9		
Approach LOS	A			B			D			E		
Timer - Assigned Phs	2		3	4		6		7	8			
Phs Duration (G+Y+Rc), s	23.5		10.6	103.4		23.5		11.0	103.0			
Change Period (Y+Rc), s	5.0		6.0	6.0		*5		6.0	6.0			
Max Green Setting (Gmax), s	18.0		9.0	76.0		*19		5.0	80.0			
Max Q Clear Time (g_c+I1), s	9.2		5.5	2.0		19.4		6.8	45.6			
Green Ext Time (p_c), s	0.4		0.0	17.1		0.0		0.0	28.3			
Intersection Summary												
HCM6th Ctrl Delay	14.2											
HCM6th LOS	B											
Notes												

# Timings 3: Zlaten Dr & SH-119

2025 Background PM  
09/14/2022

									
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	59	1962	27	118	1663	35	11	52	12
Future Volume (vph)	59	1962	27	118	1663	35	11	52	12
Turn Type	Prot	NA	Perm	Prot	NA	Perm	NA	Perm	NA
Protected Phases	7	4		3	8		2		6
Permitted Phases			4			2		6	
Detector Phase	7	4	4	3	8	2	2	6	6
Switch Phase									
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	11.0	24.0	24.0	11.0	24.0	23.0	23.0	23.0	23.0
Total Split (s)	14.0	81.0	81.0	16.0	83.0	23.0	23.0	23.0	23.0
Total Split (%)	11.7%	67.5%	67.5%	13.3%	69.2%	19.2%	19.2%	19.2%	19.2%
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.5	1.5	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	5.0	5.0		4.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes				
Recall Mode	None	C-Max	C-Max	None	C-Max	Max	Max	Max	Max
Act Effct Green (s)	7.6	75.1	75.1	9.9	79.8	18.0	18.0		18.5
Actuated g/C Ratio	0.06	0.63	0.63	0.08	0.66	0.15	0.15		0.15
v/c Ratio	0.54	0.90	0.03	0.82	0.75	0.11	0.38		0.55
Control Delay	47.5	26.2	1.7	93.6	16.7	45.2	13.7		45.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0
Total Delay	47.5	26.2	1.7	93.6	16.7	45.2	13.7		45.0
LOS	D	C	A	F	B	D	B		D
Approach Delay		26.5			21.6		20.6		45.0
Approach LOS		C			C		C		D

## Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 0 (0%), Referenced to phase 4:EBT and 8:WBT, Start of Green

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.90

Intersection Signal Delay: 24.6

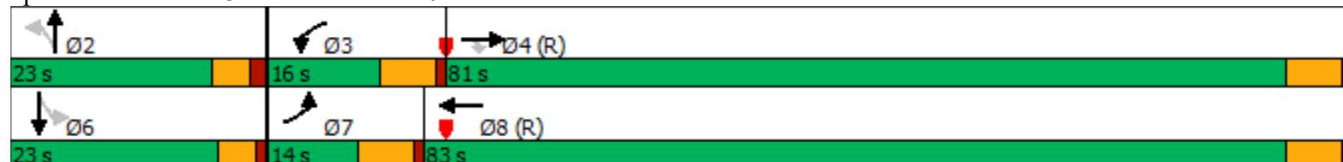
Intersection LOS: C

Intersection Capacity Utilization 93.3%

ICU Level of Service F

Analysis Period (min) 15

## Splits and Phases: 3: Zlaten Dr &SH-119























# HCM 6th Signalized Intersection Summary

## 3: Zlaten Dr & SH-119



















2025 Background PM

09/14/2022

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	59	1962	27	118	1663	55	35	11	116	52	12	55
Future Volume (veh/h)	59	1962	27	118	1663	55	35	11	116	52	12	55
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj FlowRate, veh/h	60	2002	28	120	1697	56	36	11	118	53	12	56
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	77	2494	1112	145	2598	85	407	21	226	94	31	71
Arrive On Green	0.04	0.70	0.70	0.08	0.74	0.74	0.15	0.15	0.15	0.15	0.15	0.15
Sat Flow, veh/h	1781	3554	1585	1781	3511	115	2586	137	1469	330	203	458
Grp Volume(v), veh/h	60	2002	28	120	856	897	36	0	129	121	0	0
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1850	1293	0	1606	991	0	0
Q Serve(g_s), s	4.0	46.2	0.6	8.0	29.0	29.4	0.0	0.0	8.9	6.8	0.0	0.0
Cycle Q Clear(g_c), s	4.0	46.2	0.6	8.0	29.0	29.4	2.2	0.0	8.9	15.6	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.06	1.00		0.91	0.44		0.46
Lane Grp Cap(c), veh/h	77	2494	1112	145	1315	1369	407	0	248	196	0	0
V/C Ratio(X)	0.78	0.80	0.03	0.83	0.65	0.66	0.09	0.00	0.52	0.62	0.00	0.00
Avail Cap(c_a), veh/h	119	2494	1112	148	1315	1369	407	0	248	196	0	0
HCMPlatoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	56.8	12.2	5.4	54.3	7.8	7.9	43.8	0.0	46.7	50.5	0.0	0.0
Incr Delay (d2), s/veh	15.7	2.8	0.0	29.9	2.5	2.5	0.4	0.0	7.6	13.8	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.1	17.1	0.2	4.8	10.5	11.0	0.5	0.0	4.1	4.3	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	72.6	15.1	5.5	84.2	10.3	10.3	44.3	0.0	54.3	64.3	0.0	0.0
LnGrp LOS	E	B	A	F	B	B	D	A	D	E	A	A
Approach Vol, veh/h	2090			1873			165			121		
Approach Delay, s/veh	16.6			15.1			52.1			64.3		
Approach LOS	B			B			D			E		
Timer - Assigned Phs	2		3	4		6		7	8			
Phs Duration (G+Y+Rc), s	23.5		15.8	90.5		23.5		11.2	95.1			
Change Period (Y+Rc), s	5.0		6.0	6.0		*5		6.0	6.0			
Max Green Setting (Gmax), s	18.0		10.0	75.0		*19		8.0	77.0			
Max Q Clear Time (g_c+I1), s	10.9		10.0	48.2		17.6		6.0	31.4			
Green Ext Time (p_c), s	0.4		0.0	19.6		0.0		0.0	21.7			
Intersection Summary												
HCM6th Ctrl Delay	18.7											
HCM6th LOS	B											
Notes												

# Timings 3: Zlaten Dr & SH-119

2025 Total AM  
09/14/2022

									
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	64	1293	7	48	2112	15	14	64	13
Future Volume (vph)	64	1293	7	48	2112	15	14	64	13
Turn Type	Prot	NA	Perm	Prot	NA	Perm	NA	Perm	NA
Protected Phases	7	4		3	8		2		6
Permitted Phases			4			2		6	
Detector Phase	7	4	4	3	8	2	2	6	6
Switch Phase									
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	11.0	24.0	24.0	11.0	24.0	23.0	23.0	23.0	23.0
Total Split (s)	11.0	82.0	82.0	15.0	86.0	23.0	23.0	23.0	23.0
Total Split (%)	9.2%	68.3%	68.3%	12.5%	71.7%	19.2%	19.2%	19.2%	19.2%
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.5	1.5	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	5.0	5.0		4.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes				
Recall Mode	None	C-Max	C-Max	None	C-Max	Max	Max	Max	Max
Act Effct Green (s)	5.0	79.3	79.3	8.0	80.0	18.0	18.0		18.5
Actuated g/C Ratio	0.04	0.66	0.66	0.07	0.67	0.15	0.15		0.15
v/c Ratio	0.97	0.61	0.01	0.45	1.03	0.06	0.34		0.70
Control Delay	131.5	17.2	0.0	65.7	46.9	44.4	15.5		56.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0
Total Delay	131.5	17.2	0.0	65.7	46.9	44.4	15.5		56.3
LOS	F	B	A	E	D	D	B		E
Approach Delay		22.5			47.3		19.4		56.3
Approach LOS		C			D		B		E

## Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 0 (0%), Referenced to phase 4:EBT and 8:WBT, Start of Green

Natural Cycle: 120

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.03

Intersection Signal Delay: 38.0

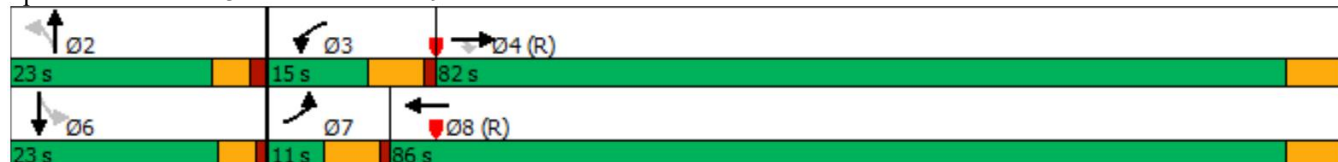
Intersection LOS: D

Intersection Capacity Utilization 83.9%

ICU Level of Service E

Analysis Period (min) 15























## Splits and Phases: 3: Zlaten Dr &SH-119



# HCM 6th Signalized Intersection Summary



















## 3: Zlaten Dr & SH-119

2025 Total AM  
09/14/2022

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	64	1293	7	48	2112	63	15	14	83	64	13	64
Future Volume (veh/h)	64	1293	7	48	2112	63	15	14	83	64	13	64
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	71	1437	8	53	2347	70	17	16	92	71	14	71
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	74	2869	1280	68	2834	84	396	37	213	106	30	76
Arrive On Green	0.06	1.00	1.00	0.04	0.80	0.80	0.15	0.15	0.15	0.15	0.15	0.15
Sat Flow, veh/h	1781	3554	1585	1781	3524	105	2547	240	1381	402	192	496
Grp Volume(v), veh/h	71	1437	8	53	1178	1239	17	0	108	156	0	0
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1852	1273	0	1622	1090	0	0
Q Serve(g_s), s	4.8	0.0	0.0	3.5	46.2	47.6	0.0	0.0	7.2	10.1	0.0	0.0
Cycle Q Clear(g_c), s	4.8	0.0	0.0	3.5	46.2	47.6	1.0	0.0	7.2	17.4	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.06	1.00		0.85	0.46		0.46
Lane Grp Cap(c), veh/h	74	2869	1280	68	1429	1489	396	0	250	212	0	0
V/C Ratio(X)	0.96	0.50	0.01	0.77	0.82	0.83	0.04	0.00	0.43	0.74	0.00	0.00
Avail Cap(c_a), veh/h	74	2869	1280	134	1429	1489	396	0	250	212	0	0
HCMPlatoon Ratio	1.33	1.33	1.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	56.6	0.0	0.0	57.2	6.8	7.0	43.3	0.0	46.0	51.6	0.0	0.0
Incr Delay (d2), s/veh	89.4	0.6	0.0	16.7	5.5	5.6	0.2	0.0	5.4	20.3	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.0	0.3	0.0	1.9	14.9	15.9	0.2	0.0	3.3	5.8	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	145.9	0.6	0.0	73.9	12.3	12.6	43.6	0.0	51.4	71.9	0.0	0.0
LnGrp LOS	F	A	A	E	B	B	D	A	D	E	A	A
Approach Vol, veh/h		1516			2470			125			156	
Approach Delay, s/veh		7.4			13.8			50.3			71.9	
Approach LOS		A			B			D			E	
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		23.5	10.6	103.4		23.5	11.0	103.0				
Change Period (Y+Rc), s		5.0	6.0	6.0		*5	6.0	6.0				
Max Green Setting (Gmax), s		18.0	9.0	76.0		*19	5.0	80.0				
Max Q Clear Time (g_c+H1), s		9.2	5.5	2.0		19.4	6.8	49.6				
Green Ext Time (p_c), s		0.4	0.0	18.2		0.0	0.0	26.2				
<b>Intersection Summary</b>												
HCM6th Ctrl Delay			14.7									
HCM6th LOS			B									
<b>Notes</b>												
*HCM6th computational engine requires equal clearance times for the phases crossing the barrier.												

# Timings 3: Zlaten Dr & SH-119

2025 Total PM  
09/14/2022

									
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	59	2031	27	118	1719	35	11	52	12
Future Volume (vph)	59	2031	27	118	1719	35	11	52	12
Turn Type	Prot	NA	Perm	Prot	NA	Perm	NA	Perm	NA
Protected Phases	7	4		3	8		2		6
Permitted Phases			4			2		6	
Detector Phase	7	4	4	3	8	2	2	6	6
Switch Phase									
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	11.0	24.0	24.0	11.0	24.0	23.0	23.0	23.0	23.0
Total Split (s)	14.0	81.0	81.0	16.0	83.0	23.0	23.0	23.0	23.0
Total Split (%)	11.7%	67.5%	67.5%	13.3%	69.2%	19.2%	19.2%	19.2%	19.2%
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.5	1.5	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	5.0	5.0		4.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes				
Recall Mode	None	C-Max	C-Max	None	C-Max	Max	Max	Max	Max
Act Effct Green (s)	7.6	75.1	75.1	9.9	79.8	18.0	18.0		18.5
Actuated g/C Ratio	0.06	0.63	0.63	0.08	0.66	0.15	0.15		0.15
v/c Ratio	0.54	0.94	0.03	0.82	0.77	0.11	0.38		0.55
Control Delay	48.4	28.3	1.8	93.6	17.5	45.2	14.0		45.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0
Total Delay	48.4	28.3	1.8	93.6	17.5	45.2	14.0		45.0
LOS	D	C	A	F	B	D	B		D
Approach Delay		28.5			22.3		20.8		45.0
Approach LOS		C			C		C		D

## Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 0 (0%), Referenced to phase 4:EBT and 8:WBT, Start of Green

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.94

Intersection Signal Delay: 25.9

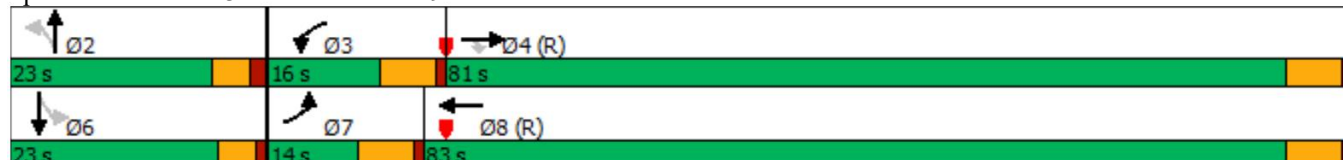
Intersection LOS: C

Intersection Capacity Utilization 95.2%

ICU Level of Service F

Analysis Period (min) 15

Splits and Phases: 3: Zlaten Dr &SH-119


























# HCM 6th Signalized Intersection Summary



















## 3: Zlaten Dr & SH-119

2025 Total PM  
09/14/2022

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	59	2031	27	118	1719	55	35	11	116	52	12	55
Future Volume (veh/h)	59	2031	27	118	1719	55	35	11	116	52	12	55
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	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	1870	1870	1870	1870	1870	1870
Adj FlowRate, veh/h	60	2072	28	120	1754	56	36	11	118	53	12	56
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	77	2494	1112	145	2601	83	407	21	226	94	31	71
Arrive On Green	0.04	0.70	0.70	0.08	0.74	0.74	0.15	0.15	0.15	0.15	0.15	0.15
Sat Flow, veh/h	1781	3554	1585	1781	3515	112	2586	137	1469	330	203	458
Grp Volume(v), veh/h	60	2072	28	120	883	927	36	0	129	121	0	0
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1850	1293	0	1606	991	0	0
Q Serve(g_s), s	4.0	50.0	0.6	8.0	30.8	31.3	0.0	0.0	8.9	6.8	0.0	0.0
Cycle Q Clear(g_c), s	4.0	50.0	0.6	8.0	30.8	31.3	2.2	0.0	8.9	15.6	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.06	1.00		0.91	0.44		0.46
Lane Grp Cap(c), veh/h	77	2494	1112	145	1315	1369	407	0	248	196	0	0
V/C Ratio(X)	0.78	0.83	0.03	0.83	0.67	0.68	0.09	0.00	0.52	0.62	0.00	0.00
Avail Cap(c_a), veh/h	119	2494	1112	148	1315	1369	407	0	248	196	0	0
HCMPlatoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	56.8	12.8	5.4	54.3	8.1	8.1	43.8	0.0	46.7	50.5	0.0	0.0
Incr Delay (d2), s/veh	15.7	3.4	0.0	29.9	2.7	2.7	0.4	0.0	7.6	13.8	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.1	18.7	0.2	4.8	11.2	11.8	0.5	0.0	4.1	4.3	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	72.6	16.2	5.5	84.2	10.8	10.8	44.3	0.0	54.3	64.3	0.0	0.0
LnGrp LOS	E	B	A	F	B	B	D	A	D	E	A	A
Approach Vol, veh/h	2160				1930				165			
Approach Delay, s/veh	17.6				15.4				52.1			
Approach LOS	B				B				D			
Timer - Assigned Phs	2		3	4		6		7	8			
Phs Duration (G+Y+Rc), s	23.5		15.8	90.5		23.5		11.2	95.1			
Change Period (Y+Rc), s	5.0		6.0	6.0		*5		6.0	6.0			
Max Green Setting (Gmax), s	18.0		10.0	75.0		*19		8.0	77.0			
Max Q Clear Time (g_c+H1), s	10.9		10.0	52.0		17.6		6.0	33.3			
Green Ext Time (p_c), s	0.4		0.0	17.9		0.0		0.0	22.5			
Intersection Summary												
HCM6th Ctrl Delay	19.2											
HCM6th LOS	B											
Notes												

# Timings 3: Zlaten Dr & SH-119

2045 Background AM  
09/14/2022

									
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	64	1832	11	68	3030	22	14	64	13
Future Volume (vph)	64	1832	11	68	3030	22	14	64	13
Turn Type	Prot	NA	Perm	Prot	NA	Perm	NA	Perm	NA
Protected Phases	7	4		3	8		2		6
Permitted Phases			4			2		6	
Detector Phase	7	4	4	3	8	2	2	6	6
Switch Phase									
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	11.0	24.0	24.0	11.0	24.0	23.0	23.0	23.0	23.0
Total Split (s)	11.0	82.0	82.0	15.0	86.0	23.0	23.0	23.0	23.0
Total Split (%)	9.2%	68.3%	68.3%	12.5%	71.7%	19.2%	19.2%	19.2%	19.2%
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.5	1.5	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	5.0	5.0		4.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes				
Recall Mode	None	C-Max	C-Max	None	C-Max	Max	Max	Max	Max
Act Effct Green (s)	5.0	79.0	79.0	8.5	80.0	18.0	18.0		18.5
Actuated g/C Ratio	0.04	0.66	0.66	0.07	0.67	0.15	0.15		0.15
v/c Ratio	0.97	0.61	0.01	0.61	1.02	0.08	0.46		0.81
Control Delay	84.0	16.1	0.0	74.8	40.3	44.8	27.0		70.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0
Total Delay	84.0	16.1	0.0	74.8	40.3	44.8	27.0		70.5
LOS	F	B	A	E	D	D	C		E
Approach Delay		18.2			41.0		29.5		70.5
Approach LOS		B			D		C		E

## Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 0 (0%), Referenced to phase 4:EBT and 8:WBT, Start of Green

Natural Cycle: 120

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.02

Intersection Signal Delay: 33.4

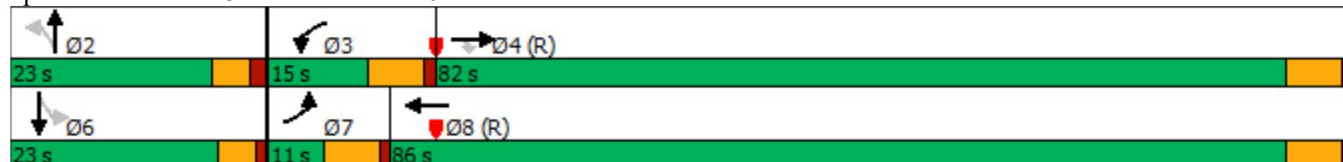
Intersection LOS: C

Intersection Capacity Utilization 88.8%

ICU Level of Service E

Analysis Period (min) 15

## Splits and Phases: 3: Zlaten Dr &SH-119
























# HCM 6th Signalized Intersection Summary

## 3: Zlaten Dr & SH-119



















2045 Background AM

09/14/2022

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	64	1832	11	68	3030	63	22	14	115	64	13	64
Future Volume (veh/h)	64	1832	11	68	3030	63	22	14	115	64	13	64
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj FlowRate, veh/h	71	2036	12	76	3367	70	24	16	128	71	14	71
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	74	4042	1255	97	4141	86	386	28	221	90	27	61
Arrive On Green	0.06	1.00	1.00	0.05	0.80	0.80	0.15	0.15	0.15	0.15	0.15	0.15
Sat Flow, veh/h	1781	5106	1585	1781	5149	106	2547	179	1433	300	172	394
Grp Volume(v), veh/h	71	2036	12	76	2218	1219	24	0	144	156	0	0
Grp Sat Flow(s),veh/h/ln	1781	1702	1585	1781	1702	1851	1273	0	1612	866	0	0
Q Serve(g_s), s	4.8	0.0	0.0	5.1	44.0	45.3	0.0	0.0	10.0	8.5	0.0	0.0
Cycle Q Clear(g_c), s	4.8	0.0	0.0	5.1	44.0	45.3	1.4	0.0	10.0	18.5	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.06	1.00		0.89	0.46		0.46
Lane Grp Cap(c), veh/h	74	4042	1255	97	2737	1489	386	0	249	177	0	0
V/C Ratio(X)	0.96	0.50	0.01	0.79	0.81	0.82	0.06	0.00	0.58	0.88	0.00	0.00
Avail Cap(c_a), veh/h	74	4042	1255	134	2737	1489	386	0	249	177	0	0
HCMPlatoon Ratio	1.33	1.33	1.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	56.6	0.0	0.0	56.0	6.6	6.7	43.5	0.0	47.1	53.7	0.0	0.0
Incr Delay (d2), s/veh	89.4	0.5	0.0	18.5	2.7	5.1	0.3	0.0	9.5	42.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.0	0.2	0.0	2.8	12.6	15.1	0.3	0.0	4.7	6.8	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	145.9	0.5	0.0	74.6	9.3	11.9	43.8	0.0	56.6	95.6	0.0	0.0
LnGrp LOS	F	A	A	E	A	B	D	A	E	F	A	A
Approach Vol, veh/h	2119				3513				168			
Approach Delay, s/veh	5.3				11.6				54.8			
Approach LOS	A				B				D			
Timer - Assigned Phs	2			3		4		6		7		8
Phs Duration (G+Y+Rc), s	23.5			12.5		101.5		23.5		11.0		103.0
Change Period (Y+Rc), s	5.0			6.0		6.0		*5		6.0		6.0
Max Green Setting (Gmax), s	18.0			9.0		76.0		*19		5.0		80.0
Max Q Clear Time (g_c+I1), s	12.0			7.1		2.0		20.5		6.8		47.3
Green Ext Time (p_c), s	0.4			0.0		33.2		0.0		0.0		31.3
Intersection Summary												
HCM6th Ctrl Delay	12.8											
HCM6th LOS	B											
Notes												

# Timings 3: Zlaten Dr & SH-119

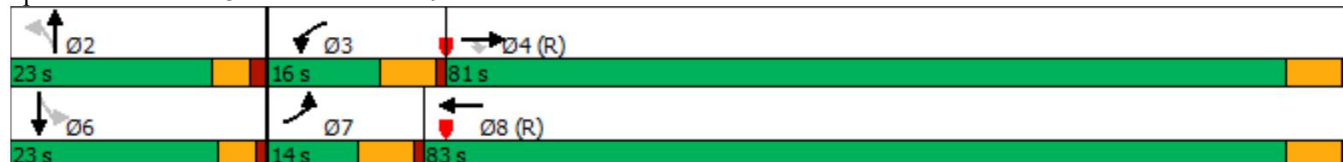
2045 Background PM  
09/14/2022

									
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	59	2893	39	167	2435	52	11	52	12
Future Volume (vph)	59	2893	39	167	2435	52	11	52	12
Turn Type	Prot	NA	Perm	Prot	NA	Perm	NA	Perm	NA
Protected Phases	7	4		3	8		2		6
Permitted Phases			4			2		6	
Detector Phase	7	4	4	3	8	2	2	6	6
Switch Phase									
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	11.0	24.0	24.0	11.0	24.0	23.0	23.0	23.0	23.0
Total Split (s)	14.0	81.0	81.0	16.0	83.0	23.0	23.0	23.0	23.0
Total Split (%)	11.7%	67.5%	67.5%	13.3%	69.2%	19.2%	19.2%	19.2%	19.2%
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.5	1.5	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	5.0	5.0		4.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes				
Recall Mode	None	C-Max	C-Max	None	C-Max	Max	Max	Max	Max
Act Effct Green (s)	7.6	75.0	75.0	10.0	79.8	18.0	18.0		18.5
Actuated g/C Ratio	0.06	0.62	0.62	0.08	0.66	0.15	0.15		0.15
v/c Ratio	0.54	0.93	0.04	1.16	0.75	0.16	0.55		0.69
Control Delay	43.8	26.4	3.4	170.7	16.0	46.0	27.0		56.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0
Total Delay	43.8	26.4	3.4	170.7	16.0	46.0	27.0		56.8
LOS	D	C	A	F	B	D	C		E
Approach Delay		26.4			25.7		31.3		56.8
Approach LOS		C			C		C		E

## Intersection Summary

Cycle Length: 120  
Actuated Cycle Length: 120  
Offset: 0 (0%), Referenced to phase 4:EBT and 8:WBT, Start of Green  
Natural Cycle: 100  
Control Type: Actuated-Coordinated  
Maximum v/c Ratio: 1.16  
Intersection Signal Delay: 26.9  
Intersection LOS: C  
Intersection Capacity Utilization 100.8%  
ICU Level of Service G  
Analysis Period (min) 15

## Splits and Phases: 3: Zlaten Dr &SH-119





























# HCM 6th Signalized Intersection Summary

## 3: Zlaten Dr & SH-119



















2045 Background PM

09/14/2022

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			  		 				 	
Traffic Volume (veh/h)	59	2893	39	167	2435	55	52	11	167	52	12	55
Future Volume (veh/h)	59	2893	39	167	2435	55	52	11	167	52	12	55
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	60	2952	40	170	2485	56	53	11	170	53	12	56
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	77	3893	1209	148	4123	93	378	15	232	72	26	47
Arrive On Green	0.04	0.76	0.76	0.08	0.80	0.80	0.15	0.15	0.15	0.15	0.15	0.15
Sat Flow, veh/h	1781	5106	1585	1781	5138	115	2586	97	1503	185	170	306
Grp Volume(v), veh/h	60	2952	40	170	1643	898	53	0	181	121	0	0
Grp Sat Flow(s),veh/h/ln	1781	1702	1585	1781	1702	1850	1293	0	1600	662	0	0
Q Serve(g_s), s	4.0	39.1	0.7	10.0	22.1	22.4	0.0	0.0	12.9	5.6	0.0	0.0
Cycle Q Clear(g_c), s	4.0	39.1	0.7	10.0	22.1	22.4	3.3	0.0	12.9	18.5	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.06	1.00		0.94	0.44		0.46
Lane Grp Cap(c), veh/h	77	3893	1209	148	2732	1484	378	0	247	145	0	0
V/C Ratio(X)	0.78	0.76	0.03	1.15	0.60	0.61	0.14	0.00	0.73	0.83	0.00	0.00
Avail Cap(c_a), veh/h	119	3893	1209	148	2732	1484	378	0	247	145	0	0
HCMPlatoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	56.8	8.0	3.5	55.0	4.5	4.6	44.3	0.0	48.4	53.3	0.0	0.0
Incr Delay (d2), s/veh	15.7	1.4	0.1	118.2	1.0	1.8	0.8	0.0	17.5	40.4	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.1	12.2	0.2	9.4	6.3	7.2	0.7	0.0	6.4	5.3	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	72.6	9.5	3.5	173.2	5.5	6.4	45.1	0.0	66.0	93.7	0.0	0.0
LnGrp LOS	E	A	A	F	A	A	D	A	E	F	A	A
Approach Vol, veh/h		3052			2711			234			121	
Approach Delay, s/veh		10.6			16.3			61.2			93.7	
Approach LOS		B			B			E			F	
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		23.5	16.0	98.0		23.5	11.2	102.8				
Change Period (Y+Rc), s		5.0	6.0	6.0		*5	6.0	6.0				
Max Green Setting (Gmax), s		18.0	10.0	75.0		*19	8.0	77.0				
Max Q Clear Time (g_c+I1), s		14.9	12.0	41.1		20.5	6.0	24.4				
Green Ext Time (p_c), s		0.3	0.0	30.9		0.0	0.0	37.5				
<b>Intersection Summary</b>												
HCM6th Ctrl Delay			16.7									
HCM6th LOS			B									
<b>Notes</b>												
*HCM6th computational engine requires equal clearance times for the phases crossing the barrier.												

# Timings 3: Zlaten Dr & SH-119

2045 Total AM  
09/14/2022

									
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	64	1870	11	68	3094	22	14	64	13
Future Volume (vph)	64	1870	11	68	3094	22	14	64	13
Turn Type	Prot	NA	Perm	Prot	NA	Perm	NA	Perm	NA
Protected Phases	7	4		3	8		2		6
Permitted Phases			4			2		6	
Detector Phase	7	4	4	3	8	2	2	6	6
Switch Phase									
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	11.0	24.0	24.0	11.0	24.0	23.0	23.0	23.0	23.0
Total Split (s)	11.0	82.0	82.0	15.0	86.0	23.0	23.0	23.0	23.0
Total Split (%)	9.2%	68.3%	68.3%	12.5%	71.7%	19.2%	19.2%	19.2%	19.2%
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.5	1.5	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	5.0	5.0		4.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes				
Recall Mode	None	C-Max	C-Max	None	C-Max	Max	Max	Max	Max
Act Effct Green (s)	5.0	79.0	79.0	8.5	80.0	18.0	18.0		18.5
Actuated g/C Ratio	0.04	0.66	0.66	0.07	0.67	0.15	0.15		0.15
v/c Ratio	0.97	0.62	0.01	0.61	1.04	0.08	0.47		0.81
Control Delay	106.8	19.8	0.0	74.8	47.1	44.8	27.3		70.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0
Total Delay	106.8	19.8	0.0	74.8	47.1	44.8	27.3		70.5
LOS	F	B	A	E	D	D	C		E
Approach Delay		22.5			47.7		29.8		70.5
Approach LOS		C			D		C		E

## Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 0 (0%), Referenced to phase 4:EBT and 8:WBT, Start of Green

Natural Cycle: 120

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.04

Intersection Signal Delay: 38.8

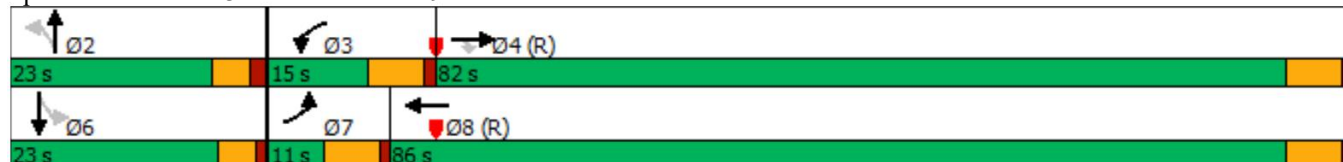
Intersection LOS: D

Intersection Capacity Utilization 90.1%

ICU Level of Service E

Analysis Period (min) 15

## Splits and Phases: 3: Zlaten Dr &SH-119

























# HCM 6th Signalized Intersection Summary

## 3: Zlaten Dr & SH-119
























2045 Total AM

09/14/2022

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	64	1870	11	68	3094	63	22	14	115	64	13	64
Future Volume (veh/h)	64	1870	11	68	3094	63	22	14	115	64	13	64
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	71	2078	12	76	3438	70	24	16	128	71	14	71
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	74	4042	1255	97	4143	84	386	28	221	90	27	61
Arrive On Green	0.06	1.00	1.00	0.05	0.80	0.80	0.15	0.15	0.15	0.15	0.15	0.15
Sat Flow, veh/h	1781	5106	1585	1781	5151	104	2547	179	1433	300	172	394
Grp Volume(v), veh/h	71	2078	12	76	2264	1244	24	0	144	156	0	0
Grp Sat Flow(s),veh/h/ln	1781	1702	1585	1781	1702	1852	1273	0	1612	866	0	0
Q Serve(g_s), s	4.8	0.0	0.0	5.1	46.7	48.1	0.0	0.0	10.0	8.5	0.0	0.0
Cycle Q Clear(g_c), s	4.8	0.0	0.0	5.1	46.7	48.1	1.4	0.0	10.0	18.5	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.06	1.00		0.89	0.46		0.46
Lane Grp Cap(c), veh/h	74	4042	1255	97	2737	1489	386	0	249	177	0	0
V/C Ratio(X)	0.96	0.51	0.01	0.79	0.83	0.84	0.06	0.00	0.58	0.88	0.00	0.00
Avail Cap(c_a), veh/h	74	4042	1255	134	2737	1489	386	0	249	177	0	0
HCMPlatoon Ratio	1.33	1.33	1.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	56.6	0.0	0.0	56.0	6.9	7.0	43.5	0.0	47.1	53.7	0.0	0.0
Incr Delay (d2), s/veh	89.4	0.5	0.0	18.5	3.0	5.7	0.3	0.0	9.5	42.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.0	0.2	0.0	2.8	13.4	16.1	0.3	0.0	4.7	6.8	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	145.9	0.5	0.0	74.6	9.9	12.7	43.8	0.0	56.6	95.6	0.0	0.0
LnGrp LOS	F	A	A	E	A	B	D	A	E	F	A	A
Approach Vol, veh/h		2161			3584			168			156	
Approach Delay, s/veh		5.2			12.2			54.8			95.6	
Approach LOS		A			B			D			F	
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		23.5	12.5	101.5		23.5	11.0	103.0				
Change Period (Y+Rc), s		5.0	6.0	6.0		*5	6.0	6.0				
Max Green Setting (Gmax), s		18.0	9.0	76.0		*19	5.0	80.0				
Max Q Clear Time (g_c+H1), s		12.0	7.1	2.0		20.5	6.8	50.1				
Green Ext Time (p_c), s		0.4	0.0	34.6		0.0	0.0	28.9				
<b>Intersection Summary</b>												
HCM6th Ctrl Delay			13.1									
HCM6th LOS			B									
<b>Notes</b>												
*HCM6th computational engine requires equal clearance times for the phases crossing the barrier.												

# Timings 3: Zlaten Dr & SH-119

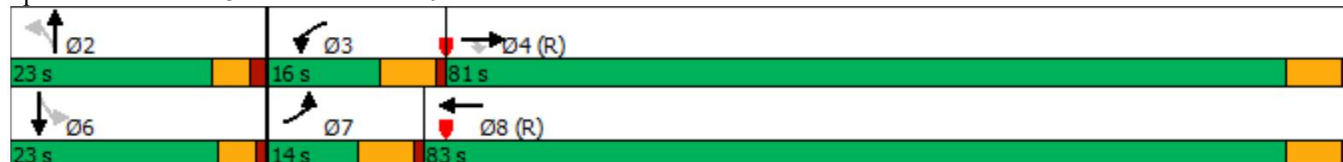
2045 Total PM  
09/14/2022

									
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations		  			  	 			
Traffic Volume (vph)	59	2962	39	167	2491	52	11	52	12
Future Volume (vph)	59	2962	39	167	2491	52	11	52	12
Turn Type	Prot	NA	Perm	Prot	NA	Perm	NA	Perm	NA
Protected Phases	7	4		3	8		2		6
Permitted Phases			4			2		6	
Detector Phase	7	4	4	3	8	2	2	6	6
Switch Phase									
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	11.0	24.0	24.0	11.0	24.0	23.0	23.0	23.0	23.0
Total Split (s)	14.0	81.0	81.0	16.0	83.0	23.0	23.0	23.0	23.0
Total Split (%)	11.7%	67.5%	67.5%	13.3%	69.2%	19.2%	19.2%	19.2%	19.2%
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.5	1.5	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	5.0	5.0		4.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes				
Recall Mode	None	C-Max	C-Max	None	C-Max	Max	Max	Max	Max
Act Effct Green (s)	7.6	75.0	75.0	10.0	79.8	18.0	18.0		18.5
Actuated g/C Ratio	0.06	0.62	0.62	0.08	0.66	0.15	0.15		0.15
v/c Ratio	0.54	0.95	0.04	1.16	0.77	0.16	0.55		0.69
Control Delay	44.1	27.4	0.8	170.7	16.5	46.0	27.0		56.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0
Total Delay	44.1	27.4	0.8	170.7	16.5	46.0	27.0		56.8
LOS	D	C	A	F	B	D	C		E
Approach Delay		27.4			26.0		31.3		56.8
Approach LOS		C			C		C		E

## Intersection Summary

Cycle Length: 120  
Actuated Cycle Length: 120  
Offset: 0 (0%), Referenced to phase 4:EBT and 8:WBT, Start of Green  
Natural Cycle: 110  
Control Type: Actuated-Coordinated  
Maximum v/c Ratio: 1.16  
Intersection Signal Delay: 27.5  
Intersection LOS: C  
Intersection Capacity Utilization 102.2%  
ICU Level of Service G  
Analysis Period (min) 15

## Splits and Phases: 3: Zlaten Dr &SH-119























# HCM 6th Signalized Intersection Summary

## 3: Zlaten Dr & SH-119

2045 Total PM

09/14/2022

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	59	2962	39	167	2491	55	52	11	167	52	12	55
Future Volume (veh/h)	59	2962	39	167	2491	55	52	11	167	52	12	55
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj FlowRate, veh/h	60	3022	40	170	2542	56	53	11	170	53	12	56
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	77	3893	1209	148	4126	90	378	15	232	72	26	47
Arrive On Green	0.04	0.76	0.76	0.08	0.80	0.80	0.15	0.15	0.15	0.15	0.15	0.15
Sat Flow, veh/h	1781	5106	1585	1781	5141	113	2586	97	1503	185	170	306
Grp Volume(v), veh/h	60	3022	40	170	1679	919	53	0	181	121	0	0
Grp Sat Flow(s),veh/h/ln	1781	1702	1585	1781	1702	1850	1293	0	1600	662	0	0
Q Serve(g_s), s	4.0	41.3	0.7	10.0	23.1	23.4	0.0	0.0	12.9	5.6	0.0	0.0
Cycle Q Clear(g_c), s	4.0	41.3	0.7	10.0	23.1	23.4	3.3	0.0	12.9	18.5	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.06	1.00		0.94	0.44		0.46
Lane Grp Cap(c), veh/h	77	3893	1209	148	2732	1485	378	0	247	145	0	0
V/C Ratio(X)	0.78	0.78	0.03	1.15	0.61	0.62	0.14	0.00	0.73	0.83	0.00	0.00
Avail Cap(c_a), veh/h	119	3893	1209	148	2732	1485	378	0	247	145	0	0
HCMPlatoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	56.8	8.3	3.5	55.0	4.6	4.7	44.3	0.0	48.4	53.3	0.0	0.0
Incr Delay (d2), s/veh	15.7	1.6	0.1	118.2	1.0	1.9	0.8	0.0	17.5	40.4	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.1	13.0	0.2	9.4	6.6	7.6	0.7	0.0	6.4	5.3	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	72.6	9.9	3.5	173.2	5.7	6.6	45.1	0.0	66.0	93.7	0.0	0.0
LnGrp LOS	E	A	A	F	A	A	D	A	E	F	A	A
Approach Vol, veh/h	3122			2768			234			121		
Approach Delay, s/veh	11.0			16.3			61.2			93.7		
Approach LOS	B			B			E			F		
Timer - Assigned Phs	2		3	4		6		7	8			
Phs Duration (G+Y+Rc), s	23.5		16.0	98.0		23.5		11.2	102.8			
Change Period (Y+Rc), s	5.0		6.0	6.0		*5		6.0	6.0			
Max Green Setting (Gmax), s	18.0		10.0	75.0		*19		8.0	77.0			
Max Q Clear Time (g_c+I1), s	14.9		12.0	43.3		20.5		6.0	25.4			
Green Ext Time (p_c), s	0.3		0.0	29.4		0.0		0.0	38.0			
Intersection Summary												
HCM6th Ctrl Delay	16.8											
HCM6th LOS	B											
Notes												

Intersection						
Int Delay, s/veh	6.8					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	W		T			T
Traffic Vol, veh/h	39	13	3	23	83	7
Future Vol, veh/h	39	13	3	23	83	7
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	81	81	81	81	81	81
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	48	16	4	28	102	9
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	231	18	0	0	32	0
Stage 1	18	-	-	-	-	-
Stage 2	213	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	757	1061	-	-	1580	-
Stage 1	1005	-	-	-	-	-
Stage 2	823	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	708	1061	-	-	1580	-
Mov Cap-2 Maneuver	708	-	-	-	-	-
Stage 1	1005	-	-	-	-	-
Stage 2	770	-	-	-	-	-
Approach	WB	NB		SB		
HCMControl Delay, s	10.1	0		6.9		
HCMLOS	B					
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT		
Capacity (veh/h)	-	-	772	1580	-	
HCM Lane V/C Ratio	-	-	0.083	0.065	-	
HCM Control Delay (s)	-	-	10.1	7.4	0	
HCM Lane LOS	-	-	B	A	A	
HCM 95th %tile Q(veh)	-	-	0.3	0.2	-	

Intersection						
Int Delay, s/veh	8.2					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	W		T			T
Traffic Vol, veh/h	117	37	13	57	136	8
Future Vol, veh/h	117	37	13	57	136	8
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	87	87	87	87	87	87
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	134	43	15	66	156	9
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	369	48	0	0	81	0
Stage 1	48	-	-	-	-	-
Stage 2	321	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	631	1021	-	-	1517	-
Stage 1	974	-	-	-	-	-
Stage 2	735	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	566	1021	-	-	1517	-
Mov Cap-2 Maneuver	566	-	-	-	-	-
Stage 1	974	-	-	-	-	-
Stage 2	659	-	-	-	-	-
Approach	WB	NB		SB		
HCMControl Delay, s	12.9	0		7.2		
HCMLOS	B					
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT		
Capacity (veh/h)	-	-	634	1517	-	
HCM Lane V/C Ratio	-	-	0.279	0.103	-	
HCM Control Delay (s)	-	-	12.9	7.6	0	
HCM Lane LOS	-	-	B	A	A	
HCM 95th %tile Q(veh)	-	-	1.1	0.3	-	

Intersection						
Int Delay, s/veh	5.5					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	W		T			T
Traffic Vol, veh/h	39	13	32	23	83	23
Future Vol, veh/h	39	13	32	23	83	23
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	81	81	81	81	81	81
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	48	16	40	28	102	28
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	286	54	0	0	68	0
Stage 1	54	-	-	-	-	-
Stage 2	232	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	704	1013	-	-	1533	-
Stage 1	969	-	-	-	-	-
Stage 2	807	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	656	1013	-	-	1533	-
Mov Cap-2 Maneuver	656	-	-	-	-	-
Stage 1	969	-	-	-	-	-
Stage 2	752	-	-	-	-	-
Approach	WB	NB		SB		
HCMControl Delay, s	10.5	0		5.9		
HCMLOS	B					
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT		
Capacity (veh/h)	-	-	719	1533	-	
HCM Lane V/C Ratio	-	-	0.089	0.067	-	
HCMControl Delay (s)	-	-	10.5	7.5	0	
HCM Lane LOS	-	-	B	A	A	
HCM95th %tile Q(veh)	-	-	0.3	0.2	-	



Intersection						
Int Delay, s/veh	7.3					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	W		T			T
Traffic Vol, veh/h	117	37	34	57	136	60
Future Vol, veh/h	117	37	34	57	136	60
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	87	87	87	87	87	87
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	134	43	39	66	156	69
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	453	72	0	0	105	0
Stage 1	72	-	-	-	-	-
Stage 2	381	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	565	990	-	-	1486	-
Stage 1	951	-	-	-	-	-
Stage 2	691	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	503	990	-	-	1486	-
Mov Cap-2 Maneuver	503	-	-	-	-	-
Stage 1	951	-	-	-	-	-
Stage 2	616	-	-	-	-	-
Approach	WB	NB		SB		
HCMControl Delay, s	14.1	0		5.3		
HCMLOS	B					
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT		
Capacity (veh/h)	-	-	570	1486	-	
HCM Lane V/C Ratio	-	-	0.311	0.105	-	
HCMControl Delay (s)	-	-	14.1	7.7	0	
HCM Lane LOS	-	-	B	A	A	
HCM95th %tile Q(veh)	-	-	1.3	0.4	-	

HCM 6th TWSC  
4: Timm Way & South Access/Retail Access

2025 Total AM  
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Intersection												
Int Delay, s/veh	4.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	19	0	28	39	0	13	10	38	23	83	38	75
Future Vol, veh/h	19	0	28	39	0	13	10	38	23	83	38	75
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
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	81	92	81	92	81	81	81	81	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	21	0	30	48	0	16	11	47	28	102	47	82
Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	383	389	88	390	416	61	129	0	0	75	0	0
Stage 1	292	292	-	83	83	-	-	-	-	-	-	-
Stage 2	91	97	-	307	333	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	575	546	970	569	527	1004	1457	-	-	1524	-	-
Stage 1	716	671	-	925	826	-	-	-	-	-	-	-
Stage 2	916	815	-	703	644	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
MovCap-1 Maneuver	531	502	970	517	485	1004	1457	-	-	1524	-	-
MovCap-2 Maneuver	531	502	-	517	485	-	-	-	-	-	-	-
Stage 1	710	622	-	918	819	-	-	-	-	-	-	-
Stage 2	894	808	-	631	597	-	-	-	-	-	-	-
Approach	EB		WB		NB		SB					
HCMControl Delay, s	10.3		11.9		0.9		3.3					
HCMLOS	B		B									
Minor Lane/Major Mvmt	NBL	NBT	NBREBLn1	WBLn1	SBL	SBT	SBR					
Capacity (veh/h)	1457	-	-	727	588	1524	-	-				
HCMLane V/C Ratio	0.007	-	-	0.07	0.109	0.067	-	-				
HCMControl Delay (s)	7.5	0	-	10.3	11.9	7.5	0	-				
HCMLane LOS	A	A	-	B	B	A	A	-				
HCM95th %tile O(veh)	0	-	-	0.2	0.4	0.2	-	-				

HCM 6th TWSC  
4: Timm Way & South Access/Retail Access

2025 Total PM  
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Intersection												
Int Delay, s/veh	8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	26	0	47	117	0	37	8	40	57	136	81	62
Future Vol, veh/h	26	0	47	117	0	37	8	40	57	136	81	62
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	87	87	87	87	87	87	87	87	87	87	87	87
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	30	0	54	134	0	43	9	46	66	156	93	71
Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	560	571	129	565	573	79	164	0	0	112	0	0
Stage 1	441	441	-	97	97	-	-	-	-	-	-	-
Stage 2	119	130	-	468	476	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	439	431	921	436	430	981	1414	-	-	1478	-	-
Stage 1	595	577	-	910	815	-	-	-	-	-	-	-
Stage 2	885	789	-	575	557	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
MovCap-1 Maneuver	380	378	921	371	377	981	1414	-	-	1478	-	-
MovCap-2 Maneuver	380	378	-	371	377	-	-	-	-	-	-	-
Stage 1	591	509	-	904	809	-	-	-	-	-	-	-
Stage 2	841	783	-	478	492	-	-	-	-	-	-	-
Approach	EB		WB		NB		SB					
HCMControl Delay, s	11.8		18.8		0.6		3.8					
HCMLOS	B		C									
Minor Lane/Major Mvmt	NBL		NBT	NBREBLn1		WBLn1	SBL	SBT	SBR			
Capacity (veh/h)	1414		-	-	611	436	1478	-	-			
HCMLane V/C Ratio	0.007		-	-	0.137	0.406	0.106	-	-			
HCMControl Delay (s)	7.6		0	-	11.8	18.8	7.7	0	-			
HCMLane LOS	A		A	-	B	C	A	A	-			
HCM95th %tile O(veh)	0		-	-	0.5	1.9	0.4	-	-			

Intersection						
Int Delay, s/veh	5.2					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	W		T			T
Traffic Vol, veh/h	39	13	34	23	83	27
Future Vol, veh/h	39	13	34	23	83	27
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	42	14	37	25	90	29
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	259	50	0	0	62	0
Stage 1	50	-	-	-	-	-
Stage 2	209	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	730	1018	-	-	1541	-
Stage 1	972	-	-	-	-	-
Stage 2	826	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	687	1018	-	-	1541	-
Mov Cap-2 Maneuver	687	-	-	-	-	-
Stage 1	972	-	-	-	-	-
Stage 2	777	-	-	-	-	-
Approach	WB	NB		SB		
HCMControl Delay, s	10.2	0		5.6		
HCMLOS	B					
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT		
Capacity (veh/h)	-	-	748	1541	-	
HCM Lane V/C Ratio	-	-	0.076	0.059	-	
HCM Control Delay (s)	-	-	10.2	7.5	0	
HCM Lane LOS	-	-	B	A	A	
HCM 95th %tile Q(veh)	-	-	0.2	0.2	-	

Intersection						
Int Delay, s/veh	7					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	117	37	40	57	136	65
Future Vol, veh/h	117	37	40	57	136	65
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	127	40	43	62	148	71
Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	441	74	0	0	105	0
Stage 1	74	-	-	-	-	-
Stage 2	367	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	574	988	-	-	1486	-
Stage 1	949	-	-	-	-	-
Stage 2	701	-	-	-	-	-
Platoon blocked, %			-	-		-
MovCap-1 Maneuver	514	988	-	-	1486	-
MovCap-2 Maneuver	514	-	-	-	-	-
Stage 1	949	-	-	-	-	-
Stage 2	628	-	-	-	-	-
Approach	WB		NB		SB	
HCMControl Delay, s	13.7		0		5.2	
HCMLOS	B					
Minor Lane/Major Mvmt	NBT		NBRWBLn1		SBL	SBT
Capacity (veh/h)	-		-		581	1486
HCMLane V/C Ratio	-		-		0.288	0.099
HCMControl Delay (s)	-		-		13.7	7.7
HCMLane LOS	-		-		B	A
HCM95th %tile O(veh)	-		-		1.2	0.3

HCM 6th TWSC  
4: Timm Way & South Access/Retail Access

2045 Total AM  
09/26/2023









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	19	0	28	39	0	13	10	40	23	83	42	75
Future Vol, veh/h	19	0	28	39	0	13	10	40	23	83	42	75
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
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, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	21	0	30	42	0	14	11	43	25	90	46	82
Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	352	357	87	360	386	56	128	0	0	68	0	0
Stage 1	267	267	-	78	78	-	-	-	-	-	-	-
Stage 2	85	90	-	282	308	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	603	569	971	596	548	1011	1458	-	-	1533	-	-
Stage 1	738	688	-	931	830	-	-	-	-	-	-	-
Stage 2	923	820	-	725	660	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
MovCap-1 Maneuver	562	529	971	546	509	1011	1458	-	-	1533	-	-
MovCap-2 Maneuver	562	529	-	546	509	-	-	-	-	-	-	-
Stage 1	732	644	-	924	823	-	-	-	-	-	-	-
Stage 2	903	813	-	657	618	-	-	-	-	-	-	-
Approach	EB		WB		NB		SB					
HCMControl Delay, s	10.2		11.4		1		3.1					
HCMLOS	B		B									
Minor Lane/Major Mvmt	NBL	NBT	NBREBLn1	WBLn1	SBL	SBT	SBR					
Capacity (veh/h)	1458	-	-	750	617	1533	-	-				
HCMLane V/C Ratio	0.007	-	-	0.068	0.092	0.059	-	-				
HCMControl Delay (s)	7.5	0	-	10.2	11.4	7.5	0	-				
HCMLane LOS	A	A	-	B	B	A	A	-				
HCM95th %tile Q(veh)	0	-	-	0.2	0.3	0.2	-	-				



HCM 6th TWSC  
4: Timm Way & South Access/Retail Access









2045 Total PM  
09/26/2023

Intersection												
Int Delay, s/veh	7.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	26	0	47	117	0	37	8	46	57	136	86	62
Future Vol, veh/h	26	0	47	117	0	37	8	46	57	136	86	62
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
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, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	28	0	51	127	0	40	9	50	62	148	93	67
Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	542	553	127	547	555	81	160	0	0	112	0	0
Stage 1	423	423	-	99	99	-	-	-	-	-	-	-
Stage 2	119	130	-	448	456	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	451	441	923	448	440	979	1419	-	-	1478	-	-
Stage 1	609	588	-	907	813	-	-	-	-	-	-	-
Stage 2	885	789	-	590	568	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
MovCap-1 Maneuver	394	389	923	385	389	979	1419	-	-	1478	-	-
MovCap-2 Maneuver	394	389	-	385	389	-	-	-	-	-	-	-
Stage 1	605	523	-	901	807	-	-	-	-	-	-	-
Stage 2	843	783	-	495	505	-	-	-	-	-	-	-
Approach	EB		WB		NB		SB					
HCMControl Delay, s	11.6		17.6		0.5		3.7					
HCMLOS	B		C									
Minor Lane/Major Mvmt	NBL		NBT	NBREBLn1		WBLn1	SBL	SBT	SBR			
Capacity (veh/h)	1419		-	-	624	451	1478	-	-			
HCMLane V/C Ratio	0.006		-	-	0.127	0.371	0.1	-	-			
HCMControl Delay (s)	7.6		0	-	11.6	17.6	7.7	0	-			
HCMLane LOS	A		A	-	B	C	A	A	-			
HCM95th %tile O(veh)	0		-	-	0.4	1.7	0.3	-	-			

Intersection												
Int Delay, s/veh	2.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	19	1	14	40	3	125	6	438	15	38	350	10
Future Vol, veh/h	19	1	14	40	3	125	6	438	15	38	350	10
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	150	-	0	225	-	225	350	-	0
Veh in Median Storage, #	-	1	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	20	1	15	43	3	134	6	471	16	41	376	11
Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	707	957	376	963	960	244	387	0	0	487	0	0
Stage 1	458	458	-	491	491	-	-	-	-	-	-	-
Stage 2	249	499	-	472	469	-	-	-	-	-	-	-
Critical Hdwy	7.33	6.53	6.23	7.33	6.53	6.93	4.13	-	-	4.13	-	-
Critical Hdwy Stg 1	6.13	5.53	-	6.53	5.53	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.53	5.53	-	6.13	5.53	-	-	-	-	-	-	-
Follow-up Hdwy	3.519	4.019	3.319	3.519	4.019	3.319	2.219	-	-	2.219	-	-
Pot Cap-1 Maneuver	336	257	670	222	256	757	1170	-	-	1074	-	-
Stage 1	582	566	-	529	547	-	-	-	-	-	-	-
Stage 2	734	543	-	572	560	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	265	246	670	209	245	757	1170	-	-	1074	-	-
Mov Cap-2 Maneuver	380	349	-	337	358	-	-	-	-	-	-	-
Stage 1	579	544	-	526	544	-	-	-	-	-	-	-
Stage 2	597	540	-	537	539	-	-	-	-	-	-	-
Approach	EB		WB		NB		SB					
HCMControl Delay, s	10.5		12.4		0.1		0.8					
HCMLOS	B		B									
Minor Lane/Major Mvmt	NBL	NBT	NBREBLn1	WBLn1	WBLn2	SBL	SBT	SBR				
Capacity (veh/h)	1170	-	-	670	337	757	1074	-	-			
HCMLane V/C Ratio	0.006	-	-	0.022	0.128	0.178	0.038	-	-			
HCMControl Delay (s)	8.1	-	-	10.5	17.2	10.8	8.5	-	-			
HCMLane LOS	A	-	-	B	C	B	A	-	-			
HCM95th %tile Q(veh)	0	-	-	0.1	0.4	0.6	0.1	-	-			

Intersection												
Int Delay, s/veh	3.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations			↗	↖		↗	↖	↕		↖	↕	↗
Traffic Vol, veh/h	5	8	15	48	7	146	21	577	53	116	419	19
Future Vol, veh/h	5	8	15	48	7	146	21	577	53	116	419	19
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	150	-	0	225	-	225	350	-	0
Veh in Median Storage, #	-	1	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	97	97	97	97	97	97	97	97	97	97	97	97
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	5	8	15	49	7	151	22	595	55	120	432	20
Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	1017	1366	432	1361	1359	325	452	0	0	650	0	0
Stage 1	672	672	-	667	667	-	-	-	-	-	-	-
Stage 2	345	694	-	694	692	-	-	-	-	-	-	-
Critical Hdwy	7.33	6.53	6.23	7.33	6.53	6.93	4.13	-	-	4.13	-	-
Critical Hdwy Stg 1	6.13	5.53	-	6.53	5.53	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.53	5.53	-	6.13	5.53	-	-	-	-	-	-	-
Follow-up Hdwy	3.519	4.019	3.319	3.519	4.019	3.319	2.219	-	-	2.219	-	-
Pot Cap-1 Maneuver	204	147	623	116	148	671	1107	-	-	934	-	-
Stage 1	444	454	-	415	456	-	-	-	-	-	-	-
Stage 2	645	443	-	432	444	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
MovCap-1 Maneuver	137	126	623	98	127	671	1107	-	-	934	-	-
MovCap-2 Maneuver	242	216	-	213	241	-	-	-	-	-	-	-
Stage 1	435	396	-	407	447	-	-	-	-	-	-	-
Stage 2	482	434	-	360	387	-	-	-	-	-	-	-
Approach	EB		WB		NB			SB				
HCMControl Delay, s	10.9		15.6		0.3			2				
HCMLOS	B		C									
Minor Lane/Major Mvmt	NBL	NBT	NBREBLn1WBLn1WBLn2	SBL	SBT	SBR						
Capacity (veh/h)	1107	-	- 623 213 671 934	-	-	-						
HCMLane V/C Ratio	0.02	-	- 0.025 0.232 0.224 0.128	-	-	-						
HCMControl Delay (s)	8.3	-	- 10.9 26.9 11.9 9.4	-	-	-						
HCMLane LOS	A	-	- B D B A	-	-	-						
HCM95th %tile O(veh)	0.1	-	- 0.1 0.9 0.9 0.4	-	-	-						

Intersection												
Int Delay, s/veh	3.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations			↗	↖		↗	↖	↕		↖	↕	↗
Traffic Vol, veh/h	20	4	15	59	11	218	6	470	27	65	391	11
Future Vol, veh/h	20	4	15	59	11	218	6	470	27	65	391	11
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	150	-	0	225	-	225	350	-	0
Veh in Median Storage, #	-	1	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	22	4	16	63	12	234	6	505	29	70	420	12
Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	831	1106	420	1108	1104	267	432	0	0	534	0	0
Stage 1	560	560	-	532	532	-	-	-	-	-	-	-
Stage 2	271	546	-	576	572	-	-	-	-	-	-	-
Critical Hdwy	7.33	6.53	6.23	7.33	6.53	6.93	4.13	-	-	4.13	-	-
Critical Hdwy Stg 1	6.13	5.53	-	6.53	5.53	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.53	5.53	-	6.13	5.53	-	-	-	-	-	-	-
Follow-up Hdwy	3.519	4.019	3.319	3.519	4.019	3.319	2.219	-	-	2.219	-	-
Pot Cap-1 Maneuver	275	210	632	175	210	732	1126	-	-	1032	-	-
Stage 1	512	510	-	500	525	-	-	-	-	-	-	-
Stage 2	712	517	-	502	503	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
MovCap-1 Maneuver	172	195	632	159	195	732	1126	-	-	1032	-	-
MovCap-2 Maneuver	281	298	-	287	312	-	-	-	-	-	-	-
Stage 1	509	475	-	498	522	-	-	-	-	-	-	-
Stage 2	471	514	-	452	469	-	-	-	-	-	-	-
Approach	EB		WB		NB		SB					
HCMControl Delay, s	10.8		14.1		0.1		1.2					
HCMLOS	B		B									
Minor Lane/Major Mvmt	NBL	NBT	NBREBLn1	WBLn1	WBLn2	SBL	SBT	SBR				
Capacity (veh/h)	1126	-	-	632	287	732	1032	-	-			
HCMLane V/C Ratio	0.006	-	-	0.026	0.221	0.32	0.068	-	-			
HCMControl Delay (s)	8.2	-	-	10.8	21.1	12.2	8.7	-	-			
HCMLane LOS	A	-	-	B	C	B	A	-	-			
HCM95th %tile O(veh)	0	-	-	0.1	0.8	1.4	0.2	-	-			

Intersection												
Int Delay, s/veh	5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	5	16	16	63	12	205	22	632	72	185	460	20
Future Vol, veh/h	5	16	16	63	12	205	22	632	72	185	460	20
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	150	-	0	225	-	225	350	-	0
Veh in Median Storage, #	-	1	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	97	97	97	97	97	97	97	97	97	97	97	97
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	5	16	16	65	12	211	23	652	74	191	474	21
Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	1234	1628	474	1618	1612	363	495	0	0	726	0	0
Stage 1	856	856	-	735	735	-	-	-	-	-	-	-
Stage 2	378	772	-	883	877	-	-	-	-	-	-	-
Critical Hdwy	7.33	6.53	6.23	7.33	6.53	6.93	4.13	-	-	4.13	-	-
Critical Hdwy Stg 1	6.13	5.53	-	6.53	5.53	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.53	5.53	-	6.13	5.53	-	-	-	-	-	-	-
Follow-up Hdwy	3.519	4.019	3.319	3.519	4.019	3.319	2.219	-	-	2.219	-	-
Pot Cap-1 Maneuver	143	101	590	76	104	635	1067	-	-	875	-	-
Stage 1	352	373	-	378	425	-	-	-	-	-	-	-
Stage 2	616	408	-	340	365	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
MovCap-1 Maneuver	74	77	590	~ 55	80	635	1067	-	-	875	-	-
MovCap-2 Maneuver	146	145	-	149	181	-	-	-	-	-	-	-
Stage 1	344	292	-	370	416	-	-	-	-	-	-	-
Stage 2	390	399	-	244	285	-	-	-	-	-	-	-
Approach	EB		WB		NB		SB					
HCMControl Delay, s	11.3		21.3		0.3		2.9					
HCMLOS	B		C									
Minor Lane/Major Mvmt	NBL	NBT	NBREBLn1	WBLn1	WBLn2	SBL	SBT	SBR				
Capacity (veh/h)	1067	-	-	590	149	635	875	-	-			
HCMLane V/C Ratio	0.021	-	-	0.028	0.436	0.333	0.218	-	-			
HCMControl Delay (s)	8.4	-	-	11.3	46.6	13.5	10.3	-	-			
HCMLane LOS	A	-	-	B	E	B	B	-	-			
HCM95th %tile Q(veh)	0.1	-	-	0.1	2	1.5	0.8	-	-			
Notes												
~: Volume exceeds capacity    \$: Delay exceeds 300s    +: Computation Not Defined    *: All major volume in platoon												

# Timings 5: County Line Rd & Zlaten Dr

2025 Background AM - Improved

09/14/2022

	→	↖	←	↗	↖	↑	↘	↓	↗
Lane Group	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations	↕	↖	↗	↗	↖	↕	↖	↗	↗
Traffic Volume (vph)	4	59	11	218	6	470	65	391	11
Future Volume (vph)	4	59	11	218	6	470	65	391	11
Turn Type	NA	Split	NA	Perm	pm+pt	NA	pm+pt	NA	Perm
Protected Phases	4	8	8		5	2	1	6	
Permitted Phases				8	2		6		6
Detector Phase	4	8	8	8	5	2	1	6	6
Switch Phase									
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	22.5	22.5	22.5	22.5	9.5	22.5	9.5	22.5	22.5
Total Split (s)	24.0	29.0	29.0	29.0	10.0	55.0	12.0	57.0	57.0
Total Split (%)	20.0%	24.2%	24.2%	24.2%	8.3%	45.8%	10.0%	47.5%	47.5%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag					Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?					Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	C-Max	None	C-Max	C-Max
Act Effct Green (s)	7.5	10.1	10.1	10.1	86.1	81.5	90.5	88.8	88.8
Actuated g/C Ratio	0.06	0.08	0.08	0.08	0.72	0.68	0.75	0.74	0.74
v/c Ratio	0.34	0.42	0.08	0.67	0.01	0.22	0.11	0.30	0.01
Control Delay	44.6	59.6	49.3	16.5	5.8	9.2	1.5	4.0	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	44.6	59.6	49.3	16.5	5.8	9.2	1.5	4.0	0.0
LOS	D	E	D	B	A	A	A	A	A
Approach Delay	44.6		26.5			9.2		3.6	
Approach LOS	D		C			A		A	

## Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 0 (0%), Referenced to phase 2:NBTLand 6:SBTL, Start of Green

Natural Cycle: 80

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.67

Intersection Signal Delay: 12.1

Intersection LOS: B

Intersection Capacity Utilization 44.9%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 5: County Line Rd & Zlaten Dr

↖ Ø1	↗ Ø2 (R)	↗ Ø4	↖ Ø8
12 s	55 s	24 s	29 s
↖ Ø5	↗ Ø6 (R)		
10 s	57 s		

























# HCM 6th Signalized Intersection Summary

## 5: County Line Rd & Zlaten Dr

2025 Background AM - Improved

09/14/2022

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	20	4	15	59	11	218	6	470	27	65	391	11
Future Volume (veh/h)	20	4	15	59	11	218	6	470	27	65	391	11
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	22	4	16	63	12	234	6	505	29	70	420	12
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	28	5	21	294	309	262	593	2103	121	605	1207	1023
Arrive On Green	0.03	0.03	0.03	0.17	0.17	0.17	0.01	0.62	0.62	0.04	0.65	0.65
Sat Flow, veh/h	895	163	651	1781	1870	1585	1781	3416	196	1781	1870	1585
Grp Volume(v), veh/h	42	0	0	63	12	234	6	262	272	70	420	12
Grp Sat Flow(s),veh/h/ln	1708	0	0	1781	1870	1585	1781	1777	1835	1781	1870	1585
Q Serve(g_s), s	2.9	0.0	0.0	3.7	0.6	17.3	0.2	8.0	8.0	1.7	12.3	0.3
Cycle Q Clear(g_c), s	2.9	0.0	0.0	3.7	0.6	17.3	0.2	8.0	8.0	1.7	12.3	0.3
Prop In Lane	0.52		0.38	1.00		1.00	1.00		0.11	1.00		1.00
Lane Grp Cap(c), veh/h	54	0	0	294	309	262	593	1094	1129	605	1207	1023
V/C Ratio(X)	0.78	0.00	0.00	0.21	0.04	0.89	0.01	0.24	0.24	0.12	0.35	0.01
Avail Cap(c_a), veh/h	278	0	0	364	382	324	661	1094	1129	649	1207	1023
HCMPlatoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95
Uniform Delay (d), s/veh	57.7	0.0	0.0	43.3	42.1	49.0	8.9	10.4	10.4	7.5	9.7	7.6
Incr Delay (d2), s/veh	20.8	0.0	0.0	0.4	0.1	22.2	0.0	0.5	0.5	0.1	0.8	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	0.0	0.0	1.7	0.3	8.5	0.1	3.2	3.3	0.6	5.1	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	78.5	0.0	0.0	43.7	42.1	71.3	8.9	10.9	10.9	7.6	10.5	7.6
LnGrp LOS	E	A	A	D	D	E	A	B	B	A	B	A
Approach Vol, veh/h		42			309			540			502	
Approach Delay, s/veh		78.5			64.5			10.9			10.0	
Approach LOS		E			E			B			B	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	9.0	78.4		8.3	5.4	82.0		24.3				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	7.5	50.5		19.5	5.5	52.5		24.5				
Max Q Clear Time (g_c+H1), s	3.7	10.0		4.9	2.2	14.3		19.3				
Green Ext Time (p_c), s	0.0	3.6		0.1	0.0	2.9		0.5				
<b>Intersection Summary</b>												
HCM6th Ctrl Delay				24.5								
HCM6th LOS				C								

# Timings 5: County Line Rd & Zlaten Dr

2025 Background PM - Improved

09/14/2022

	→	↖	←	↗	↖	↑	↘	↓	↗
Lane Group	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations	↕	↖	↑	↗	↖	↕	↖	↑	↗
Traffic Volume (vph)	16	63	12	205	22	632	185	460	20
Future Volume (vph)	16	63	12	205	22	632	185	460	20
Turn Type	NA	Split	NA	Perm	pm+pt	NA	pm+pt	NA	Perm
Protected Phases	4	8	8		5	2	1	6	
Permitted Phases				8	2		6		6
Detector Phase	4	8	8	8	5	2	1	6	6
Switch Phase									
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	22.5	22.5	22.5	22.5	9.5	22.5	9.5	22.5	22.5
Total Split (s)	23.0	26.0	26.0	26.0	10.0	49.0	22.0	61.0	61.0
Total Split (%)	19.2%	21.7%	21.7%	21.7%	8.3%	40.8%	18.3%	50.8%	50.8%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag					Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?					Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	C-Max	None	C-Max	C-Max
Act Effct Green (s)	7.2	10.1	10.1	10.1	85.6	79.6	93.0	86.8	86.8
Actuated g/C Ratio	0.06	0.08	0.08	0.08	0.71	0.66	0.78	0.72	0.72
v/c Ratio	0.31	0.44	0.08	0.65	0.03	0.31	0.34	0.35	0.02
Control Delay	42.0	60.4	49.4	16.4	5.5	10.6	6.7	5.3	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	42.0	60.4	49.4	16.4	5.5	10.6	6.7	5.3	0.1
LOS	D	E	D	B	A	B	A	A	A
Approach Delay	42.0		27.7			10.4		5.5	
Approach LOS	D		C			B		A	

## Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 0 (0%), Referenced to phase 2:NBTLand 6:SBTL, Start of Green

Natural Cycle: 80

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.65

Intersection Signal Delay: 12.0

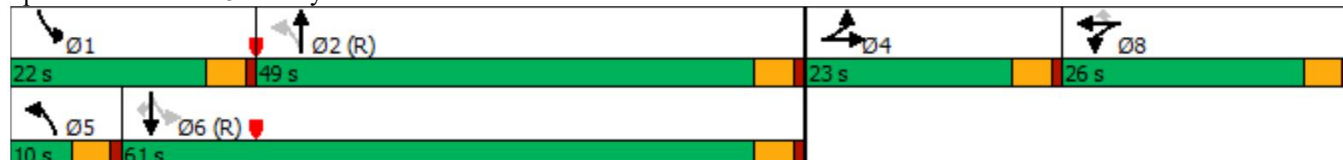
Intersection LOS: B

Intersection Capacity Utilization 51.4%

ICU Level of Service A

Analysis Period (min) 15






















Splits and Phases: 5: County Line Rd & Zlaten Dr



# HCM 6th Signalized Intersection Summary 5: County Line Rd & Zlaten Dr

2025 Background PM - Improved

09/14/2022

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	16	16	63	12	205	22	632	72	185	460	20
Future Volume (veh/h)	5	16	16	63	12	205	22	632	72	185	460	20
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	5	16	16	65	12	211	23	652	74	191	474	21
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	7	22	22	267	281	238	577	1971	223	537	1212	1027
Arrive On Green	0.03	0.03	0.03	0.15	0.15	0.15	0.02	0.61	0.61	0.06	0.65	0.65
Sat Flow, veh/h	233	746	746	1781	1870	1585	1781	3217	365	1781	1870	1585
Grp Volume(v), veh/h	37	0	0	65	12	211	23	360	366	191	474	21
Grp Sat Flow(s),veh/h/ln	1724	0	0	1781	1870	1585	1781	1777	1805	1781	1870	1585
Q Serve(g_s), s	2.6	0.0	0.0	3.9	0.7	15.7	0.6	11.8	11.8	4.5	14.3	0.6
Cycle Q Clear(g_c), s	2.6	0.0	0.0	3.9	0.7	15.7	0.6	11.8	11.8	4.5	14.3	0.6
Prop In Lane	0.14		0.43	1.00		1.00	1.00		0.20	1.00		1.00
Lane Grp Cap(c), veh/h	51	0	0	267	281	238	577	1089	1106	537	1212	1027
V/C Ratio(X)	0.73	0.00	0.00	0.24	0.04	0.89	0.04	0.33	0.33	0.36	0.39	0.02
Avail Cap(c_a), veh/h	266	0	0	319	335	284	619	1089	1106	694	1212	1027
HCMPlatoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95
Uniform Delay (d), s/veh	57.7	0.0	0.0	45.0	43.6	50.0	8.5	11.3	11.3	7.7	10.0	7.5
Incr Delay (d2), s/veh	17.7	0.0	0.0	0.5	0.1	24.1	0.0	0.8	0.8	0.4	0.9	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	0.0	0.0	1.7	0.3	7.8	0.2	4.8	4.8	1.7	5.9	0.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	75.5	0.0	0.0	45.4	43.7	74.0	8.6	12.1	12.1	8.1	10.9	7.6
LnGrp LOS	E	A	A	D	D	E	A	B	B	A	B	A
Approach Vol, veh/h		37			288			749			686	
Approach Delay, s/veh		75.5			66.3			12.0			10.0	
Approach LOS		E			E			B			A	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	11.4	78.0		8.0	7.2	82.3		22.5				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	17.5	44.5		18.5	5.5	56.5		21.5				
Max Q Clear Time (g_c+H1), s	6.5	13.8		4.6	2.6	16.3		17.7				
Green Ext Time (p_c), s	0.4	5.1		0.1	0.0	3.5		0.4				
<b>Intersection Summary</b>												
HCM6th Ctrl Delay				21.4								
HCM6th LOS				C								

# Timings 5: County Line Rd & Zlaten Dr

2025 Total AM  
09/14/2022

	→	↖	←	↗	↖	↗	↑	↘	↓	↖
Lane Group	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR	
Lane Configurations	↕	↖	↗	↗	↖	↕	↖	↗	↗	
Traffic Volume (vph)	4	102	11	218	6	502	65	376	11	
Future Volume (vph)	4	102	11	218	6	502	65	376	11	
Turn Type	NA	Split	NA	Perm	pm+pt	NA	pm+pt	NA	Perm	
Protected Phases	4	8	8		5	2	1	6		
Permitted Phases				8	2		6		6	
Detector Phase	4	8	8	8	5	2	1	6	6	
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	22.5	22.5	22.5	22.5	9.5	22.5	9.5	22.5	22.5	
Total Split (s)	24.0	29.0	29.0	29.0	10.0	55.0	12.0	57.0	57.0	
Total Split (%)	20.0%	24.2%	24.2%	24.2%	8.3%	45.8%	10.0%	47.5%	47.5%	
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	
Lead/Lag					Lead	Lag	Lead	Lag	Lag	
Lead-Lag Optimize?					Yes	Yes	Yes	Yes	Yes	
Recall Mode	None	None	None	None	None	C-Max	None	C-Max	C-Max	
Act Effct Green (s)	7.5	13.0	13.0	13.0	83.1	78.6	87.7	85.9	85.9	
Actuated g/C Ratio	0.06	0.11	0.11	0.11	0.69	0.66	0.73	0.72	0.72	
v/c Ratio	0.34	0.58	0.06	0.62	0.01	0.26	0.12	0.30	0.01	
Control Delay	44.6	62.1	46.0	13.4	6.8	10.7	2.2	3.2	0.0	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	44.6	62.1	46.0	13.4	6.8	10.7	2.2	3.2	0.0	
LOS	D	E	D	B	A	B	A	A	A	
Approach Delay	44.6		29.5			10.7		3.0		
Approach LOS	D		C			B		A		

## Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 0 (0%), Referenced to phase 2:NBTLand 6:SBTL, Start of Green

Natural Cycle: 80

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.62

Intersection Signal Delay: 13.7

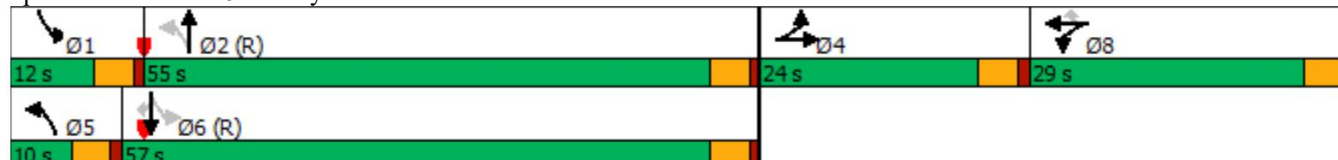
Intersection LOS: B

Intersection Capacity Utilization 45.0%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 5: County Line Rd & Zlaten Dr
























# HCM 6th Signalized Intersection Summary

## 5: County Line Rd & Zlaten Dr

2025 Total AM

09/14/2022

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	20	4	15	102	11	218	6	502	43	65	376	11
Future Volume (veh/h)	20	4	15	102	11	218	6	502	43	65	376	11
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	22	4	16	110	12	234	6	540	46	70	404	12
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	28	5	21	296	310	263	604	2038	173	575	1206	1022
Arrive On Green	0.03	0.03	0.03	0.17	0.17	0.17	0.01	0.61	0.61	0.04	0.64	0.64
Sat Flow, veh/h	895	163	651	1781	1870	1585	1781	3315	282	1781	1870	1585
Grp Volume(v), veh/h	42	0	0	110	12	234	6	289	297	70	404	12
Grp Sat Flow(s),veh/h/ln	1708	0	0	1781	1870	1585	1781	1777	1820	1781	1870	1585
Q Serve(g_s), s	2.9	0.0	0.0	6.6	0.6	17.3	0.2	9.0	9.0	1.7	11.7	0.3
Cycle Q Clear(g_c), s	2.9	0.0	0.0	6.6	0.6	17.3	0.2	9.0	9.0	1.7	11.7	0.3
Prop In Lane	0.52		0.38	1.00		1.00	1.00		0.15	1.00		1.00
Lane Grp Cap(c), veh/h	54	0	0	296	310	263	604	1093	1119	575	1206	1022
V/C Ratio(X)	0.78	0.00	0.00	0.37	0.04	0.89	0.01	0.26	0.27	0.12	0.33	0.01
Avail Cap(c_a), veh/h	278	0	0	364	382	324	673	1093	1119	619	1206	1022
HCMPlatoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	57.7	0.0	0.0	44.5	42.0	49.0	8.9	10.6	10.6	7.6	9.6	7.6
Incr Delay (d2), s/veh	20.8	0.0	0.0	0.8	0.1	21.7	0.0	0.6	0.6	0.1	0.7	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	0.0	0.0	3.0	0.3	8.4	0.1	3.6	3.7	0.6	4.9	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	78.5	0.0	0.0	45.3	42.1	70.7	8.9	11.2	11.2	7.7	10.4	7.6
LnGrp LOS	E	A	A	D	D	E	A	B	B	A	B	A
Approach Vol, veh/h		42			356			592			486	
Approach Delay, s/veh		78.5			61.9			11.2			9.9	
Approach LOS		E			E			B			A	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	9.0	78.3		8.3	5.4	81.9		24.4				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	7.5	50.5		19.5	5.5	52.5		24.5				
Max Q Clear Time (g_c+H1), s	3.7	11.0		4.9	2.2	13.7		19.3				
Green Ext Time (p_c), s	0.0	4.0		0.1	0.0	2.8		0.6				
<b>Intersection Summary</b>												
HCM6th Ctrl Delay				24.9								
HCM6th LOS				C								

# Timings 5: County Line Rd & Zlaten Dr

2025 Total PM  
09/14/2022

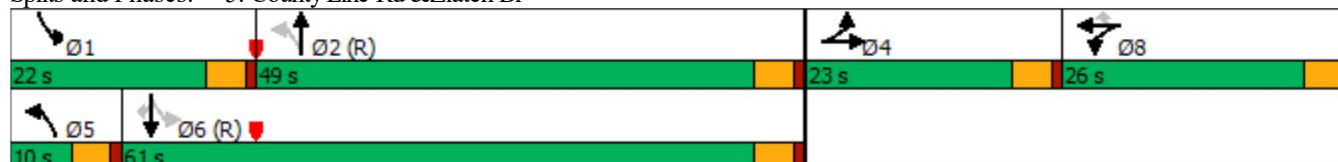
	→	↖	←	↗	↖	↑	↘	↓	↗
Lane Group	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations	↕	↖	↗	↗	↖	↕	↖	↗	↗
Traffic Volume (vph)	16	131	12	205	22	660	185	442	20
Future Volume (vph)	16	131	12	205	22	660	185	442	20
Turn Type	NA	Split	NA	Perm	pm+pt	NA	pm+pt	NA	Perm
Protected Phases	4	8	8		5	2	1	6	
Permitted Phases				8	2		6		6
Detector Phase	4	8	8	8	5	2	1	6	6
Switch Phase									
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	22.5	22.5	22.5	22.5	9.5	22.5	9.5	22.5	22.5
Total Split (s)	23.0	26.0	26.0	26.0	10.0	49.0	22.0	61.0	61.0
Total Split (%)	19.2%	21.7%	21.7%	21.7%	8.3%	40.8%	18.3%	50.8%	50.8%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag					Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?					Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	C-Max	None	C-Max	C-Max
Act Effct Green (s)	7.2	14.6	14.6	14.6	80.6	74.5	88.6	82.3	82.3
Actuated g/C Ratio	0.06	0.12	0.12	0.12	0.67	0.62	0.74	0.69	0.69
v/c Ratio	0.31	0.63	0.05	0.56	0.04	0.36	0.38	0.36	0.02
Control Delay	42.0	62.5	44.2	12.0	7.2	13.6	7.5	6.7	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	42.0	62.5	44.2	12.0	7.2	13.6	7.5	6.7	0.1
LOS	D	E	D	B	A	B	A	A	A
Approach Delay	42.0		32.1			13.4		6.7	
Approach LOS	D		C			B		A	

## Intersection Summary

Cycle Length: 120  
 Actuated Cycle Length: 120  
 Offset: 0 (0%), Referenced to phase 2:NBTLand 6:SBTL, Start of Green  
 Natural Cycle: 80  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.63  
 Intersection Signal Delay: 15.2  
 Intersection Capacity Utilization 56.4%  
 Analysis Period (min) 15

Intersection LOS: B  
 ICU Level of Service B

## Splits and Phases: 5: County Line Rd & Zlaten Dr


























# HCM 6th Signalized Intersection Summary

## 5: County Line Rd & Zlaten Dr

2025 Total PM

09/14/2022

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	16	16	131	12	205	22	660	86	185	442	20
Future Volume (veh/h)	5	16	16	131	12	205	22	660	86	185	442	20
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	5	16	16	135	12	211	23	680	89	191	456	21
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	7	22	22	269	282	239	589	1934	253	516	1211	1026
Arrive On Green	0.03	0.03	0.03	0.15	0.15	0.15	0.02	0.61	0.61	0.06	0.65	0.65
Sat Flow, veh/h	233	746	746	1781	1870	1585	1781	3160	413	1781	1870	1585
Grp Volume(v), veh/h	37	0	0	135	12	211	23	382	387	191	456	21
Grp Sat Flow(s),veh/h/ln	1724	0	0	1781	1870	1585	1781	1777	1796	1781	1870	1585
Q Serve(g_s), s	2.6	0.0	0.0	8.4	0.7	15.6	0.6	12.8	12.8	4.6	13.6	0.6
Cycle Q Clear(g_c), s	2.6	0.0	0.0	8.4	0.7	15.6	0.6	12.8	12.8	4.6	13.6	0.6
Prop In Lane	0.14		0.43	1.00		1.00	1.00		0.23	1.00		1.00
Lane Grp Cap(c), veh/h	51	0	0	269	282	239	589	1087	1099	516	1211	1026
V/C Ratio(X)	0.73	0.00	0.00	0.50	0.04	0.88	0.04	0.35	0.35	0.37	0.38	0.02
Avail Cap(c_a), veh/h	266	0	0	319	335	284	631	1087	1099	673	1211	1026
HCMPlatoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	57.7	0.0	0.0	46.8	43.5	49.9	8.5	11.5	11.5	7.9	9.9	7.6
Incr Delay (d2), s/veh	17.7	0.0	0.0	1.5	0.1	23.4	0.0	0.9	0.9	0.4	0.9	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	0.0	0.0	3.8	0.3	7.7	0.2	5.2	5.2	1.7	5.7	0.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	75.5	0.0	0.0	48.3	43.6	73.3	8.5	12.4	12.4	8.4	10.8	7.6
LnGrp LOS	E	A	A	D	D	E	A	B	B	A	B	A
Approach Vol, veh/h		37			358			792			668	
Approach Delay, s/veh		75.5			62.9			12.3			10.0	
Approach LOS		E			E			B			A	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	11.4	77.9		8.0	7.2	82.2		22.6				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	17.5	44.5		18.5	5.5	56.5		21.5				
Max Q Clear Time (g_c+H1), s	6.6	14.8		4.6	2.6	15.6		17.6				
Green Ext Time (p_c), s	0.4	5.4		0.1	0.0	3.3		0.5				
<b>Intersection Summary</b>												
HCM6th Ctrl Delay				22.5								
HCM6th LOS				C								

# Timings 5: County Line Rd & Zlaten Dr

2045 Background AM  
09/14/2022



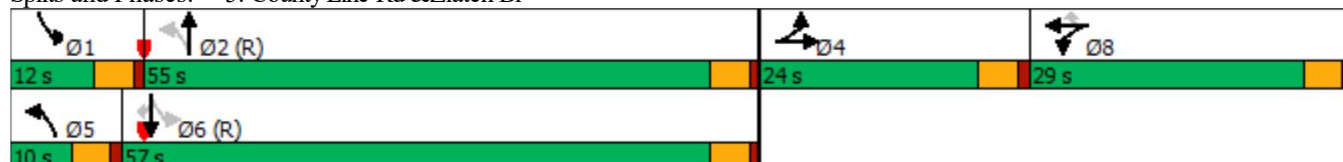
Lane Group	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations	↔	↵	↑	↶	↵	↕	↵	↑	↶
Traffic Volume (vph)	5	80	13	282	9	696	85	572	16
Future Volume (vph)	5	80	13	282	9	696	85	572	16
Turn Type	NA	Split	NA	Perm	pm+pt	NA	pm+pt	NA	Perm
Protected Phases	4	8	8		5	2	1	6	
Permitted Phases				8	2		6		6
Detector Phase	4	8	8	8	5	2	1	6	6
Switch Phase									
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	22.5	22.5	22.5	22.5	9.5	22.5	9.5	22.5	22.5
Total Split (s)	24.0	29.0	29.0	29.0	10.0	55.0	12.0	57.0	57.0
Total Split (%)	20.0%	24.2%	24.2%	24.2%	8.3%	45.8%	10.0%	47.5%	47.5%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag					Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?					Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	C-Max	None	C-Max	C-Max
Act Effct Green (s)	8.3	11.8	11.8	11.8	82.2	76.4	88.2	86.2	86.2
Actuated g/C Ratio	0.07	0.10	0.10	0.10	0.68	0.64	0.74	0.72	0.72
v/c Ratio	0.44	0.50	0.08	0.71	0.02	0.35	0.19	0.46	0.01
Control Delay	45.0	60.0	47.5	15.0	6.9	12.3	2.4	6.8	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	45.0	60.0	47.5	15.0	6.9	12.3	2.4	6.8	0.0
LOS	D	E	D	B	A	B	A	A	A
Approach Delay	45.0		25.7			12.2		6.1	
Approach LOS	D		C			B		A	

## Intersection Summary

Cycle Length: 120  
 Actuated Cycle Length: 120  
 Offset: 0 (0%), Referenced to phase 2:NBTLand 6:SBTL, Start of Green  
 Natural Cycle: 90  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.71  
 Intersection Signal Delay: 13.7  
 Intersection Capacity Utilization 55.5%  
 Analysis Period (min) 15

Intersection LOS: B  
 ICU Level of Service B

## Splits and Phases: 5: County Line Rd & Zlaten Dr
























# HCM 6th Signalized Intersection Summary

## 5: County Line Rd & Zlaten Dr

2045 Background AM

09/14/2022

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	30	5	22	80	13	282	9	696	35	85	572	16
Future Volume (veh/h)	30	5	22	80	13	282	9	696	35	85	572	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	32	5	24	86	14	303	10	748	38	91	615	17
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	42	6	31	364	382	324	387	1926	98	432	1099	931
Arrive On Green	0.05	0.05	0.05	0.20	0.20	0.20	0.01	0.56	0.56	0.04	0.59	0.59
Sat Flow, veh/h	894	140	671	1781	1870	1585	1781	3441	175	1781	1870	1585
Grp Volume(v), veh/h	61	0	0	86	14	303	10	386	400	91	615	17
Grp Sat Flow(s),veh/h/ln	1705	0	0	1781	1870	1585	1781	1777	1839	1781	1870	1585
Q Serve(g_s), s	4.2	0.0	0.0	4.8	0.7	22.6	0.3	14.7	14.7	2.5	24.2	0.5
Cycle Q Clear(g_c), s	4.2	0.0	0.0	4.8	0.7	22.6	0.3	14.7	14.7	2.5	24.2	0.5
Prop In Lane	0.52		0.39	1.00		1.00	1.00		0.10	1.00		1.00
Lane Grp Cap(c), veh/h	79	0	0	364	382	324	387	994	1029	432	1099	931
V/C Ratio(X)	0.77	0.00	0.00	0.24	0.04	0.94	0.03	0.39	0.39	0.21	0.56	0.02
Avail Cap(c_a), veh/h	277	0	0	364	382	324	448	994	1029	472	1099	931
HCMPlatoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	0.86	0.86	0.86
Uniform Delay (d), s/veh	56.6	0.0	0.0	39.9	38.3	47.0	12.9	14.9	14.9	11.0	15.2	10.3
Incr Delay (d2), s/veh	14.4	0.0	0.0	0.3	0.0	33.8	0.0	1.1	1.1	0.2	1.8	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.1	0.0	0.0	2.2	0.3	11.9	0.1	6.1	6.3	1.0	10.5	0.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	71.0	0.0	0.0	40.3	38.3	80.8	13.0	16.0	16.0	11.2	17.0	10.3
LnGrp LOS	E	A	A	D	D	F	B	B	B	B	B	B
Approach Vol, veh/h		61			403			796			723	
Approach Delay, s/veh		71.0			70.6			16.0			16.1	
Approach LOS		E			E			B			B	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	9.3	71.7		10.1	5.9	75.0		29.0				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	7.5	50.5		19.5	5.5	52.5		24.5				
Max Q Clear Time (g_c+H1), s	4.5	16.7		6.2	2.3	26.2		24.6				
Green Ext Time (p_c), s	0.0	5.7		0.2	0.0	4.6		0.0				
<b>Intersection Summary</b>												
HCM6th Ctrl Delay				28.8								
HCM6th LOS				C								

# Timings 5: County Line Rd & Zlaten Dr

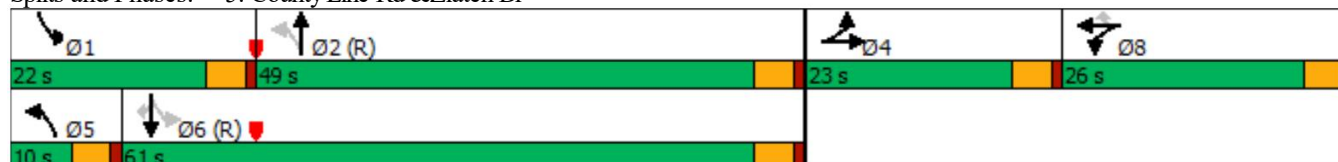
2045 Background PM  
09/14/2022

	→	↖	←	↗	↖	↑	↘	↓	↗
Lane Group	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations	↕	↖	↗	↗	↖	↕	↖	↗	↗
Traffic Volume (vph)	21	88	16	280	33	930	245	676	30
Future Volume (vph)	21	88	16	280	33	930	245	676	30
Turn Type	NA	Split	NA	Perm	pm+pt	NA	pm+pt	NA	Perm
Protected Phases	4	8	8		5	2	1	6	
Permitted Phases				8	2		6		6
Detector Phase	4	8	8	8	5	2	1	6	6
Switch Phase									
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	22.5	22.5	22.5	22.5	9.5	22.5	9.5	22.5	22.5
Total Split (s)	23.0	26.0	26.0	26.0	10.0	49.0	22.0	61.0	61.0
Total Split (%)	19.2%	21.7%	21.7%	21.7%	8.3%	40.8%	18.3%	50.8%	50.8%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag					Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?					Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	C-Max	None	C-Max	C-Max
Act Effct Green (s)	7.8	11.9	11.9	11.9	72.6	66.4	88.8	82.1	82.1
Actuated g/C Ratio	0.06	0.10	0.10	0.10	0.60	0.55	0.74	0.68	0.68
v/c Ratio	0.40	0.52	0.09	0.69	0.07	0.55	0.55	0.55	0.03
Control Delay	41.6	60.9	47.7	14.8	8.1	21.1	23.8	10.1	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	41.6	60.9	47.7	14.8	8.1	21.1	23.8	10.1	0.0
LOS	D	E	D	B	A	C	C	B	A
Approach Delay	41.6		26.7			20.7		13.3	
Approach LOS	D		C			C		B	

## Intersection Summary

Cycle Length: 120  
 Actuated Cycle Length: 120  
 Offset: 0 (0%), Referenced to phase 2:NBTLand 6:SBTL, Start of Green  
 Natural Cycle: 90  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.69  
 Intersection Signal Delay: 19.2  
 Intersection LOS: B  
 Intersection Capacity Utilization 65.3%  
 ICU Level of Service C  
 Analysis Period (min) 15

## Splits and Phases: 5: County Line Rd & Zlaten Dr
























# HCM 6th Signalized Intersection Summary

## 5: County Line Rd & Zlaten Dr

2045 Background PM

09/14/2022

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	8	21	24	88	16	280	33	930	100	245	676	30
Future Volume (veh/h)	8	21	24	88	16	280	33	930	100	245	676	30
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	8	22	25	91	16	289	34	959	103	253	697	31
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	10	29	33	319	335	284	375	1780	191	393	1124	953
Arrive On Green	0.04	0.04	0.04	0.18	0.18	0.18	0.03	0.55	0.55	0.08	0.60	0.60
Sat Flow, veh/h	250	687	781	1781	1870	1585	1781	3237	348	1781	1870	1585
Grp Volume(v), veh/h	55	0	0	91	16	289	34	526	536	253	697	31
Grp Sat Flow(s),veh/h/ln	1717	0	0	1781	1870	1585	1781	1777	1808	1781	1870	1585
Q Serve(g_s), s	3.8	0.0	0.0	5.3	0.8	21.5	1.0	22.7	22.7	7.0	28.4	1.0
Cycle Q Clear(g_c), s	3.8	0.0	0.0	5.3	0.8	21.5	1.0	22.7	22.7	7.0	28.4	1.0
Prop In Lane	0.15		0.45	1.00		1.00	1.00		0.19	1.00		1.00
Lane Grp Cap(c), veh/h	72	0	0	319	335	284	375	977	994	393	1124	953
V/C Ratio(X)	0.77	0.00	0.00	0.29	0.05	1.02	0.09	0.54	0.54	0.64	0.62	0.03
Avail Cap(c_a), veh/h	265	0	0	319	335	284	406	977	994	511	1124	953
HCMPlatoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	0.81	0.81	0.81
Uniform Delay (d), s/veh	56.9	0.0	0.0	42.6	40.8	49.3	13.1	17.3	17.3	13.6	15.2	9.7
Incr Delay (d2), s/veh	15.7	0.0	0.0	0.5	0.1	58.0	0.1	2.1	2.1	1.4	2.1	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.0	0.0	0.0	2.4	0.4	13.0	0.4	9.6	9.8	2.8	12.2	0.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	72.7	0.0	0.0	43.1	40.8	107.2	13.2	19.4	19.4	15.1	17.3	9.8
LnGrp LOS	E	A	A	D	D	F	B	B	B	B	B	A
Approach Vol, veh/h		55			396			1096			981	
Approach Delay, s/veh		72.7			89.8			19.2			16.5	
Approach LOS		E			F			B			B	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	14.0	70.5		9.5	7.9	76.6		26.0				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	17.5	44.5		18.5	5.5	56.5		21.5				
Max Q Clear Time (g_c+I1), s	9.0	24.7		5.8	3.0	30.4		23.5				
Green Ext Time (p_c), s	0.5	7.2		0.1	0.0	5.5		0.0				
<b>Intersection Summary</b>												
HCM6th Ctrl Delay				30.4								
HCM6th LOS				C								

# Timings 5: County Line Rd & Zlaten Dr

2045 Total AM

09/14/2022

	→	↖	←	↗	↖	↑	↘	↓	↗
Lane Group	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations	↕	↖	↗	↗	↖	↕	↖	↗	↗
Traffic Volume (vph)	5	123	13	282	9	728	85	557	16
Future Volume (vph)	5	123	13	282	9	728	85	557	16
Turn Type	NA	Split	NA	Perm	pm+pt	NA	pm+pt	NA	Perm
Protected Phases	4	8	8		5	2	1	6	
Permitted Phases				8	2		6		6
Detector Phase	4	8	8	8	5	2	1	6	6
Switch Phase									
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	22.5	22.5	22.5	22.5	9.5	22.5	9.5	22.5	22.5
Total Split (s)	24.0	29.0	29.0	29.0	10.0	55.0	12.0	57.0	57.0
Total Split (%)	20.0%	24.2%	24.2%	24.2%	8.3%	45.8%	10.0%	47.5%	47.5%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag					Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?					Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	C-Max	None	C-Max	C-Max
Act Effct Green (s)	8.3	14.7	14.7	14.7	79.1	73.3	85.3	83.3	83.3
Actuated g/C Ratio	0.07	0.12	0.12	0.12	0.66	0.61	0.71	0.69	0.69
v/c Ratio	0.44	0.61	0.06	0.66	0.02	0.39	0.21	0.46	0.02
Control Delay	45.0	60.9	44.1	12.3	8.1	14.3	3.0	6.7	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	45.0	60.9	44.1	12.3	8.1	14.3	3.0	6.7	0.0
LOS	D	E	D	B	A	B	A	A	A
Approach Delay	45.0		27.6			14.2		6.0	
Approach LOS	D		C			B		A	

## Intersection Summary

Cycle Length: 120  
 Actuated Cycle Length: 120  
 Offset: 0 (0%), Referenced to phase 2:NBTLand 6:SBTL, Start of Green  
 Natural Cycle: 90  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.66  
 Intersection Signal Delay: 15.3  
 Intersection Capacity Utilization 56.2%  
 Analysis Period (min) 15

Intersection LOS: B  
 ICU Level of Service B

## Splits and Phases: 5: County Line Rd & Zlaten Dr

↖ Ø1	↗ Ø2 (R)	↗ Ø4	↖ Ø8
12 s	55 s	24 s	29 s
↖ Ø5	↗ Ø6 (R)		
10 s	57 s		

























# HCM 6th Signalized Intersection Summary

## 5: County Line Rd & Zlaten Dr

2045 Total AM

09/14/2022

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	30	5	22	123	13	282	9	728	51	85	557	16
Future Volume (veh/h)	30	5	22	123	13	282	9	728	51	85	557	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	32	5	24	132	14	303	10	783	55	91	599	17
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	42	6	31	364	382	324	398	1885	132	410	1099	931
Arrive On Green	0.05	0.05	0.05	0.20	0.20	0.20	0.01	0.56	0.56	0.04	0.59	0.59
Sat Flow, veh/h	894	140	671	1781	1870	1585	1781	3368	237	1781	1870	1585
Grp Volume(v), veh/h	61	0	0	132	14	303	10	413	425	91	599	17
Grp Sat Flow(s),veh/h/ln	1705	0	0	1781	1870	1585	1781	1777	1828	1781	1870	1585
Q Serve(g_s), s	4.2	0.0	0.0	7.6	0.7	22.6	0.3	16.0	16.0	2.5	23.3	0.5
Cycle Q Clear(g_c), s	4.2	0.0	0.0	7.6	0.7	22.6	0.3	16.0	16.0	2.5	23.3	0.5
Prop In Lane	0.52		0.39	1.00		1.00	1.00		0.13	1.00		1.00
Lane Grp Cap(c), veh/h	79	0	0	364	382	324	398	994	1023	410	1099	931
V/C Ratio(X)	0.77	0.00	0.00	0.36	0.04	0.94	0.03	0.42	0.42	0.22	0.55	0.02
Avail Cap(c_a), veh/h	277	0	0	364	382	324	459	994	1023	451	1099	931
HCMPlatoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	56.6	0.0	0.0	41.0	38.3	47.0	12.8	15.2	15.2	11.2	15.0	10.3
Incr Delay (d2), s/veh	14.4	0.0	0.0	0.6	0.0	33.8	0.0	1.3	1.2	0.3	1.9	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.1	0.0	0.0	3.4	0.3	11.9	0.1	6.7	6.9	1.0	10.2	0.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	71.0	0.0	0.0	41.7	38.3	80.8	12.8	16.4	16.4	11.4	17.0	10.4
LnGrp LOS	E	A	A	D	D	F	B	B	B	B	B	B
Approach Vol, veh/h		61			449			848			707	
Approach Delay, s/veh		71.0			67.9			16.4			16.1	
Approach LOS		E			E			B			B	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	9.3	71.7		10.1	5.9	75.0		29.0				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	7.5	50.5		19.5	5.5	52.5		24.5				
Max Q Clear Time (g_c+H1), s	4.5	18.0		6.2	2.3	25.3		24.6				
Green Ext Time (p_c), s	0.0	6.1		0.2	0.0	4.4		0.0				
<b>Intersection Summary</b>												
HCM6th Ctrl Delay				29.1								
HCM6th LOS				C								

Timings  
5: County Line Rd & Zlaten Dr

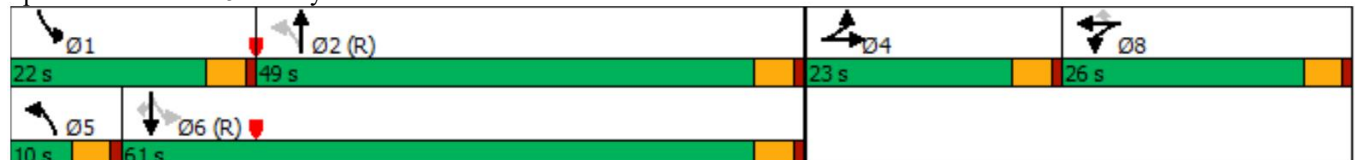
2045 Total PM  
09/14/2022

	→	↖	←	↗	↖	↑	↘	↓	↗
Lane Group	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations	↕	↖	↗	↗	↖	↕	↖	↗	↗
Traffic Volume (vph)	21	156	16	280	33	958	245	658	30
Future Volume (vph)	21	156	16	280	33	958	245	658	30
Turn Type	NA	Split	NA	Perm	pm+pt	NA	pm+pt	NA	Perm
Protected Phases	4	8	8		5	2	1	6	
Permitted Phases				8	2		6		6
Detector Phase	4	8	8	8	5	2	1	6	6
Switch Phase									
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	22.5	22.5	22.5	22.5	9.5	22.5	9.5	22.5	22.5
Total Split (s)	23.0	26.0	26.0	26.0	10.0	49.0	22.0	61.0	61.0
Total Split (%)	19.2%	21.7%	21.7%	21.7%	8.3%	40.8%	18.3%	50.8%	50.8%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag					Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?					Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	C-Max	None	C-Max	C-Max
Act Effct Green (s)	7.8	16.6	16.6	16.6	68.4	62.0	84.1	77.3	77.3
Actuated g/C Ratio	0.06	0.14	0.14	0.14	0.57	0.52	0.70	0.64	0.64
v/c Ratio	0.40	0.66	0.06	0.62	0.08	0.61	0.62	0.57	0.03
Control Delay	41.6	61.0	42.4	11.0	9.9	25.2	14.1	15.5	0.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	41.6	61.0	42.4	11.0	9.9	25.2	14.1	15.5	0.4
LOS	D	E	D	B	A	C	B	B	A
Approach Delay	41.6		29.4			24.8		14.6	
Approach LOS	D		C			C		B	

Intersection Summary

Cycle Length: 120  
 Actuated Cycle Length: 120  
 Offset: 0 (0%), Referenced to phase 2:NBTLand 6:SBTL, Start of Green  
 Natural Cycle: 90  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.66  
 Intersection Signal Delay: 22.2  
 Intersection LOS: C  
 Intersection Capacity Utilization 70.2%  
 ICU Level of Service C  
 Analysis Period (min) 15

Splits and Phases: 5: County Line Rd & Zlaten Dr































# HCM 6th Signalized Intersection Summary








## 5: County Line Rd & Zlaten Dr

2045 Total PM

09/14/2022

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	8	21	24	156	16	280	33	958	114	245	658	30
Future Volume (veh/h)	8	21	24	156	16	280	33	958	114	245	658	30
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	8	22	25	161	16	289	34	988	118	253	678	31
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	10	29	33	319	335	284	387	1758	210	379	1124	953
Arrive On Green	0.04	0.04	0.04	0.18	0.18	0.18	0.03	0.55	0.55	0.08	0.60	0.60
Sat Flow, veh/h	250	687	781	1781	1870	1585	1781	3197	382	1781	1870	1585
Grp Volume(v), veh/h	55	0	0	161	16	289	34	549	557	253	678	31
Grp Sat Flow(s),veh/h/ln	1717	0	0	1781	1870	1585	1781	1777	1802	1781	1870	1585
Q Serve(g_s), s	3.8	0.0	0.0	9.8	0.8	21.5	1.0	24.1	24.2	7.0	27.2	1.0
Cycle Q Clear(g_c), s	3.8	0.0	0.0	9.8	0.8	21.5	1.0	24.1	24.2	7.0	27.2	1.0
Prop In Lane	0.15		0.45	1.00		1.00	1.00		0.21	1.00		1.00
Lane Grp Cap(c), veh/h	72	0	0	319	335	284	387	977	991	379	1124	953
V/C Ratio(X)	0.77	0.00	0.00	0.50	0.05	1.02	0.09	0.56	0.56	0.67	0.60	0.03
Avail Cap(c_a), veh/h	265	0	0	319	335	284	418	977	991	497	1124	953
HCMPlatoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	56.9	0.0	0.0	44.4	40.8	49.3	12.8	17.6	17.6	14.4	15.0	9.7
Incr Delay (d2), s/veh	15.7	0.0	0.0	1.3	0.1	58.0	0.1	2.3	2.3	2.2	2.4	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.0	0.0	0.0	4.4	0.4	13.0	0.4	10.3	10.4	2.8	11.8	0.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	72.7	0.0	0.0	45.7	40.8	107.2	12.9	19.9	19.9	16.6	17.4	9.8
LnGrp LOS	E	A	A	D	D	F	B	B	B	B	B	A
Approach Vol, veh/h		55			466			1140			962	
Approach Delay, s/veh		72.7			83.7			19.7			16.9	
Approach LOS		E			F			B			B	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	14.0	70.5		9.5	7.9	76.6		26.0				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	17.5	44.5		18.5	5.5	56.5		21.5				
Max Q Clear Time (g_c+H1), s	9.0	26.2		5.8	3.0	29.2		23.5				
Green Ext Time (p_c), s	0.5	7.3		0.1	0.0	5.3		0.0				
<b>Intersection Summary</b>												
HCM6th Ctrl Delay				31.2								
HCM6th LOS				C								








Intersection												
Int Delay, s/veh	5.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	20	34	9	2	47	3	37	7	3	4	4	45
Future Vol, veh/h	20	34	9	2	47	3	37	7	3	4	4	45
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	100	-	-	125	-	-	-	-	-	-	-	100
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	88	88	88	88	88	88	88	88	88	88	88	88
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	23	39	10	2	53	3	42	8	3	5	5	51
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	56	0	0	49	0	0	177	150	44	155	154	55
Stage 1	-	-	-	-	-	-	90	90	-	59	59	-
Stage 2	-	-	-	-	-	-	87	60	-	96	95	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1549	-	-	1558	-	-	785	742	1026	812	738	1012
Stage 1	-	-	-	-	-	-	917	820	-	953	846	-
Stage 2	-	-	-	-	-	-	921	845	-	911	816	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1549	-	-	1558	-	-	732	730	1026	793	726	1012
Mov Cap-2 Maneuver	-	-	-	-	-	-	731	705	-	775	705	-
Stage 1	-	-	-	-	-	-	903	808	-	939	845	-
Stage 2	-	-	-	-	-	-	869	844	-	886	804	-
Approach	EB			WB			NB			SB		
HCMControl Delay, s	2.3			0.3			10.2			8.9		
HCMLOS							B			A		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2			
Capacity (veh/h)	741	1549	-	-	1558	-	-	738	1012			
HCM Lane V/C Ratio	0.072	0.015	-	-	0.001	-	-	0.012	0.051			
HCMControl Delay (s)	10.2	7.4	-	-	7.3	-	-	9.9	8.7			
HCM Lane LOS	B	A	-	-	A	-	-	A	A			
HCM95th %tile Q(veh)	0.2	0	-	-	0	-	-	0	0.2			

Intersection												
Int Delay, s/veh	6.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	74	51	25	6	27	3	23	10	5	8	5	143
Future Vol, veh/h	74	51	25	6	27	3	23	10	5	8	5	143
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	100	-	-	125	-	-	-	-	-	-	-	100
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	97	97	97	97	97	97	97	97	97	97	97	97
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	76	53	26	6	28	3	24	10	5	8	5	147

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	31	0	0	79	0	0	336	261	66	268	273	30
Stage 1	-	-	-	-	-	-	218	218	-	42	42	-
Stage 2	-	-	-	-	-	-	118	43	-	226	231	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1582	-	-	1519	-	-	618	644	998	685	634	1044
Stage 1	-	-	-	-	-	-	784	723	-	972	860	-
Stage 2	-	-	-	-	-	-	887	859	-	777	713	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1582	-	-	1519	-	-	506	611	998	646	601	1044
Mov Cap-2 Maneuver	-	-	-	-	-	-	553	606	-	642	600	-
Stage 1	-	-	-	-	-	-	746	688	-	925	857	-
Stage 2	-	-	-	-	-	-	754	856	-	725	679	-








Approach	EB			WB			NB			SB		
HCMControl Delay, s	3.6			1.2			11.4			9.2		
HCMLOS							B			A		








Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	602	1582	-	-	1519	-	-	625	1044
HCM Lane V/C Ratio	0.065	0.048	-	-	0.004	-	-	0.021	0.141
HCM Control Delay (s)	11.4	7.4	-	-	7.4	-	-	10.9	9
HCM Lane LOS	B	A	-	-	A	-	-	B	A
HCM 95th %tile Q(veh)	0.2	0.2	-	-	0	-	-	0.1	0.5








Intersection												
Int Delay, s/veh	6.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	41	53	18	7	64	3	91	16	17	4	13	65
Future Vol, veh/h	41	53	18	7	64	3	91	16	17	4	13	65
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	100	-	-	125	-	-	-	-	-	-	-	100
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	88	88	88	88	88	88	88	88	88	88	88	88
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	47	60	20	8	73	3	103	18	19	5	15	74
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	76	0	0	80	0	0	299	256	70	274	265	75
Stage 1	-	-	-	-	-	-	164	164	-	91	91	-
Stage 2	-	-	-	-	-	-	135	92	-	183	174	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1523	-	-	1518	-	-	653	648	993	678	640	986
Stage 1	-	-	-	-	-	-	838	762	-	916	820	-
Stage 2	-	-	-	-	-	-	868	819	-	819	755	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1523	-	-	1518	-	-	577	625	993	633	617	986
Mov Cap-2 Maneuver	-	-	-	-	-	-	614	628	-	651	627	-
Stage 1	-	-	-	-	-	-	812	738	-	888	816	-
Stage 2	-	-	-	-	-	-	784	815	-	759	732	-
Approach	EB			WB			NB			SB		
HCMControl Delay, s	2.7			0.7			12.1			9.3		
HCMLOS							B			A		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2			
Capacity (veh/h)	650	1523	-	-	1518	-	-	632	986			
HCM Lane V/C Ratio	0.217	0.031	-	-	0.005	-	-	0.031	0.075			
HCM Control Delay (s)	12.1	7.4	-	-	7.4	-	-	10.9	8.9			
HCM Lane LOS	B	A	-	-	A	-	-	B	A			
HCM 95th %tile Q(veh)	0.8	0.1	-	-	0	-	-	0.1	0.2			








Intersection												
Int Delay, s/veh	7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↱		↰	↱			↕			↱	↰
Traffic Vol, veh/h	92	67	55	17	45	3	50	18	15	8	36	166
Future Vol, veh/h	92	67	55	17	45	3	50	18	15	8	36	166
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	100	-	-	125	-	-	-	-	-	-	-	100
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	97	97	97	97	97	97	97	97	97	97	97	97
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	95	69	57	18	46	3	52	19	15	8	37	171
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	49	0	0	126	0	0	476	373	98	389	400	48
Stage 1	-	-	-	-	-	-	288	288	-	84	84	-
Stage 2	-	-	-	-	-	-	188	85	-	305	316	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1558	-	-	1460	-	-	499	557	958	570	538	1021
Stage 1	-	-	-	-	-	-	720	674	-	924	825	-
Stage 2	-	-	-	-	-	-	814	824	-	705	655	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1558	-	-	1460	-	-	371	517	958	516	499	1021
Mov Cap-2 Maneuver	-	-	-	-	-	-	439	539	-	541	524	-
Stage 1	-	-	-	-	-	-	676	633	-	868	815	-
Stage 2	-	-	-	-	-	-	639	814	-	632	615	-
Approach	EB			WB			NB			SB		
HCMControl Delay, s	3.2			2			13.5			9.9		
HCMLOS							B			A		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2			
Capacity (veh/h)	509	1558	-	-	1460	-	-	527	1021			
HCM Lane V/C Ratio	0.168	0.061	-	-	0.012	-	-	0.086	0.168			
HCM Control Delay (s)	13.5	7.5	-	-	7.5	-	-	12.5	9.2			
HCM Lane LOS	B	A	-	-	A	-	-	B	A			
HCM 95th %tile Q(veh)	0.6	0.2	-	-	0	-	-	0.3	0.6			

















Intersection												
Int Delay, s/veh	7.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	57	53	18	7	64	3	91	16	17	4	13	108
Future Vol, veh/h	57	53	18	7	64	3	91	16	17	4	13	108
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	100	-	-	125	-	-	-	-	-	-	-	100
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	88	88	88	88	88	88	88	88	88	88	88	88
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	65	60	20	8	73	3	103	18	19	5	15	123
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	76	0	0	80	0	0	360	292	70	310	301	75
Stage 1	-	-	-	-	-	-	200	200	-	91	91	-
Stage 2	-	-	-	-	-	-	160	92	-	219	210	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1523	-	-	1528	-	-	610	630	1019	660	622	986
Stage 1	-	-	-	-	-	-	818	743	-	916	820	-
Stage 2	-	-	-	-	-	-	842	819	-	798	735	-
Platoon blocked, %	-	-	-	1	-	-	1	1	1	1	1	-
Mov Cap-1 Maneuver	1523	-	-	1528	-	-	505	600	1019	610	592	986
Mov Cap-2 Maneuver	-	-	-	-	-	-	550	606	-	629	605	-
Stage 1	-	-	-	-	-	-	783	711	-	877	816	-
Stage 2	-	-	-	-	-	-	720	815	-	731	704	-
Approach	EB			WB			NB			SB		
HCMControl Delay, s	3.3			0.7			12.9			9.5		
HCMLOS							B			A		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2			
Capacity (veh/h)	595	1523	-	-	1528	-	-	610	986			
HCM Lane V/C Ratio	0.237	0.043	-	-	0.005	-	-	0.032	0.124			
HCMControl Delay (s)	12.9	7.5	-	-	7.4	-	-	11.1	9.2			
HCM Lane LOS	B	A	-	-	A	-	-	B	A			
HCM95th %tile Q(veh)	0.9	0.1	-	-	0	-	-	0.1	0.4			

Intersection												
Int Delay, s/veh	7.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	106	67	55	17	45	3	50	18	15	8	36	234
Future Vol, veh/h	106	67	55	17	45	3	50	18	15	8	36	234
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	100	-	-	125	-	-	-	-	-	-	-	100
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	97	97	97	97	97	97	97	97	97	97	97	97
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	109	69	57	18	46	3	52	19	15	8	37	241
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	49	0	0	126	0	0	539	401	98	417	428	48
Stage 1	-	-	-	-	-	-	316	316	-	84	84	-
Stage 2	-	-	-	-	-	-	223	85	-	333	344	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1558	-	-	1468	-	-	460	546	983	558	526	1021
Stage 1	-	-	-	-	-	-	705	659	-	924	825	-
Stage 2	-	-	-	-	-	-	780	824	-	691	641	-
Platoon blocked, %	-	-	-	1	-	-	1	1	1	1	1	-
Mov Cap-1 Maneuver	1558	-	-	1468	-	-	312	501	983	501	484	1021
Mov Cap-2 Maneuver	-	-	-	-	-	-	376	523	-	525	509	-
Stage 1	-	-	-	-	-	-	656	613	-	859	815	-
Stage 2	-	-	-	-	-	-	562	814	-	613	596	-
Approach	EB			WB			NB			SB		
HCMControl Delay, s	3.5			2			14.8			10.1		
HCMLOS							B			B		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2			
Capacity (veh/h)	454	1558	-	-	1468	-	-	512	1021			
HCM Lane V/C Ratio	0.188	0.07	-	-	0.012	-	-	0.089	0.236			
HCMControl Delay (s)	14.8	7.5	-	-	7.5	-	-	12.7	9.6			
HCM Lane LOS	B	A	-	-	A	-	-	B	A			
HCM95th %tile Q(veh)	0.7	0.2	-	-	0	-	-	0.3	0.9			

Intersection												
Int Delay, s/veh	7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	52	71	22	8	88	5	110	20	19	6	15	88
Future Vol, veh/h	52	71	22	8	88	5	110	20	19	6	15	88
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	100	-	-	125	-	-	-	-	-	-	-	100
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	88	88	88	88	88	88	88	88	88	88	88	88
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	59	81	25	9	100	6	125	23	22	7	17	100
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	106	0	0	106	0	0	392	336	94	355	345	103
Stage 1	-	-	-	-	-	-	212	212	-	121	121	-
Stage 2	-	-	-	-	-	-	180	124	-	234	224	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1485	-	-	1494	-	-	580	594	988	614	587	952
Stage 1	-	-	-	-	-	-	805	734	-	883	796	-
Stage 2	-	-	-	-	-	-	822	793	-	783	725	-
Platoon blocked, %	-	-	-	1	-	-	1	1	1	1	1	-
Mov Cap-1 Maneuver	1485	-	-	1494	-	-	490	567	988	563	560	952
Mov Cap-2 Maneuver	-	-	-	-	-	-	543	585	-	600	586	-
Stage 1	-	-	-	-	-	-	773	704	-	848	791	-
Stage 2	-	-	-	-	-	-	715	788	-	712	696	-
Approach	EB			WB			NB			SB		
HCMControl Delay, s	2.7			0.6			13.7			9.6		
HCMLOS							B			A		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2			
Capacity (veh/h)	582	1485	-	-	1494	-	-	590	952			
HCM Lane V/C Ratio	0.291	0.04	-	-	0.006	-	-	0.04	0.105			
HCMControl Delay (s)	13.7	7.5	-	-	7.4	-	-	11.4	9.2			
HCM Lane LOS	B	A	-	-	A	-	-	B	A			
HCM95th %tile Q(veh)	1.2	0.1	-	-	0	-	-	0.1	0.4			




Intersection												
Int Delay, s/veh	7.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	130	93	67	20	59	5	62	23	18	13	39	239
Future Vol, veh/h	130	93	67	20	59	5	62	23	18	13	39	239
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	100	-	-	125	-	-	-	-	-	-	-	100
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	97	97	97	97	97	97	97	97	97	97	97	97
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	134	96	69	21	61	5	64	24	19	13	40	246
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	66	0	0	165	0	0	648	507	131	526	539	64
Stage 1	-	-	-	-	-	-	399	399	-	106	106	-
Stage 2	-	-	-	-	-	-	249	108	-	420	433	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1536	-	-	1426	-	-	391	477	961	476	456	1000
Stage 1	-	-	-	-	-	-	642	608	-	900	807	-
Stage 2	-	-	-	-	-	-	755	806	-	625	586	-
Platoon blocked, %	-	-	-	1	-	-	1	1	1	1	1	-
Mov Cap-1 Maneuver	1536	-	-	1426	-	-	254	429	961	415	410	1000
Mov Cap-2 Maneuver	-	-	-	-	-	-	324	466	-	451	449	-
Stage 1	-	-	-	-	-	-	586	555	-	822	795	-
Stage 2	-	-	-	-	-	-	532	794	-	535	535	-
Approach	EB			WB			NB			SB		
HCMControl Delay, s	3.4			1.8			17.3			10.6		
HCMLOS							C			B		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2			
Capacity (veh/h)	397	1536	-	-	1426	-	-	449	1000			
HCM Lane V/C Ratio	0.267	0.087	-	-	0.014	-	-	0.119	0.246			
HCMControl Delay (s)	17.3	7.6	-	-	7.6	-	-	14.1	9.8			
HCM Lane LOS	C	A	-	-	A	-	-	B	A			
HCM95th %tile Q(veh)	1.1	0.3	-	-	0	-	-	0.4	1			




Intersection												
Int Delay, s/veh	7.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	68	71	22	8	88	5	110	20	19	6	15	131
Future Vol, veh/h	68	71	22	8	88	5	110	20	19	6	15	131
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	100	-	-	125	-	-	-	-	-	-	-	100
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	88	88	88	88	88	88	88	88	88	88	88	88
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	77	81	25	9	100	6	125	23	22	7	17	149
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	106	0	0	106	0	0	452	372	94	391	381	103
Stage 1	-	-	-	-	-	-	248	248	-	121	121	-
Stage 2	-	-	-	-	-	-	204	124	-	270	260	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1485	-	-	1494	-	-	528	567	988	581	560	952
Stage 1	-	-	-	-	-	-	769	707	-	883	796	-
Stage 2	-	-	-	-	-	-	798	793	-	748	699	-
Platoon blocked, %		-	-	1	-	-	1	1	1	1	1	
Mov Cap-1 Maneuver	1485	-	-	1494	-	-	416	534	988	527	528	952
Mov Cap-2 Maneuver	-	-	-	-	-	-	477	558	-	566	559	-
Stage 1	-	-	-	-	-	-	729	671	-	837	791	-
Stage 2	-	-	-	-	-	-	655	788	-	670	662	-
Approach	EB			WB			NB			SB		
HCMControl Delay, s	3.2			0.6			15.2			9.8		
HCMLOS							C			A		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2			
Capacity (veh/h)	522	1485	-	-	1494	-	-	561	952			
HCM Lane V/C Ratio	0.324	0.052	-	-	0.006	-	-	0.043	0.156			
HCMControl Delay (s)	15.2	7.6	-	-	7.4	-	-	11.7	9.5			
HCM Lane LOS	C	A	-	-	A	-	-	B	A			
HCM95th %tile Q(veh)	1.4	0.2	-	-	0	-	-	0.1	0.6			

Intersection												
Int Delay, s/veh	8.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	144	93	67	20	59	5	62	23	18	13	39	307
Future Vol, veh/h	144	93	67	20	59	5	62	23	18	13	39	307
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	100	-	-	125	-	-	-	-	-	-	-	100
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	97	97	97	97	97	97	97	97	97	97	97	97
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	148	96	69	21	61	5	64	24	19	13	40	316
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	66	0	0	165	0	0	711	535	131	554	567	64
Stage 1	-	-	-	-	-	-	427	427	-	106	106	-
Stage 2	-	-	-	-	-	-	284	108	-	448	461	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1536	-	-	1426	-	-	353	459	961	455	439	1000
Stage 1	-	-	-	-	-	-	619	590	-	900	807	-
Stage 2	-	-	-	-	-	-	723	806	-	602	568	-
Platoon blocked, %	-	-	-	1	-	-	1	1	1	1	1	-
Mov Cap-1 Maneuver	1536	-	-	1426	-	-	206	409	961	393	391	1000
Mov Cap-2 Maneuver	-	-	-	-	-	-	264	448	-	430	431	-
Stage 1	-	-	-	-	-	-	560	533	-	814	795	-
Stage 2	-	-	-	-	-	-	462	794	-	510	513	-
Approach	EB			WB			NB			SB		
HCMControl Delay, s	3.6			1.8			20.5			10.9		
HCMLOS							C			B		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2			
Capacity (veh/h)	338	1536	-	-	1426	-	-	431	1000			
HCM Lane V/C Ratio	0.314	0.097	-	-	0.014	-	-	0.124	0.316			
HCMControl Delay (s)	20.5	7.6	-	-	7.6	-	-	14.5	10.3			
HCM Lane LOS	C	A	-	-	A	-	-	B	B			
HCM95th %tile Q(veh)	1.3	0.3	-	-	0	-	-	0.4	1.4			

Intersection						
Int Delay, s/veh	1.4					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	W			W	W	
Traffic Vol, veh/h	36	15	6	65	186	125
Future Vol, veh/h	36	15	6	65	186	125
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	39	16	7	71	202	136
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	355	270	338	0	-	0
Stage 1	270	-	-	-	-	-
Stage 2	85	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	643	769	1221	-	-	-
Stage 1	775	-	-	-	-	-
Stage 2	938	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	639	769	1221	-	-	-
Mov Cap-2 Maneuver	639	-	-	-	-	-
Stage 1	770	-	-	-	-	-
Stage 2	938	-	-	-	-	-
Approach	EB	NB		SB		
HCMControlDelay, s	10.8	0.7		0		
HCMLOS	B					
Minor Lane/Major Mvmt	NBL	NBTEBLn1	SBT	SBR		
Capacity (veh/h)	1221	-	672	-		
HCM Lane V/C Ratio	0.005	-	0.082	-		
HCMControlDelay (s)	8	0	10.8	-		
HCM Lane LOS	A	A	B	-		
HCM95th %tile Q(veh)	0	-	0.3	-		



Intersection						
Int Delay, s/veh	1.6					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	49	21	6	99	266	109
Future Vol, veh/h	49	21	6	99	266	109
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	53	23	7	108	289	118
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	470	348	407	0	-	0
Stage 1	348	-	-	-	-	-
Stage 2	122	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	552	695	1152	-	-	-
Stage 1	715	-	-	-	-	-
Stage 2	903	-	-	-	-	-
Platoon blocked, %				-	-	-
MovCap-1 Maneuver	549	695	1152	-	-	-
MovCap-2 Maneuver	549	-	-	-	-	-
Stage 1	711	-	-	-	-	-
Stage 2	903	-	-	-	-	-
Approach	EB	NB		SB		
HCMControl Delay, s	12.1	0.5		0		
HCMLOS	B					
Minor Lane/Major Mvmt	NBL	NBTEBLn1	SBT	SBR		
Capacity (veh/h)	1152	-	586	-	-	
HCMLane V/C Ratio	0.006	-	0.13	-	-	
HCMControl Delay (s)	8.1	0	12.1	-	-	
HCMLane LOS	A	A	B	-	-	
HCM95th %tile Q(veh)	0	-	0.4	-	-	

Intersection						
Int Delay, s/veh	1.3					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	36	15	6	73	233	125
Future Vol, veh/h	36	15	6	73	233	125
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	39	16	7	79	253	136
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	414	321	389	0	-	0
Stage 1	321	-	-	-	-	-
Stage 2	93	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	595	720	1170	-	-	-
Stage 1	735	-	-	-	-	-
Stage 2	931	-	-	-	-	-
Platoon blocked, %				-	-	-
MovCap-1 Maneuver	591	720	1170	-	-	-
MovCap-2 Maneuver	591	-	-	-	-	-
Stage 1	731	-	-	-	-	-
Stage 2	931	-	-	-	-	-
Approach	EB	NB		SB		
HCMControl Delay, s	11.3	0.6		0		
HCMLOS	B					
Minor Lane/Major Mvmt	NBL	NBTEBLn1	SBT	SBR		
Capacity (veh/h)	1170	-	624	-	-	
HCMLane V/C Ratio	0.006	-	0.089	-	-	
HCMControl Delay (s)	8.1	0	11.3	-	-	
HCMLane LOS	A	A	B	-	-	
HCM95th %tile O(veh)	0	-	0.3	-	-	

Intersection						
Int Delay, s/veh	1.5					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	W			W	W	
Traffic Vol, veh/h	49	21	6	124	341	109
Future Vol, veh/h	49	21	6	124	341	109
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	53	23	7	135	371	118
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	579	430	489	0	-	0
Stage 1	430	-	-	-	-	-
Stage 2	149	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	477	625	1074	-	-	-
Stage 1	656	-	-	-	-	-
Stage 2	879	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	474	625	1074	-	-	-
Mov Cap-2 Maneuver	474	-	-	-	-	-
Stage 1	651	-	-	-	-	-
Stage 2	879	-	-	-	-	-
Approach	EB	NB		SB		
HCMControlDelay, s	13.3	0.4		0		
HCMLOS	B					
Minor Lane/Major Mvmt	NBL	NBTEBLn1	SBT	SBR		
Capacity (veh/h)	1074	-	511	-	-	
HCM Lane V/C Ratio	0.006	-	0.149	-	-	
HCMControlDelay (s)	8.4	0	13.3	-	-	
HCM Lane LOS	A	A	B	-	-	
HCM95th %tile Q(veh)	0	-	0.5	-	-	

Intersection						
Int Delay, s/veh	2.9					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↗	↗↗	↗	↘	↗↗
Traffic Vol, veh/h	0	249	683	54	216	452
Future Vol, veh/h	0	249	683	54	216	452
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	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	0	271	742	59	235	491
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	-	371	0	0	801	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.94	-	-	4.14	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.32	-	-	2.22	-
Pot Cap-1 Maneuver	0	*815	-	-	1143	-
Stage 1	0	-	-	-	-	-
Stage 2	0	-	-	-	-	-
Platoon blocked, %		1	-	-	1	-
MovCap-1 Maneuver	-	*815	-	-	1143	-
MovCap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	WB	NB		SB		
HCMControl Delay, s	11.6	0		2.9		
HCMLOS	B					
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT		
Capacity (veh/h)	-	-	815	1143	-	
HCMLane V/C Ratio	-	-	0.332	0.205	-	
HCMControl Delay (s)	-	-	11.6	9	-	
HCMLane LOS	-	-	B	A	-	
HCM95th %tile Q(veh)	-	-	1.5	0.8	-	
Notes						
~: Volume exceeds capacity		\$: Delay exceeds 300s		+: Computation Not Defined		*: All major volume in platoon

Intersection						
Int Delay, s/veh	3.2					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↗	↗↗	↗	↘	↗↗
Traffic Vol, veh/h	0	332	809	48	192	647
Future Vol, veh/h	0	332	809	48	192	647
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	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	0	361	879	52	209	703
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	-	440	0	0	931	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.94	-	-	4.14	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.32	-	-	2.22	-
Pot Cap-1 Maneuver	0	*737	-	-	*1102	-
Stage 1	0	-	-	-	-	-
Stage 2	0	-	-	-	-	-
Platoon blocked, %		1	-	-	1	-
MovCap-1 Maneuver	-	*737	-	-	*1102	-
MovCap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	WB	NB		SB		
HCMControl Delay, s	14.5	0		2.1		
HCMLOS	B					
Minor Lane/Major Mvmt	NBT	NBRWBLn1		SBL	SBT	
Capacity (veh/h)	-	-	737	*1102	-	
HCMLane V/C Ratio	-	-	0.49	0.189	-	
HCMControl Delay (s)	-	-	14.5	9	-	
HCMLane LOS	-	-	B	A	-	
HCM95th %tile Q(veh)	-	-	2.7	0.7	-	
Notes						
~: Volume exceeds capacity		\$: Delay exceeds 300s		+: Computation Not Defined		*: All major volume in platoon

Intersection						
Int Delay, s/veh	2.5					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↗	↗↗	↗	↘	↗↗
Traffic Vol, veh/h	0	249	984	54	216	658
Future Vol, veh/h	0	249	984	54	216	658
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	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	0	271	1070	59	235	715
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	-	535	0	0	1129	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.94	-	-	4.14	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.32	-	-	2.22	-
Pot Cap-1 Maneuver	0	*685	-	-	991	-
Stage 1	0	-	-	-	-	-
Stage 2	0	-	-	-	-	-
Platoon blocked, %		1	-	-	1	-
MovCap-1 Maneuver	-	*685	-	-	991	-
MovCap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	WB	NB		SB		
HCMControl Delay, s	13.6	0		2.4		
HCMLOS	B					
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT		
Capacity (veh/h)	-	-	685	991	-	
HCMLane V/C Ratio	-	-	0.395	0.237	-	
HCMControl Delay (s)	-	-	13.6	9.8	-	
HCMLane LOS	-	-	B	A	-	
HCM95th %tile Q(veh)	-	-	1.9	0.9	-	
Notes						
~: Volume exceeds capacity		\$: Delay exceeds 300s		+: Computation Not Defined		*: All major volume in platoon

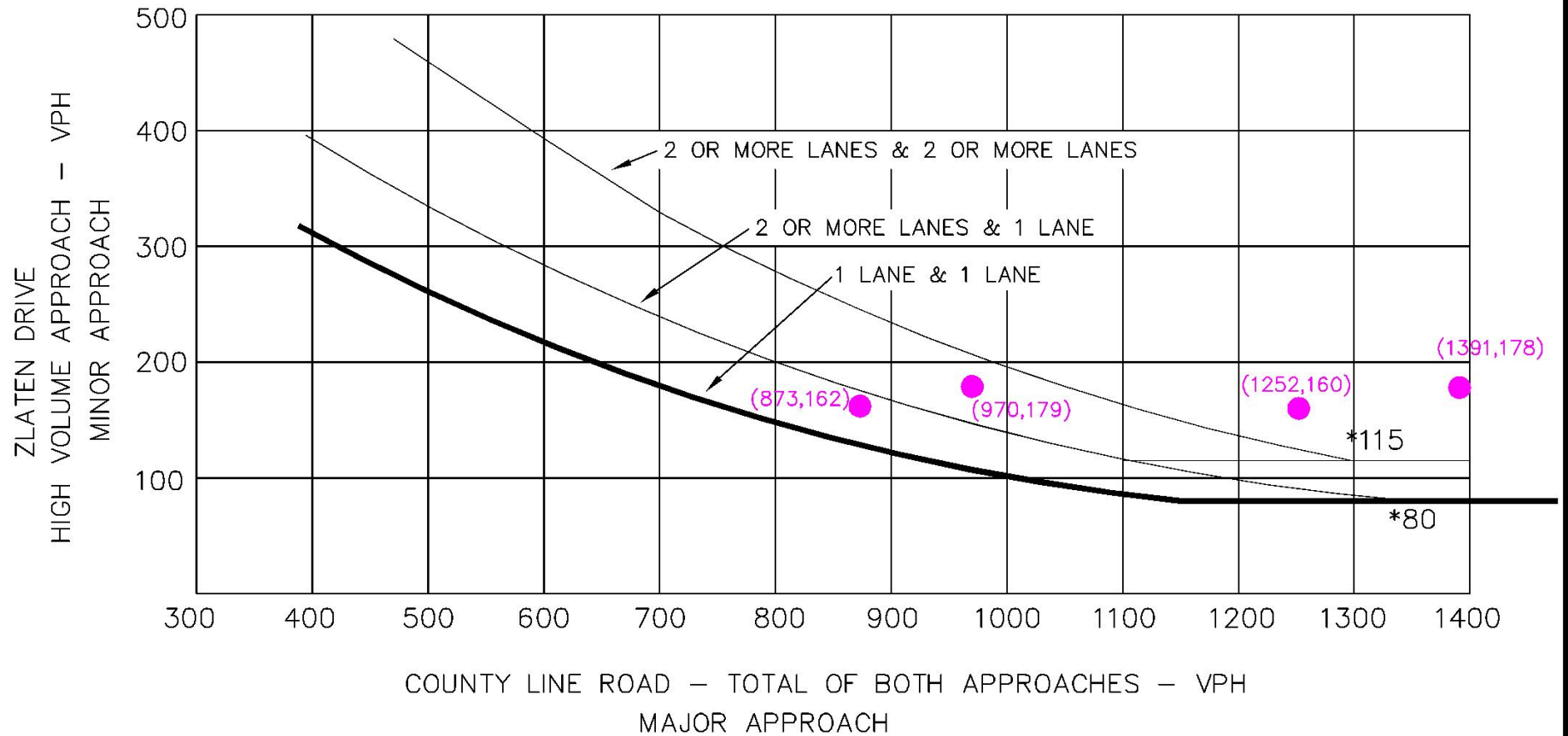
Intersection						
Int Delay, s/veh	3.3					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↗	↗↗	↗	↘	↗↗
Traffic Vol, veh/h	0	332	1181	48	192	933
Future Vol, veh/h	0	332	1181	48	192	933
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	150	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	0	361	1284	52	209	1014
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	-	642	0	0	1336	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.94	-	-	4.14	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.32	-	-	2.22	-
Pot Cap-1 Maneuver	0	*580	-	-	*868	-
Stage 1	0	-	-	-	-	-
Stage 2	0	-	-	-	-	-
Platoon blocked, %		1	-	-	1	-
MovCap-1 Maneuver	-	*580	-	-	*868	-
MovCap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	WB	NB		SB		
HCMControl Delay, s	20.9	0		1.8		
HCMLOS	C					
Minor Lane/Major Mvmt	NBT	NBRWBLn1		SBL	SBT	
Capacity (veh/h)	-	-	580	*868	-	
HCMLane V/C Ratio	-	-	0.622	0.24	-	
HCMControl Delay (s)	-	-	20.9	10.5	-	
HCMLane LOS	-	-	C	B	-	
HCM95th %tile Q(veh)	-	-	4.3	0.9	-	
Notes						
~: Volume exceeds capacity		\$: Delay exceeds 300s		+: Computation Not Defined		*: All major volume in platoon



# APPENDIX F

## Signal Warrant Analysis Worksheets

## WARRANT 2 - FOUR HOUR VEHICULAR VOLUME



SIGNAL WARRANT ANALYSIS  
ZLATEN DR & COUNTY LINE RD  
FOUR HOUR VOLUME WARRANT

\* NOTE: 115 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 80 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

● 2025 BACKGROUND TRAFFIC DATA POINT  
Source: Manual of Uniform Traffic Control Devices 2009

**Kimley»Horn**

# APPENDIX G

## Queue Analysis Worksheets

## Queues

2025 Total AM

## 1: County Line Rd &amp; SH-119

09/15/2022



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow(vph)	142	877	223	100	1684	381	586	342	77	567	401	540
v/c Ratio	0.99	0.57	0.27	0.51	1.06	0.41	1.08	0.65	0.05	1.04	0.76	0.34
Control Delay	131.1	27.4	3.6	49.2	76.1	10.2	106.0	57.7	0.1	99.5	59.0	0.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	131.1	27.4	3.6	49.2	76.1	10.2	106.0	57.7	0.1	99.5	59.0	0.6
Queue Length 50th (ft)	57	264	0	38	~778	77	~261	141	0	~245	158	0
Queue Length 95th (ft)	#126	329	46	m38	m#749	m74	#380	194	0	#359	215	0
Internal Link Dist (ft)		729			1332			691			385	
Turn Bay Length (ft)	425			275		900	450		300	425		325
Base Capacity (vph)	143	1536	813	200	1592	921	543	530	1583	543	530	1583
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.99	0.57	0.27	0.50	1.06	0.41	1.08	0.65	0.05	1.04	0.76	0.34

## Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

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

Queue shown is maximum after two cycles.













m Volume for 95th percentile queue is metered by upstream signal.

## Queues

2025 Total PM

## 1: County Line Rd &amp; SH-119

09/15/2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow(vph)	381	1600	409	72	970	524	493	553	108	469	379	220
v/c Ratio	0.72	0.95	0.45	0.50	0.79	0.66	0.96	0.99	0.07	0.97	0.72	0.14
Control Delay	56.1	43.8	7.6	61.6	42.2	23.2	75.5	83.3	0.1	84.4	56.9	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	56.1	43.8	7.6	61.6	42.2	23.2	75.5	83.3	0.1	84.4	56.9	0.2
Queue Length 50th (ft)	146	630	50	26	406	252	197	236	0	188	148	0
Queue Length 95th (ft)	190	#808	127	m36	#508	377	#306	#355	0	#294	203	0
Internal Link Dist (ft)		729			1332			691			385	
Turn Bay Length (ft)	425			275		900	450		300	425		325
Base Capacity (vph)	715	1687	909	143	1223	796	514	560	1583	486	530	1583
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.53	0.95	0.45	0.50	0.79	0.66	0.96	0.99	0.07	0.97	0.72	0.14

## Intersection Summary

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

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

## Queues

2045 Total AM

## 1: County Line Rd &amp; SH-119

09/15/2022



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow(vph)	209	1252	272	129	2495	566	757	469	103	803	548	806
v/c Ratio	1.46	0.61	0.34	0.58	1.15	0.58	1.26	0.88	0.07	1.28	0.98	0.51
Control Delay	281.8	30.2	4.0	47.4	111.4	13.0	167.5	71.5	0.1	176.8	83.6	1.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	281.8	30.2	4.0	47.4	111.4	13.0	167.5	71.5	0.1	176.8	83.6	1.2
Queue Length 50th (ft)	~114	279	0	48	~862	192	~382	198	0	~405	225	0
Queue Length 95th (ft)	#193	328	53	m47	m#815	m174	#507	#290	0	#529	#341	0
Internal Link Dist (ft)		729			1332			691			385	
Turn Bay Length (ft)	425			275		900	450		300	425		325
Base Capacity (vph)	143	2042	798	228	2161	975	600	530	1583	629	560	1583
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.46	0.61	0.34	0.57	1.15	0.58	1.26	0.88	0.07	1.28	0.98	0.51

## Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

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

Queue shown is maximum after two cycles.













m Volume for 95th percentile queue is metered by upstream signal.

## Queues

2045 Total PM

## 1: County Line Rd &amp; SH-119

09/15/2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow(vph)	559	2332	537	93	1417	775	633	753	143	668	526	327
v/c Ratio	1.03	1.12	0.63	0.65	0.96	1.02	0.96	1.16	0.09	1.17	0.94	0.21
Control Delay	95.8	96.5	12.7	63.2	56.2	63.5	64.3	128.1	0.1	137.3	75.9	0.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	95.8	96.5	12.7	63.2	56.2	63.5	64.3	128.1	0.1	137.3	75.9	0.3
Queue Length 50th (ft)	~238	~763	105	34	428	~473	253	~371	0	~317	214	0
Queue Length 95th (ft)	#351	#857	226	m47	#510	#651	#362	#500	0	#436	#322	0
Internal Link Dist (ft)		729			1332			691			385	
Turn Bay Length (ft)	425			275		900	450		300	425		325
Base Capacity (vph)	543	2076	854	143	1483	761	657	648	1583	572	560	1583
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.03	1.12	0.63	0.65	0.96	1.02	0.96	1.16	0.09	1.17	0.94	0.21

## Intersection Summary

- ~ Volume exceeds capacity, queue is theoretically infinite.  
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.  
Queue shown is maximum after two cycles.
- m Volume for 95th percentile queue is metered by upstream signal.



Queues  
3: Zlaten Dr & SH-119

2025 Total AM

09/14/2022



Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBT
Lane Group Flow(vph)	71	1437	8	53	2417	17	108	156
v/c Ratio	0.97	0.61	0.01	0.45	1.03	0.06	0.34	0.70
Control Delay	131.5	17.2	0.0	65.7	46.9	44.4	15.5	56.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	131.5	17.2	0.0	65.7	46.9	44.4	15.5	56.3
Queue Length 50th (ft)	58	415	0	40	~1053	5	11	94
Queue Length 95th (ft)	m#95	m441	m0	83	#1188	17	64	#189
Internal Link Dist (ft)		1150			462		432	458
Turn Bay Length (ft)	200			1000		100		
Base Capacity (vph)	73	2338	1070	132	2351	302	321	223
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	0.97	0.61	0.01	0.40	1.03	0.06	0.34	0.70

Intersection Summary

- ~ Volume exceeds capacity, queue is theoretically infinite.  
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.  
Queue shown is maximum after two cycles.
- m Volume for 95th percentile queue is metered by upstream signal.

Queues  
3: Zlaten Dr & SH-119

2025 Total PM  
09/14/2022



Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBT
Lane Group Flow(vph)	60	2072	28	120	1810	36	129	121
v/c Ratio	0.54	0.94	0.03	0.82	0.77	0.11	0.38	0.55
Control Delay	48.4	28.3	1.8	93.6	17.5	45.2	14.0	45.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	48.4	28.3	1.8	93.6	17.5	45.2	14.0	45.0
Queue Length 50th (ft)	46	561	0	93	503	12	9	65
Queue Length 95th (ft)	m48	m512	m0	#199	606	28	65	130
Internal Link Dist (ft)		1150			462		432	458
Turn Bay Length (ft)	200			1000		100		
Base Capacity (vph)	118	2214	1017	147	2343	326	339	220
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	0.51	0.94	0.03	0.82	0.77	0.11	0.38	0.55

Intersection Summary

- # 95th percentile volume exceeds capacity, queue may be longer.  
Queue shown is maximum after two cycles.
- m Volume for 95th percentile queue is metered by upstream signal.

Queues  
3: Zlaten Dr & SH-119

2045 Total AM

09/14/2022



Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBT
Lane Group Flow(vph)	71	2078	12	76	3508	24	144	156
v/c Ratio	0.97	0.62	0.01	0.61	1.04	0.08	0.47	0.81
Control Delay	106.8	19.8	0.0	74.8	47.1	44.8	27.3	70.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	106.8	19.8	0.0	74.8	47.1	44.8	27.3	70.5
Queue Length 50th (ft)	55	420	0	58	~1073	8	45	96
Queue Length 95th (ft)	m#66	m420	m0	#119	#1151	21	111	#215
Internal Link Dist (ft)		1150			462		432	458
Turn Bay Length (ft)	200			1000		100		
Base Capacity (vph)	73	3348	1067	132	3381	302	309	192
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	0.97	0.62	0.01	0.58	1.04	0.08	0.47	0.81

Intersection Summary

- ~ Volume exceeds capacity, queue is theoretically infinite.  
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.  
Queue shown is maximum after two cycles.
- m Volume for 95th percentile queue is metered by upstream signal.

Queues  
3: Zlaten Dr & SH-119

2045 Total PM

09/14/2022



Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBT
Lane Group Flow(vph)	60	3022	40	170	2598	53	181	121
v/c Ratio	0.54	0.95	0.04	1.16	0.77	0.16	0.55	0.69
Control Delay	44.1	27.4	0.8	170.7	16.5	46.0	27.0	56.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	44.1	27.4	0.8	170.7	16.5	46.0	27.0	56.8
Queue Length 50th (ft)	46	488	1	~155	501	18	52	67
Queue Length 95th (ft)	m40	m259	m0	#297	565	38	128	#156
Internal Link Dist (ft)		1150			462		432	458
Turn Bay Length (ft)	200			1000		100		
Base Capacity (vph)	118	3178	1016	147	3373	326	330	175
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	0.51	0.95	0.04	1.16	0.77	0.16	0.55	0.69

Intersection Summary

- ~ Volume exceeds capacity, queue is theoretically infinite.  
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.  
Queue shown is maximum after two cycles.
- m Volume for 95th percentile queue is metered by upstream signal.



Lane Group	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow(vph)	42	110	12	234	6	586	70	404	12
v/c Ratio	0.34	0.58	0.06	0.62	0.01	0.26	0.12	0.30	0.01
Control Delay	44.6	62.1	46.0	13.4	6.8	10.7	2.2	3.2	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	44.6	62.1	46.0	13.4	6.8	10.7	2.2	3.2	0.0
Queue Length 50th (ft)	20	83	8	0	1	97	4	26	0
Queue Length 95th (ft)	56	136	26	73	6	164	m10	58	m0
Internal Link Dist (ft)	303		1344			448		532	
Turn Bay Length (ft)		150		150	225		350		
Base Capacity (vph)	293	361	380	509	697	2292	589	1334	1160
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	0.14	0.30	0.03	0.46	0.01	0.26	0.12	0.30	0.01

## Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

## Queues

2025 Total PM

## 5: County Line Rd &amp; Zlaten Dr

09/14/2022



Lane Group	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow(vph)	37	135	12	211	23	769	191	456	21
v/c Ratio	0.31	0.63	0.05	0.56	0.04	0.36	0.38	0.36	0.02
Control Delay	42.0	62.5	44.2	12.0	7.2	13.6	7.5	6.7	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	42.0	62.5	44.2	12.0	7.2	13.6	7.5	6.7	0.1
Queue Length 50th (ft)	16	101	8	0	5	152	21	72	0
Queue Length 95th (ft)	50	160	26	67	16	253	m41	359	m0
Internal Link Dist (ft)	303		1344			448		532	
Turn Bay Length (ft)		150		150	225		350		
Base Capacity (vph)	282	317	333	456	639	2165	585	1276	1115
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	0.13	0.43	0.04	0.46	0.04	0.36	0.33	0.36	0.02

## Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

## Queues

2045 Total AM

## 5: County Line Rd &amp; Zlaten Dr

09/14/2022



Lane Group	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow(vph)	61	132	14	303	10	838	91	599	17
v/c Ratio	0.44	0.61	0.06	0.66	0.02	0.39	0.21	0.46	0.02
Control Delay	45.0	60.9	44.1	12.3	8.1	14.3	3.0	6.7	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	45.0	60.9	44.1	12.3	8.1	14.3	3.0	6.7	0.0
Queue Length 50th (ft)	29	99	10	0	2	166	6	63	0
Queue Length 95th (ft)	71	155	28	80	10	275	m11	581	m0
Internal Link Dist (ft)	303		1344			448		532	
Turn Bay Length (ft)		150		150	225		350		
Base Capacity (vph)	298	361	380	564	516	2143	442	1292	1127
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	0.20	0.37	0.04	0.54	0.02	0.39	0.21	0.46	0.02

## Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.



## Queues

2045 Total PM

## 5: County Line Rd &amp; Zlaten Dr

09/14/2022



Lane Group	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow(vph)	55	161	16	289	34	1106	253	678	31
v/c Ratio	0.40	0.66	0.06	0.62	0.08	0.61	0.62	0.57	0.03
Control Delay	41.6	61.0	42.4	11.0	9.9	25.2	14.1	15.5	0.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	41.6	61.0	42.4	11.0	9.9	25.2	14.1	15.5	0.4
Queue Length 50th (ft)	23	120	11	0	8	313	29	415	0
Queue Length 95th (ft)	64	181	30	75	24	499	m54	640	m2
Internal Link Dist (ft)	303		1344			448		532	
Turn Bay Length (ft)		150		150	225		350		
Base Capacity (vph)	288	323	340	525	425	1806	434	1199	1052
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	0.19	0.50	0.05	0.55	0.08	0.61	0.58	0.57	0.03

## Intersection Summary

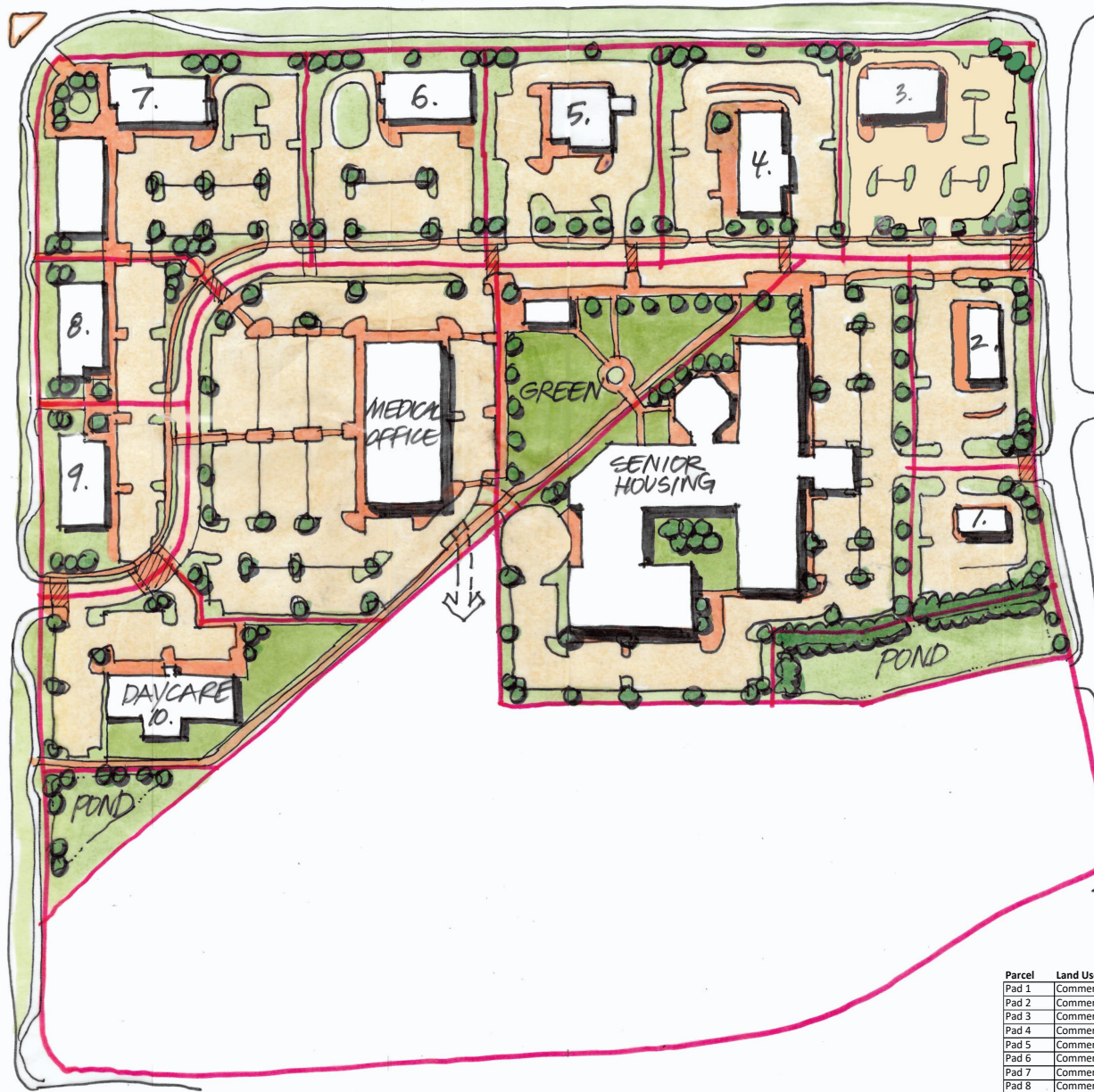
m Volume for 95th percentile queue is metered by upstream signal.

# APPENDIX H

## Conceptual Site Plan

HWY 119

COUNTY LINE



Area				Proposed Gross Areas (SF)							
Parcel	Land Use	SF	A.C.	Commercial	Med Office	Sr. Housing	FAR	Ratio	Notes		
Pad 1	Commercial	26,840	0.62	5,500			0.17	45	10 / 1,000 SF	10	Drive-thru possible
Pad 2	Commercial	43,640	1.00	5,500			0.13	55	10 / 1,000 SF	10	Drive-thru possible
Pad 3	Commercial	63,830	1.47	5,500			0.09	66	12 / 1,000 SF	12	Drive-thru possible
Pad 4	Commercial	60,185	1.38	6,000			0.10	72	12 / 1,000 SF	12	Drive-thru possible
Pad 5	Commercial	60,185	1.38	6,000			0.10	72	12 / 1,000 SF	12	Drive-thru possible
Pad 6	Commercial	60,185	1.38	6,000			0.10	60	10 / 1,000 SF	10	Drive-thru possible
Pad 7	Commercial	84,942	1.95	14,400			0.17	98	6.8 / 1,000 SF	7	Multi-tenant w/ Drive-thru
Pad 8	Commercial	37,180	0.85	6,000			0.16	36	6 / 1,000 SF	6	Multi-tenant possible
Pad 9	Commercial	42,107	0.97	6,000			0.14	36	6 / 1,000 SF	6	Multi-tenant possible
Pad 10	Daycare	70,620	1.62	10,000			0.14	50	5 / 1,000 SF	5	
MOB	Medical Office	165,675	3.80		60,000		0.36	300	5 / 1,000 SF	5	3-Story Building, 80K SF max. possible
SRH	Senior Housing	212,105	4.87			130,000	0.61	130	1 per Bedroom		
PARK	Green Space	64,160	1.47					30	Shared On-Street		30-Story Building (much larger)
POND (2)	Storm Drainage	57,691	1.32						possible		
TOTALS		1,049,345	24.09	69,900	60,000	130,000	0.25	1,050			Pond sizes TBD by others

Parcel	Land Use	Area		Proposed Gross Areas (SF)				Ratio	Notes
		SF	AC.	Commercial	Med Office	Sr. Housing	FAR		
Pad 1	Commercial	26,840	0.62	5,000			0.17	45	10 / 1,000 SF 10 Drive-thru possible
Pad 2	Commercial	43,640	1.00	5,500			0.13	55	10 / 1,000 SF 10 Drive-thru possible
Pad 3	Commercial	63,830	1.47	5,500			0.09	66	12 / 1,000 SF 12 Drive-thru possible
Pad 4	Commercial	60,185	1.38	6,000			0.10	72	12 / 1,000 SF 12 Drive-thru possible
Pad 5	Commercial	60,185	1.38	6,000			0.10	72	12 / 1,000 SF 12 Drive-thru possible
Pad 6	Commercial	60,185	1.38	6,000			0.10	60	10 / 1,000 SF 10 Drive-thru possible
Pad 7	Commercial	84,942	1.95	14,400			0.17	98	6.8 / 1,000 SF 7 Multi-tenant w/ Drive-thru
Pad 8	Commercial	37,180	0.85	6,000			0.16	36	6 / 1,000 SF 6 Multi-tenant possible
Pad 9	Commercial	42,107	0.97	6,000			0.14	36	6 / 1,000 SF 6 Multi-tenant possible
Pad 10	Daycare	70,620	1.62	10,000			0.14	50	5 / 1,000 SF 5
MOB	Medical Office	165,675	3.80		60,000		0.36	300	5 / 1,000 SF 5 3-Story Building, 80K SF max. possible
SRH	Senior Housing	212,105	4.87			130,000	0.61	130	1 per Bedroom possible
PARK	Green Space	64,160	1.47					30	Shared On-Street possible
PONDS (2)	Storm Drainage	57,691	1.32						30-35K Building footprints (larger)
TOTALS		1,049,345	24.09	69,900	60,000	130,000	0.25	1,050	Pond sizes TBD by others

E. KEN PRATT BLVD  
(HIGHWAY 119)  
PUBLIC R.O.W. VARIES

DEVELOPER PROPOSED  
LANDSCAPING (TYP.)

EXISTING PROPERTY LINE

PROPOSED LOT 5, BLOCK 1  
SANDSTONE MARKETPLACE SUBDIVISION  
FILING NO. 1 REPLAT B  
OWNER: SSC INVESTORS LLC

PROPOSED PROPERTY LINE

ROLLED ASPHALT CURB END  
START

ROLLED ASPHALT CURB START

CONNECT CURB AND GUTTER  
TO MASTER DEVELOPER  
CURB AND GUTTER

BRIEN AVENUE  
44.0' (PUBLIC R.O.W.)

PROPOSED FIRE HYDRANT  
BY MASTER DEVELOPER

CONNECT CURB AND GUTTER  
TO MASTER DEVELOPER  
CURB AND GUTTER

PROPOSED LOT 3, BLOCK 2  
SANDSTONE MARKETPLACE SUBDIVISION  
FILING NO. 1 REPLAT B  
OWNER: SSC INVESTORS LLC

6" CURB/EDGE  
OF RAMP

6" CURB/EDGE  
OF RAMP

RAMP WIDTH PER PLAN

2' TRANSITION

2' TRANSITION

4" THICK  
CONCRETE

PROP. ASPHALT PAVEMENT  
2.5' CONCRETE SECTION

LINE AND CURVE  
INFORMATION TAKEN AT FL

PROP. LANDSCAPING

6" CURB

6" CURB

6" CURB

6" CURB

PROPOSED LOT 4, BLOCK 1  
SANDSTONE MARKETPLACE SUBDIVISION  
FILING NO. 1 REPLAT A  
OWNER: SSC INVESTORS LLC

6" CURB PER  
LONGMONT STD. DTL.  
200.07

FLOWLINE

1' SLOT

1.00%

FG

LANDSCAPING

## LEGEND

PROPERTY LINE	PROPOSED CONCRETE PAVEMENT
EXISTING EASEMENT	PROPOSED COLORED CONCRETE PAVEMENT
EXISTING LANDSCAPE EASEMENT	PROPOSED LANDSCAPE
PROPOSED FLUSH CURB AND GUTTER	PROPOSED HEAVY DUTY CONCRETE
PROPOSED 6" CURB AND GUTTER	DEVELOPER PROPOSED VEGETATION
PROPOSED PARKING COUNT	DEVELOPER PROPOSED CONCRETE SIDEWALK
EXISTING SIGN	
EXISTING IRRIGATION MH	
EXISTING TREE TO REMAIN	
EXISTING LIGHT POLE	

## GENERAL NOTES

- CONTRACTOR TO VERIFY EXISTING IMPROVEMENTS SHOWN ON THE PLAN.
- CONTRACTOR TO PROTECT IN PLACE, DURING DEMOLITION AND CONSTRUCTION, ALL EXISTING IMPROVEMENTS THAT ARE TO REMAIN UNLESS NOTED ON THE PLAN.
- ANY EXISTING STRUCTURE, IMPROVEMENT OR APPURTENANCE TO REMAIN THAT IS DAMAGED DURING DEMOLITION OR CONSTRUCTION SHALL BE IMMEDIATELY REPAIRED OR REPLACED BY THE CONTRACTOR AT THE CONTRACTOR'S EXPENSE.
- PARKING STALL STRIPING SHALL BE 4" WIDE UNLESS OTHERWISE NOTED.
- ALL LOADING DOCKS, TRUCK PARKING, OUTDOOR STORAGE, UTILITY METERS, HVAC AND OTHER MECHANICAL EQUIPMENT, TRASH COLLECTION, RECYCLING COLLECTION, TRASH COMPACTION AND OTHER SERVICE FUNCTIONS SHALL BE INCORPORATED INTO THE OVERALL DESIGN THEME OF THE BUILDING AND THE LANDSCAPE SO THAT THE ARCHITECTURAL DESIGN IS CONTINUOUS AND UNINTERRUPTED BY LADDERS, TOWERS, FENCES, AND EQUIPMENT AND THESE AREAS SHALL BE LOCATED AND SCREENED SO THAT THE VISUAL AND ACOUSTIC IMPACTS OF THESE FUNCTIONS ARE FULLY CONTAINED AND CUT OFF VIEW FROM ADJACENT PROPERTIES AND PUBLIC RIGHTS-OF-WAY. SCREENING MATERIALS SHALL BE SIMILAR TO AND OF THE SAME QUALITY AS THE PRINCIPAL MATERIALS OF THE PRIMARY BUILDINGS AND LANDSCAPE. RELOCATE YOUR TRASH ENCLOSURE TO MEET CITY STANDARDS. PLEASE REVIEW SECTION 15.05.130 OF LONGMONT DEVELOPMENT CODE REGARDING PLACEMENT AND DESIGN OF TRASH ENCLOSURES, ETC..

## CONSTRUCTION NOTES

- CURB AND GUTTER PER CITY OF LONGMONT STANDARD DETAIL 200.07 (REF SHEET 30. REF. DTL THIS SHEET FOR CURB TYPE TRANSITIONS)
- 6" CURB PER MCDONALD'S STANDARDS AND SPECIFICATIONS (REF SHEET 2)
- CONCRETE SIDEWALK PER CITY OF LONGMONT STANDARD DETAIL 200.04 (REF SHEET 30)
- PEDESTRIAN CDOT CURB RAMP (TYPE PER SHEET 5)
- SECONDARY BUILDING ENTRANCE. REFER TO ARCHITECTURAL PLANS FOR ADDITIONAL INFORMATION
- PROPOSED MONUMENT SIGN. REFER TO SIGNAGE PLAN FOR ADDITIONAL INFORMATION.
- FRONT BUILDING ENTRANCE. REFER TO ARCHITECTURAL PLANS FOR ADDITIONAL INFORMATION
- PAY/PICKUP WINDOW. REFER TO ARCHITECTURAL PLANS FOR ADDITIONAL INFORMATION
- PROPOSED ADA SYMBOL (REF SHEET 7)
- PROPOSED ADA SIGN (REF SHEET 7)
- DUMPSTER ENCLOSURE AND SHED. REFER TO STRUCTURAL PLANS FOR ADDITIONAL INFORMATION
- 4" WIDE DIAGONAL PAVEMENT MARKINGS AT 36" ON CENTER
- PEDESTRIAN CROSSWALK (PUBLIC OR PRIVATE SPECIFIED PER PLAN)
- STANDARD-DUTY ASPHALT PAVEMENT PER TERRACON GEOTECHNICAL REPORT DATED DECEMBER 22ND 2022
- PROPOSED MOBILE ORDER PICK-UP SIGN
- PROPOSED LIGHT POLE. REFER TO PHOTOMETRIC PLAN FOR ADDITIONAL INFORMATION
- PROPOSED TRANSFORMER
- PROPOSED BICYCLE PARKING (REF SHEET 7)
- PROPOSED PRE-SELL MENU BOARD PER MCDONALD'S STANDARDS AND SPECIFICATIONS (REF SHEET 7)
- PROPOSED MENU BOARD PER MCDONALD'S STANDARDS AND SPECIFICATIONS (REF SHEET 7)
- PROPOSED CONCRETE WHEEL STOPS
- PROPOSED FLUSH CURB PER DTL'S THIS SHEET
- PROPOSED SLOTTED CURB (1-FIT CURB CUT PLACED EVERY 10-FIT) PER DTL THIS SHEET
- PROPOSED 1-FIT CURB CUT (REF. SLOTTED CURB DETAIL THIS SHEET)
- PROPOSED 6" MOUNTABLE CURB AND GUTTER (TYPE 2 SECTION IM) PER CDOT STD. DTL. M-609-1 (REF SHEET 32)
- PROPOSED PEDESTRIAN GRATE OVER STORM CHASE
- PROPOSED ADA ACCESSIBLE EV CHARGER INSTALLED SPACE
- PROPOSED EV CHARGER
- PROPOSED EV READY STALL
- PROPOSED EV CAPABLE STALL
- PROPOSED EV CAPABLE LIGHT STALL

TRANSITION FROM 6" TO  
FLUSH CURB  
N.T.S.

TRANSITION FROM 6" TO FLUSH  
CURB WITH CURB RAMP  
N.T.S.


FLUSH CURB DETAIL  
N.T.S.

SLOTTED CURB  
CROSS SECTION  
N.T.S.

SLOTTED CURB  
PROFILE  
N.T.S.

Planning and Zoning Commission (Livestreamed), June 26, 2024

Kimley»Horn



6/3/2024

PREPARED FOR:  
**McDonald's USA, LLC**

DESIGNED BY:  
**SSC INVESTORS LLC**

CHECKED BY:  
**SSC INVESTORS LLC**

DATE:  
**06/03/2024**

SITE PLAN  
DESCRIPTION

SITE PLAN  
DESCRIPTION

SITE 10  
5110.4

DATE  
6/3/2024

REV  
1

DATE  
6/3/2024

REV  
1

BY  
SSC INVESTORS LLC

DESCRIPTION  
SITING



CAUTION: NOTICE TO CONTRACTOR  
THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES AS SHOWN ON THESE PLANS IS BASED ON RECORDS OF THE VARIOUS UTILITY COMPANIES AND, WHERE POSSIBLE, MEASUREMENTS TAKEN IN THE FIELD. THE INFORMATION IS NOT TO BE RELIED ON AS BEING EXACT OR COMPLETE. THE CONTRACTOR MUST CALL THE LOCAL UTILITY LOCATION CENTER AT LEAST 48 HOURS BEFORE ANY EXCAVATION TO REQUEST EXACT FIELD LOCATIONS OF THE UTILITIES. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATE ALL EXISTING UTILITIES WHICH CONFLICT WITH THE PROPOSED IMPROVEMENTS SHOWN ON THE PLANS.





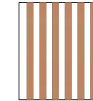
# MATERIAL LEGEND



MODULAR FACE BRICK  
COLOR:  
B1 = "SLATE GRAY"  
SMOOTH BY HEBRON  
BRICK COMPANY



EXTERIOR INSULATION  
FINISH SYSTEM (E.I.F.S.)  
COLOR:  
C1 = "IRON ORE" SW 7069  
BY SHERWIN WILLIAMS



ALUMINUM BATTEN SYSTEM  
MFR: B+H INDUSTRIES  
SIZE: 2"x2" PROFILE  
COLOR: WOOD GRAIN



ALPOLIC METAL PANEL  
COLOR: DON GRAY



ALUMINUM CANOPY  
COLOR: WHITE



GOLD UNDERSCORE



EXTERIOR WINDOW ASSEMBLY  
COLOR: DARK BRONZE

1  
A2.0 WEST ELEVATION  
1/4" = 1'-0"



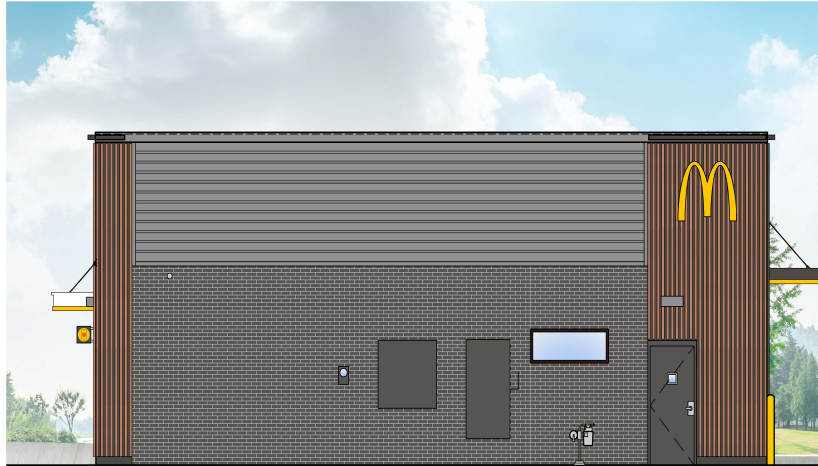
2  
A2.0 SOUTH ELEVATION  
1/4" = 1'-0"

PREPARED BY:  
**ARRIS**  
ARCHITECTURE  
Arrie Architecture, LLC  
3436 New Castle Dr.  
Loveland, CO 80538  
970.888.6302  
corry@arriesinc.net

PROPOSED FOR:  
**McDonald's USA, LLC**  
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TITLE  
2022 STANDARD BUILDING - BB20  
4597-WOOD/WOOD  
DESIGNED BY  
WOOD BEARING WALLS W/ WAREHOUSE PLANK EXTERIOR FINISH  
WOOD TRUSS ROOF FINISH  
ALPOLIC/CLIMATEKRAFT PLANK EXTERIOR FINISH  
ALPOLIC/CLIMATEKRAFT PLANK EXTERIOR FINISH  
LOT 6, BLOCK 1, SANDSTONE MARKET PLACE SUBDIVISION  
1100 S. 101ST AVE., SUITE 100, DENVER, CO 80231  
025-1014  
09/23/23

SHEET NO.  
**A2.0**  
EXTERIOR ELEVATIONS



# MATERIAL LEGEND



MODULAR FACE BRICK  
COLOR:  
B1 = "SLATE GRAY"  
SMOOTH BY HEBRON  
BRICK COMPANY



EXTERIOR INSULATION  
FINISH SYSTEM (E.I.F.S.)  
COLOR:  
C1 = "IRON ORE" SW 7069  
BY SHERWIN WILLIAMS



ALUMINUM BATTEN SYSTEM  
MFR: B+H INDUSTRIES  
SIZE: 3/4\"/>



ALPOLYC METAL PANEL  
COLOR: DON GRAY



ALUMINUM CANOPY  
COLOR: WHITE



GOLD UNDERSCORE



EXTERIOR WINDOW ASSEMBLY  
COLOR: DARK BRONZE

1  
A2.0 EAST ELEVATION  
1/4" = 1'-0"



2  
A2.0 NORTH ELEVATION  
1/4" = 1'-0"

PREPARED BY:  
**ARRIS**  
ARCHITECTURE  
Arrie Architecture, LLC  
3436 New Castle Dr.  
Loveland, CO 80538  
970.888.6302  
corneys@arriesinc.net

PROJECT FOR:  
**McDonald's USA, LLC**  
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DRAWN BY:  
CCT  
DATE: 08/22/23

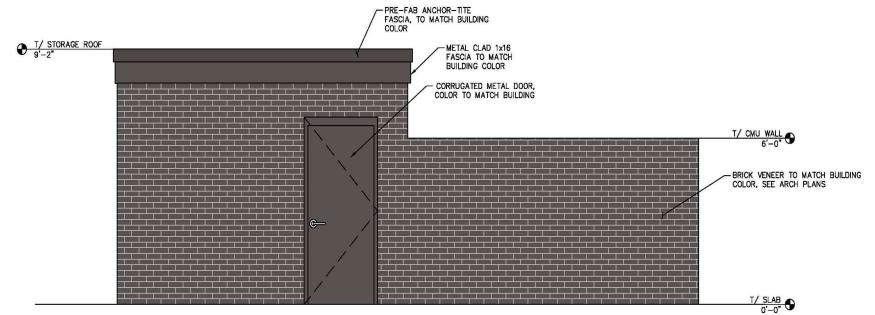
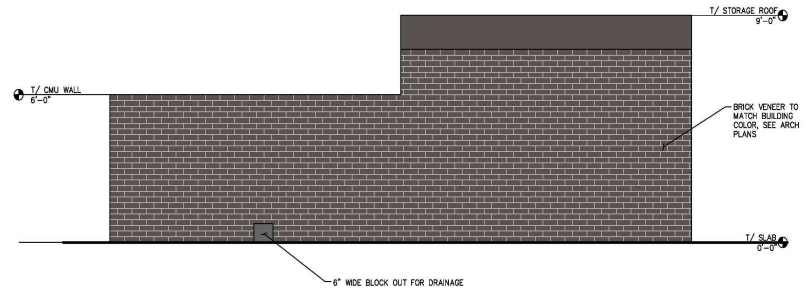
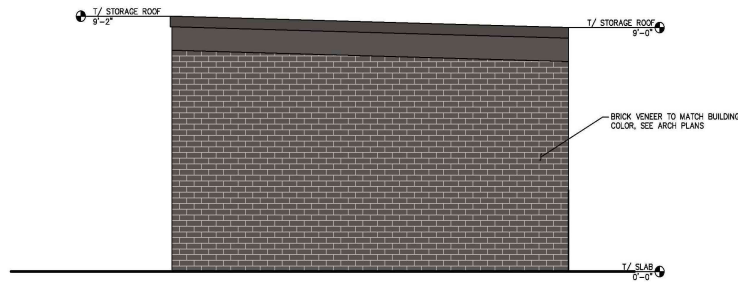
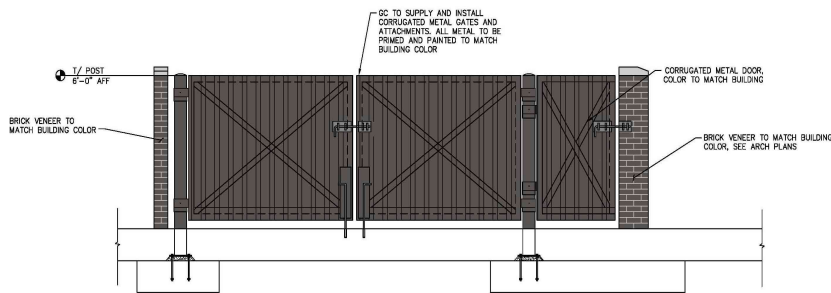
REVIEWED BY:  
DATE: 08/22/23

PROJECT #:  
0822-23

TITLE:  
2022 STANDARD BUILDING - B820  
4597 WOOD/WOOD  
OWNER:  
WOOD/BEARING WALLS/WANDEE PLANK EXTERIOR FINISH  
WOOD TRUSS ROOF/FRAMING  
ALPOLYC/METAL PANEL EXTERIOR FINISH  
ALPOLYC/METAL PANEL EXTERIOR FINISH  
LOT 6, BLOCK 1, SANDSTONE MARKET PLACE SUBDIVISION  
1100 S. 10TH AVE., SUITE 100, DENVER, CO 80202

SHEET NO.  
**A2.1**  
EXTERIOR ELEVATIONS





CAUTION: NOTICE TO CONTRACTOR

THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES AS SHOWN ON THESE PLANS IS BASED ON RECORDS OF THE VARIOUS UTILITY COMPANIES AND, WHERE POSSIBLE, MEASUREMENTS TAKEN IN THE FIELD. THE INFORMATION IS NOT TO BE RELIED ON AS BEING EXACT OR COMPLETE. THE CONTRACTOR MUST CALL THE LOCAL UTILITY LOCATION CENTER AT LEAST 48 HOURS BEFORE ANY EXCAVATION TO REQUEST EXACT FIELD LOCATIONS OF THE UTILITIES. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATE ALL EXISTING UTILITIES WHICH CONFLICT WITH THE PROPOSED STRUCTURES SHOWN ON THE PLANS.

SITE PLAN		JUN		MCDONALD'S USA, LLC		KIMLEY»HORN																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																											
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CITY OF LONGMONT | Planning Division

## Certificate of Mailing

I, Meaghan Farrell, certify that letters of notification were mailed in accordance with Section 15.02 of the City of Longmont Land Development Code for a

☒ Neighborhood Meeting

☐ Notice of Application

☐ Planning and Zoning Commission Public Hearing to be held on \_\_\_\_\_

☐ City Council Public Hearing to be held on \_\_\_\_\_

for the application identified as

McDonald's at Sandstone Marketplace

*Project Name*

On the subject property located at

South side of E. Ken Pratt Blvd, between CR1 + Timm Way

*Site Address or Location Description*

The letter(s) was/were sent on 3/14/23

*A copy of the letter and list of recipients is attached.*

I certify that the foregoing information is true and correct.

Meaghan Farrell  
*Signature*

3/14/23  
*Date*



CITY OF LONGMONT | Planning Division

## CERTIFICATE OF PROPERTY POSTING

I, James Waller, certify that 1 sign(s) were posted pursuant to  
*Please Print Name*

the provisions of the City of Longmont Land Development Code, for the application identified as  
McDonald's @ Sandstone Marketplace for a:  
*Project Name*

☒ Neighborhood Meeting

☐ Notice of Application

☐ Planning and Zoning Commission Public Hearing to be held on \_\_\_\_\_

☐ City Council Public Hearing to be held on \_\_\_\_\_

On the subject property located at

SEC of County Line Rd and Ken Pratt Blvd  
*Site Address or Location Description*

Attach photos of posting:

I certify that the foregoing information is true and correct.

James P Waller

*Signature*

James Waller

*Printed Name*

3/29/2023

*Date*





## CITY OF LONGMONT | Planning Division

March 14, 2023

# Notice of Neighborhood Meeting

*If you need interpretation, accommodations, or other special assistance in order to participate in a meeting, please contact the Planning Division at 303-651-8330 or [longmont.planning@longmontcolorado.gov](mailto:longmont.planning@longmontcolorado.gov), at least 48 hours prior to the meeting to make arrangements.*

*Si necesita interpretación, servicios especiales u otra asistencia adicional para participar en alguna reunión, comuníquese con 48 horas de anticipación al Departamento de Planificación Urbana al 303-651-8330 o escribanos a [longmont.planning@longmontcolorado.gov](mailto:longmont.planning@longmontcolorado.gov), para así hacer los pertinentes arreglos.*

## McDonald's at Sandstone Marketplace

**Proposal:** Construction of a McDonald's restaurant with drive-through at Sandstone Marketplace

**Project Location:** South side of E. Ken Pratt Blvd., between CR 1 and Timm Way

**When:** Thursday, April 13, 2023, at 6:00 p.m.

**Where:** Via Livestream at <https://www.youtube.com/@cityoflongmont>

**Property Owner:** SSC Investors, LLC

**Applicant:** Jessica McCallum

**Background:** Applicant proposes development of a 1.33-acre site at Sandstone Marketplace as a McDonald's restaurant with drive-through. The property is zoned Mixed Use Regional Center (MU-R), in which a restaurant with drive-through is a conditional use. Conditional uses require approval by the Longmont Planning and Zoning Commission.

**Future Meetings:** Planning and Zoning Commission, date TBD

The Planning and Zoning Commission is the decision making body on conditional uses. If this project submits an application and goes through the full development review process, public hearings with the following will take place:

- Planning and Zoning Commission Hearing

Additional notification of all public hearings before the Planning & Zoning Commission and the City Council will be provided, as required by City regulations. If you have questions regarding the neighborhood meeting, the development review process, code requirements, or other specific items, please contact the staff member identified below.

**Applicant Contact:**

Jessica McCallum, PE

Kimley-Horn

719-284-7275

[Jessica.McCallum@kimley-horn.com](mailto:Jessica.McCallum@kimley-horn.com)

**City Staff Contact:**

Jennifer Hewett-Apperson, Senior Planner

City of Longmont, Planning Division

303-651-8439

[Jennifer.hewettapperson@longmontcolorado.gov](mailto:Jennifer.hewettapperson@longmontcolorado.gov)



CITY OF LONGMONT | Planning

## Certificate of Mailing

I, Meaghan Farrell, certify that letters of notification were mailed in accordance with

Section 15.02 of the City of Longmont Land Development Code for a:

☐ Neighborhood Meeting

☒ Notice of Application

☐ Planning and Zoning Commission Public Hearing to be held on \_\_\_\_\_

☐ City Council Public Hearing to be held on \_\_\_\_\_

for the application identified as

McDonalds at Sandstone Marketplace Site Plan  
Project Name

On the subject property located at

SE Corner of Ken Pratt Blvd and County Line Rd  
Site Address or Location Description

The letter(s) was/were sent on August 16<sup>th</sup>, 2023

A copy of the letter and list of recipients is attached.

I certify that the foregoing information is true and correct.

Meaghan Farrell  
Signature

8/16/23  
Date

City of Longmont Planning and Development Services Division, 385 Kimbark Street, Longmont, CO 80501, telephone 303-651-8330, fax 303-651-8696, email: Longmont.planning@longmontcolorado.gov website: <http://www.longmontcolorado.gov>



CITY OF LONGMONT | Planning and Development Services

August 25, 2023

## Notice of Application

McDonald's at Sandstone Marketplace Site Plan

(Project File #DV-SITE PLAN-23-00016)

**Proposal:** This site plan proposal is for the construction of a 4,953 +/- SF McDonald's drive-through restaurant.

**Location:** Located at the southeast corner of Ken Pratt Blvd and County Line Road.

**Existing Use:** Undeveloped land

**Zoning:** Mixed-Use Regional Center

**Property Owner:** SSC Investors LLC

**Applicant:** McDonald's USA, LLC

**Any person having an interest in the above application or wishing to obtain additional information may call or email the Planning Division for more information and to obtain electronic copies of the application materials.** With an appointment, any interested party may review the paper application materials on file at the Planning Division, City of Longmont, Development Services Center, 385 Kimbark Street, Longmont, CO 80501.

**If you are interested in submitting written comments to the City for consideration, we ask that you kindly submit written comments no later than 09/13/2023 so that city staff can review comments and feedback prior to completing an analysis of this application.**

**Applicant Contact:**

Jessica McCallum  
Kimley-Horn and Associates  
2 North Nevada Ave Suite 900  
Colorado Springs, CO 80903  
719-284-7275  
jessica.mccallum@kimley-horn.com

**City Staff Planner:**

Kristin Cote  
303-651-8735  
kristin.cote@longmontcolorado.gov

The Planning Division has received and initiated review of the following application. Public hearings before the Planning and Zoning Commission and/or City Council will be held at dates to be determined.

MC LANE WESTERN INC  
PO BOX 6115  
TEMPLE, TX 76503

CONTINENTAL 509 FUND LLC  
W134N8675 EXECUTIVE PKWY  
MENOMONEE FALLS, WI 53051

SANDSTONE VISTAS ONE LLC  
233 E CARRILLO ST STE D  
SANTA BARBARA, CA 93101

DD LONGMONT 12.37 LLC  
403 CORPORATE CENTER DR STE 201  
STOCKBRIDGE, GA 30281

WAL-MART STORES INC  
PO BOX 8050 MS0555  
BENTONVILLE, AR 72716





Certificate of Mailing — Firm

Name and Address of Sender

Kimley-Horn + Associates, Inc  
Jessica McCallum  
2 N. Nevada Ave  
Suite 900  
Colorado Springs, CO 80903

TOTAL NO.  
of Pieces Listed by Sender

5

TOTAL NO.  
of Pieces Received at Post Office™

Postmaster, per (name of receiving employee)

Affix Stamp Here  
Postmark with Date of Receipt.



USPS Tracking Number  
Firm-Specific Identifier

Address  
(Name, Street, City, State, and ZIP Code™)

1.	MC LANE WESTERN INC PO BOX 6415 TEMPLE, TX 76503
2.	CONTINENTAL 509 FUND LLC W134N 81675 EXECUTIVE PKWY MENOMONEE FALLS, WI 53051
3.	SANDSTONE VISTAS ONE LLC 733 E CARILLO ST STE D SANTA BARBARA, CA 93101
4.	DD LONGMONT 12.37 LLC 403 CORPORATE CENTER DR SUITE 201 STOCKBRIDGE, GA 30281
5.	WAL-MART STORES INC. PO BOX 8050 MS0555 BENTONVILLE, AR 72716
6.	



RDC 99

U.S. POSTAGE PAID  
FCM LETTER  
COLORADO SPRINGS, CO  
AUG 16 23  
AMOUNT  
\$1.95  
R2304E105275-15



RDC 99

U.S. POSTAGE PAID  
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COLORADO SPRINGS, CO  
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\$1.95  
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RDC 99

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COLORADO SPRINGS, CO  
AUG 16 23  
AMOUNT  
\$1.95  
R2304E105275-15



CITY OF LONGMONT | Planning

## Certificate of Property Posting

I, Meaghan Farrell, certify that 1 sign(s) was were posted pursuant to the provisions of the City of Longmont Land Development Code, for the application identified as

McDonalds @ Sandstone Marketplace Site Plan  
Project Name

for a

☐ Neighborhood Meeting

☒ Notice of Application

☐ Planning and Zoning Commission Public Hearing to be held on \_\_\_\_\_

☐ City Council Public Hearing to be held on \_\_\_\_\_

On the subject property located at

Hwy 119 - Sandstone Marketplace  
Site Address or Location Description

Attach photo(s) of posting – at least one photo for each street frontage (attach additional pages if necessary):

I certify that the foregoing information is true and correct.

Meaghan Farrell  
Signature

8/21/23  
Date

City of Longmont Planning and Development Services Division, 385 Kimbark Street, Longmont, CO 80501, Telephone 303-651-8330,  
Email: [longmont.planning@longmontcolorado.gov](mailto:longmont.planning@longmontcolorado.gov) website: <http://www.longmontcolorado.gov>

MC LANE WESTERN INC  
PO BOX 6115  
TEMPLE, TX 76503

CONTINENTAL 509 FUND LLC  
W134N8675 EXECUTIVE PKWY  
MENOMONEE FALLS, WI 53051

SANDSTONE VISTAS ONE LLC  
233 E CARRILLO ST STE D  
SANTA BARBARA, CA 93101

DD LONGMONT 12.37 LLC  
403 CORPORATE CENTER DR STE 201  
STOCKBRIDGE, GA 30281

WAL-MART STORES INC  
PO BOX 8050 MS0555  
BENTONVILLE, AR 72716







**CITY OF LONGMONT | Planning**

## Certificate of Mailing

I, Meaghan Farrell, certify that letters of notification were mailed in accordance with  
Section 15.02 of the City of Longmont Land Development Code for a:

☐ Neighborhood Meeting

☐ Notice of Application

☒ Planning and Zoning Commission Public Hearing to be held on June 26

☐ City Council Public Hearing to be held on \_\_\_\_\_

for the application identified as

McDonald's at Sandstone Marketplace Conditional Use  
Project Name Site Plan

On the subject property located at \_\_\_\_\_

Hwy 119 + Timm Way  
Site Address or Location Description

The letter(s) was/were sent on June 10, 2024

A copy of the letter and list of recipients is attached.

I certify that the foregoing information is true and correct.

Meaghan Farrell  
Signature

6/10/24  
Date

City of Longmont Planning and Development Services Division, 385 Kimbark Street, Longmont, CO 80501, telephone 303-651-8330, fax 303-651-8696, email: [Longmont.planning@longmontcolorado.gov](mailto:Longmont.planning@longmontcolorado.gov) website: <http://www.longmontcolorado.gov>



June 7, 2024

## Notice of Public Hearing

At its regular meeting to be held **Wednesday, June 26, 2024, at 7:00 PM** in the City Council Chambers of the Civic Center Complex located at 350 Kimbark Street, Planning and Zoning Commission will hold a public hearing on and consider:

<b>Proposal:</b>	The property owner of Lot 6, Block 1 of the Sandstone Marketplace Subdivision Filing No. 1 proposes to construct a 4,965+/- SF fast food restaurant with a drive-through on approximately 1.19 acres of MU-R (mixed use regional center) zoned land.
<b>Location:</b>	South of East Ken Pratt Blvd, west of Common Drive and east of County Road 1.
<b>Area:</b>	1.25 acres +/-
<b>Existing Use:</b>	Vacant Land
<b>Zoning:</b>	Mixed-Use Regional Center
<b>Property Owner:</b>	SSC Investors LLC
<b>Applicant:</b>	McDonald's USA, LLC

### Surrounding land uses and zoning

<b>North:</b>	N-PE (Primary Employment)
<b>South:</b>	MU-R (mixed use regional center)
<b>East:</b>	MU-R (mixed use regional center)
<b>West:</b>	MU-R (mixed use regional center)

**Comprehensive Plan** Regional Center  
**Specifications:**

Any person having an interest in the above proceeding is invited to be present and speak at the public hearing or, if unable to attend, submit written comments to the Planning Division, City of Longmont, Development Services Center, 385 Kimbark Street, Longmont CO 80501. Comments submitted to the Planning Division prior to the public hearing will be forwarded to the Planning Commission. If you have any questions, please call the staff planner.

If you are unfamiliar with the Planning Commission Procedures and intend to appear before the Board, please contact the planner listed below for further information.

**Applicant Contact:**

Jessica McCallum  
Kimley-Horn and Associates  
2 North Nevada Ave Suite 900  
Colorado Springs, CO 80903  
719-284-7275  
jessica.mccallum@kimley-horn.com

**City Staff Planner:**

Kristin Cote  
303-651-8735  
kristin.cote@longmontcolorado.gov

**Project File Number:** DV-SITE PLAN-23-00016





Certificate of Mailing — Firm

Name and Address of Sender

Kimley-Horn & Associates  
2 N. Nevada Ave, Ste 900  
Colo Spgs, CO 80903

TOTAL NO.  
of Pieces Listed by Sender

6

TOTAL NO.  
of Pieces Received at Post Office™

Affix Stamp Here  
Postmark with Date of Receipt



USPS® Tracking Number

Firm-specific identifier

Address  
(Name, Street, City, State, and Zip Code™)

SSC INVESTORS LLC

755 DELAWARE AVE, STE A

LONGMONT CO 80501



RDC 99

U.S. POSTAGE PAID  
FCM LETTER  
COLORADO SPRINGS, CO  
80903  
JUN 10, 24  
AMOUNT  
**\$2.00**

1.

MC LANE WESTERN INC

PO BOX 6115

TEMPLE TX 76503



RDC 99

U.S. POSTAGE PAID  
FCM LETTER  
COLORADO SPRINGS, CO  
80903  
JUN 10, 24  
AMOUNT  
**\$2.00**

2.

DD LONGMONT 12.37 LLC

403 CORPORATE CENTER DR, STE 201

STOCKBRIDGE GA 30281



RDC 99

U.S. POSTAGE PAID  
FCM LETTER  
COLORADO SPRINGS, CO  
80903  
JUN 10, 24  
AMOUNT  
**\$2.00**  
R2305M1 43943-15

3.

CONTINENTAL 509 FUND LLC

W134N8675 EXECUTIVE PKWY

MENOMONEE FALLS WI 53051

4.

WAL-MART STORES INC

PO BOX 8050

BENTONVILLE AR 72712

5.

SANDSTONE VISTAS ONE LLC

233 E CARRILLO ST STE D

SANTA BARBARA CA 93101



RDC 99

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JUN 10, 24  
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R2305M1 43943-15

2024

U.S. POSTAGE PAID  
FCM LETTER  
COLORADO SPRINGS, CO  
80903  
JUN 10, 24  
AMOUNT  
**\$2.00**  
R2305M143943-15



RDC 99

U.S. POSTAGE PAID  
FCM LETTER  
COLORADO SPRINGS, CO  
80903  
JUN 10, 24  
AMOUNT  
**\$2.00**  
R2305M143943-15



RDC 99

SSC INVESTORS LLC  
755 DELAWARE AVE, STE A  
LONGMONT CO 80501

MC LANE WESTERN INC  
PO BOX 6115  
TEMPLE TX 76503

DD LONGMONT 12.37 LLC  
403 CORPORATE CENTER DR, STE 201  
STOCKBRIDGE GA 30281

CONTINENTAL 509 FUND LLC  
W134N8675 EXECUTIVE PKWY  
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WAL-MART STORES INC  
PO BOX 8050  
BENTONVILLE AR 72712

SANDSTONE VISTAS ONE LLC  
233 E CARRILLO ST STE D  
SANTA BARBARA CA 93101

McDonald's at Sandstone Marketplace – Mailing Area Vicinity Map







CITY OF LONGMONT | Planning

## Certificate of Property Posting

I, Jessica McCallum, certify that 1 sign(s) was/were posted pursuant to the provisions of the City of Longmont Land Development Code, for the application identified as

McDonald's at Sandstone Marketplace - Conditional Use Site Plan  
Project Name

for a

☐ Neighborhood Meeting

☐ Notice of Application

☒ Planning and Zoning Commission Public Hearing to be held on June 26

☐ City Council Public Hearing to be held on \_\_\_\_\_

On the subject property located at

Hwy 119 & Timm Way  
Site Address or Location Description

Attach photo(s) of posting – at least one photo for each street frontage (attach additional pages if necessary):

I certify that the foregoing information is true and correct.

Jessica McCallum  
Signature

6/12/2024  
Date

City of Longmont Planning and Development Services Division, 385 Kimbark Street, Longmont, CO 80501, Telephone 303-651-8330,  
Email: [longmont.planning@longmontcolorado.gov](mailto:longmont.planning@longmontcolorado.gov) website: <http://www.longmontcolorado.gov>





**Development Proposal  
Public Hearing**

**McDonald's at Sandstone Marketplace**

Conditional Use Site Plan

June 26, 2024, 7:00PM - City Council Chambers  
of the Civic Center Complex at 350 Kimbark St

303.651.8330 | longmontcolorado.gov

THIS SITE  
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**Right of Way & Permits**

1123 West 3<sup>rd</sup> Avenue  
Denver, Colorado 80223  
Telephone: **303.571.3306**  
Facsimile: 303.571.3284  
Donna.L.George@xcelenergy.com

September 5, 2023

City of Longmont Planning and Development Services  
385 Kimbark Street - PO Box 1348  
Longmont, CO 80501

Attn: Kristin Cote

**Re: McDonald's at Sandstone Marketplace, Case # DV-SITE PLAN-23-00016**

Public Service Company of Colorado's (PSCo) Right of Way & Permits Referral Desk has reviewed the site plan for **McDonald's at Sandstone Marketplace**. Please be aware PSCo owns and operates existing intermediate pressure natural gas distribution facilities along the north property line. The property owner/developer/contractor must complete the application process for any new natural gas or electric service, or modification to existing facilities via [xcelenergy.com/InstallAndConnect](https://xcelenergy.com/InstallAndConnect). It is then the responsibility of the developer to contact the Designer assigned to the project for approval of design details.

Additional easements will need to be acquired by separate document for new facilities (i.e. transformer) – be sure to have the Designer contact a Right-of-Way and Permits Agent.

As a safety precaution, PSCo would like to remind the developer to call the Utility Notification Center by dialing 811 for utility locates prior to construction.

Donna George  
Right of Way and Permits  
Public Service Company of Colorado dba Xcel Energy  
Office: 303-571-3306 – Email: Donna.L.George@xcelenergy.com



# Comments on McDonald's

DV-SITE PLAN-23-00016

Mark Pabst

12/30/2023

**Overall** – The submitted landscape plan is better than most with drippers being included for trees which will enhance their survival. Also, the relative size of trees is indicated which provides a good interference check against other plants and infrastructure.

**Trees** – Prior to European settlement the only trees in Colorado were cottonwoods which grew along rivers. Europeans introduced trees that they were used to seeing and the result has been the high fatality rate of many trees. CSU has evaluated all the commonly available trees<sup>1</sup> found at nurseries and graded them (A, B, C, D) based on their performance. Below is a partial list of “A” trees that were not used by the designer and should be considered. While the LA has identified mostly “A” trees (see Figure 1) notably there is a “D” tree identified, Purple Robe Black Locust<sup>2</sup>. Several Honey locusts have been provided on Fig. 1 that can be used as a substitute.

Common Name	Scientific Name
Horsechestnuts (Common, Texas, Ohio)	Aesculus glabra, arguta, hippocastanum
Thinleaf Alder	Alnus tenuifolia
Serviceberries (Saskatoon, Shadblow)	Amelanchier alnifolia, canadensis
Cornelian Cherry Dogwood	Comus mas
Hawthorn (Cockspur, Russian, Washington)	Crataegus crusgalii, ambigua, phaenopyrum
Kentucky Coffeetree	Gymnocladus
Chinese Apricot	Prunus armeniaca
European Birdcherry	Prunus padus
Cleavland Select Pear	Pyrus calleryana
Oak (Bur, Chinkapin)	Quercus robur
Linden (American, Littleleaf, Silver)	Tilia americana, cordata, tomentosa
Juniper (Chinese, Medora, etc)	Juniperus chinensis, monosperma, scopulorum
Juniper (Taylor, etc)	Juniperus virginiana
Pine (Pinyon, Limber, Austrian)	Pinus edulis, flexilis, nigra

**Tree Islands** – The practice of planting trees where the root system is covered by paving causes stress for the tree. Trees can grow in this condition but will struggle since water is inhibited from

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<sup>1</sup> *Front Range Tree Recommendation List*, Colorado Nursery & Greenhouse Association, 2010.

<sup>2</sup> Not cold hardy. Susceptible to borers. Weak wood. Short lived. Not on the City of Longmont “Approved Tree List”.

getting to the entire root system. Use vertical or columnar plants such as upright junipers, Columnar Buckthorn, Siberian Peashrub, etc.

**Trees Lawns** – On the east and west boundaries of the property are narrow strips that include large deciduous trees planted among turf (Buffer Type A). Essentially a tree lawn. Tree lawns are hard to maintain, environmentally damaging, and waste resources. A short list of tree lawn problems includes -

- Water waste from overspray onto paved surfaces.
- Difficulty watering odd shapes resulting in dead turf.
- Difficult to fertilize without getting fertilizer on paved surfaces (wasting fertilizer).
- Mowers and weed whackers will damage the base of the tree resulting in girdling. The girdling will permit disease and insect infestation which kills the tree. While a buffer of mulch is indicated on the drawings this will, in time, be overgrown by grass<sup>3</sup> which brings in the weed whackers.
- To properly maintain the grass regular application of fertilizer and weedkiller is needed, an added ongoing expense that owners seldom want to make. This results in weeds taking over.
- Tree lawns require complicated irrigation systems that require costly annual repairs for leaks and damage from mowers and snow removal equipment.
- Tree roots destroy curbs, sidewalks, and irrigation hardware.

The tree lawn concept provided in the application documents is recreated in cartoon form in Fig. 4. To illustrate how the tree lawn area can be designed to be less wasteful, easier to maintain, and longer lived, three alternatives are presented in Figures 5 to 7. Traditional tree lawns can be replaced with designs that are more in tune with their environments. Figures 8 - 11 show examples of alternative tree lawns.

I question the use of the Longmont Type C turf mix. For 35 years I have been watching the introduction of miracle turf mixes which never do well. Like this example, these mixes are generally clump grasses and a few will become dominant over the years depending on maintenance and soil conditions<sup>4</sup>. The areas where the weaker varieties lived are then overrun by weeds. A better alternative to these clump products would be a cold hardy Bermuda grass (Tahoma 31) which spreads by runners, like bluegrass. Unlike bluegrass it holds up to heat better and requires less water.

**Hwy 119 Garden** – The planted area north of the store will primarily be seen by passing traffic on Highway 119 going 55 mph and customers waiting for their drive-up order. The design of this area should be scale specific for this situation (large shrubs such as Smith's Buckthorn, Commanche Gooseberry, Pawnee Buttes Sand Cherry, Littleleaf Mount Mahogany, Mock

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<sup>3</sup> Even when steel edging is used.

<sup>4</sup> Note that horticultural experts at Fort Collins Botanic Garden and Denver Botanic Garden have given up on these turf demonstration gardens since they are untenable. Additionally, the City of Longmont has not converted its own properties to these mixes so there is no demonstrated existence of their success.

Orange, ect.). Additionally, the turf in this location has no beneficial use<sup>5</sup>. There is an opportunity here to make a breathtaking native garden consisting of native shrubs and grasses that will save the owner in upkeep and maintenance costs. Also see the “Form and Texture” section below. Smaller, more colorful plants could be located adjacent to the drive-thru.

**Ornamental Grasses** – Surprisingly no ornamental grasses are indicated in the plan. It is true that ornamental grasses are probably overused (especially Karl Foerster) in design today, there are other grasses that are very attractive. Note that Colorado’s state grass is Blue Grama Grass (*Bouteloua gracilis*). Also known as a four-season grass, it is attractive all year.























**Form and Texture Garden** - Garden areas can be created using plants that are very hardy in our climate and require little water or maintenance. This type of garden is not the typical perennial garden but rather a Form and Texture Garden. These plants would consist of Southernwood, Silver Sage, Sea Foam Artemisia, Hens and Chicks, Pineleaf Beardtongue, Littleleaf Mountain Mahogany, cold hardy cacti, cholla, agave, ice plants, and yuccas.

**Bulbs** - Colorado has a short growing season so to get color in early spring, bulbs can be used. Crocus, snowdrop, muscari, gregii tulips, etc. are a few examples of low maintenance bulbs. Dwarf iris (*iris reticulata*), wilflower iris, and iris holandica are also great smaller iris that don’t have the massive leaves of the hybrid iris and require cutback and division. Hybrid tulips also require division every year to remain healthy and should not be used.

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<sup>5</sup> Turf is beneficial when used as a sports field, picnic area, or pet exercise area. Since turf is one of the most difficult plants to grow in Colorado having turf to just look at is hard to maintain, costly, and a drain on resources (water, fertilizer, weed killer)

# PLANT SCHEDULE

CANOPY TREES	CODE	QTY	BOTANICAL / COMMON NAME	CONT. SIZE	SIZE/CAL.	WIDTH	HEIGHT	
	AP	2	ACER PLATANOIDES 'EMERALD QUEEN' / EMERALD QUEEN NORWAY MAPLE	B & B	2.5" CAL MIN	30'-40'	40'-50'	"B" substitute Bigtooth Maple, bark has to be protected in winter.
	CS	6	CATALPA SPECIOSA / NORTHERN CATALPA	B & B	2.5" CAL MIN	30'-50'	40'-60'	"A"
	RR	8	ROBINIA PSEUDOACACIA 'PURPLE ROBE' / PURPLE ROBE BLACK LOCUST	B & B	1.5" CAL MIN	25'-30'	35'-40'	"D" substitute Honeylocust – Imperial, Shademaster or Skyline. Notes 1 and 2
	TC	12	TILIA CORDATA 'GREENSPIRE' / GREENSPIRE LINDEN	B & B	1.5" CAL MIN	25'-35'	30'-40'	"A"
EVERGREEN TREES	CODE	QTY	BOTANICAL / COMMON NAME	CONT. SIZE	SIZE/CAL.	WIDTH	HEIGHT	
	JM	8	JUNIPERUS SCOPULORUM 'MOONGLOW' / MOONGLOW JUNIPER LOW ROOT DAMAGE POTENTIAL	B & B	6" HGT.	6'-8'	12'-15'	"A"
	JW	11	JUNIPERUS SCOPULORUM 'WICHITA BLUE' / WICHITA BLUE JUNIPER	B & B	6" HGT.	4'-6'	15'-20'	"A"
	PL	6	PINUS LEUCODERMIS 'SATELLIT' / SATELIT BOSNIAN PINE	B & B	6" HGT.	8'-10'	15'-20'	"A"
DECIDUOUS SHRUBS	CODE	QTY	BOTANICAL / COMMON NAME	CONT. SIZE	SPACING	WIDTH	HEIGHT	
	CF	19	CORNUS SERICEA 'FLAVIRAMEA' / YELLOW TWIG DOGWOOD	5 GAL.	SEE PLAN	6'-10'	6'-8'	Best in wet spots
	CF2	2	CHAMAEBATIARIA MILLEFOLIUM 'FERNBUSH' / FERNBUSH	5 GAL.	SEE PLAN	3'-6'	3'-5'	xeric
	CF3	41	CORNUS SERICEA 'FARROW' / ARCTIC FIRE® RED TWIG DOGWOOD	5 GAL.	SEE PLAN	3'-4'	3'-4'	Best in wet spots
	LA	80	LAVANDULA ANGUSTIFOLIA 'HIDCOTE' / DEEP BLUE LAVENDER	5 GAL.	SEE PLAN	20"-30"	20"-30"	
	RSS	23	PEROVSKIA ATRIPLICIFOLIA / RUSSIAN SAGE	5 GAL.	SEE PLAN	3'-4'	3'-4'	Self sows (weedy), substitute blue mist spirea
	RT	3	RHUS TYPHINA / STAGHORN SUMAC	5 GAL.	SEE PLAN	10'-15'	10'-25'	Vigorous suckering shrub, needs lots of room, substitute Autumn Amber Sumac
	SB3	34	SPIRAEA JAPONICA 'BUMALDA' / BUMALDA JAPANESE SPIREA	5 GAL.	SEE PLAN	2'-3'	18"-24"	Not PlantSelect. See PlantSelect for recommended spireas.
	SJ2	6	SYRINGA X JOSIFLEXA 'JAMES MACFARLANE' / JAMES MACFARLANE LILAC	5 GAL.	SEE PLAN	6'-8'	8'-12'	Not PlantSelect. See PlantSelect for recommended lilacs.
EVERGREEN SHRUBS	CODE	QTY	BOTANICAL / COMMON NAME	CONT. SIZE	SPACING	WIDTH	HEIGHT	
	AF2	24	ARTEMISIA FILIFOLIA / SAND SAGEBRUSH	5 GAL.	SEE PLAN	2'-3'	1'-5'	Native, xeric
	CS2	18	CYTISUS PURGANS 'SPANISH GOLD' / SPANISH GOLD BROOM	5 GAL.	SEE PLAN	4'-6'	2'-4'	PlantSelect
	EU	13	ERICAMERIA NAUSEOSA GLABRATA / TALL GREEN RABBITBRUSH	5 GAL.	SEE PLAN	2'-6'	2'-6'	Native, xeric
	MA	4	MAHONIA AQUIFOLIUM / OREGON GRAPEHOLLY	5 GAL.	SEE PLAN	4'-6'	4'-6'	Part shade to full shade
GROUND COVERS	CODE	QTY	BOTANICAL / COMMON NAME	TYPE	INSTALL RATE	WEED FABRIC	MFR.	
	ROCK	3,334 SF	1-1/2" SCREENED TABLE MOUNTAIN / ROCK MULCH	ROCK MULCH	4"	YES	LOCAL MANUFACTURER	
	ROCK2	785 SF	3/4" BRECKEN GOLD / ROCK MULCH	ROCK MULCH	4"	YES	LOCAL MANUFACTURER	
	SEED	13,826 SF	LONGMONT SEED MIX "C" / LONGMONT SEED MIX "C" FESCUE, 25% SR3200 BLUE FESCUE, 12.5% SR3100 HARD FESCUE, 15% RUBENS CANADIAN BLUE, 12.5% SR5100 CHEWINGS FESCUE.	SEED				These are mainly clump grasses resulting in a hummocky turf. Eventually 1 or 2 species will become dominant and weeds will move into the interspaces.

Note 1 – Cleveland Select Pear would also be a good substitute. White spring flowers and is doesn't stink like the older pears.

Note 2 – Not on the City of Longmont "Approved Tree List".

Fig. 1

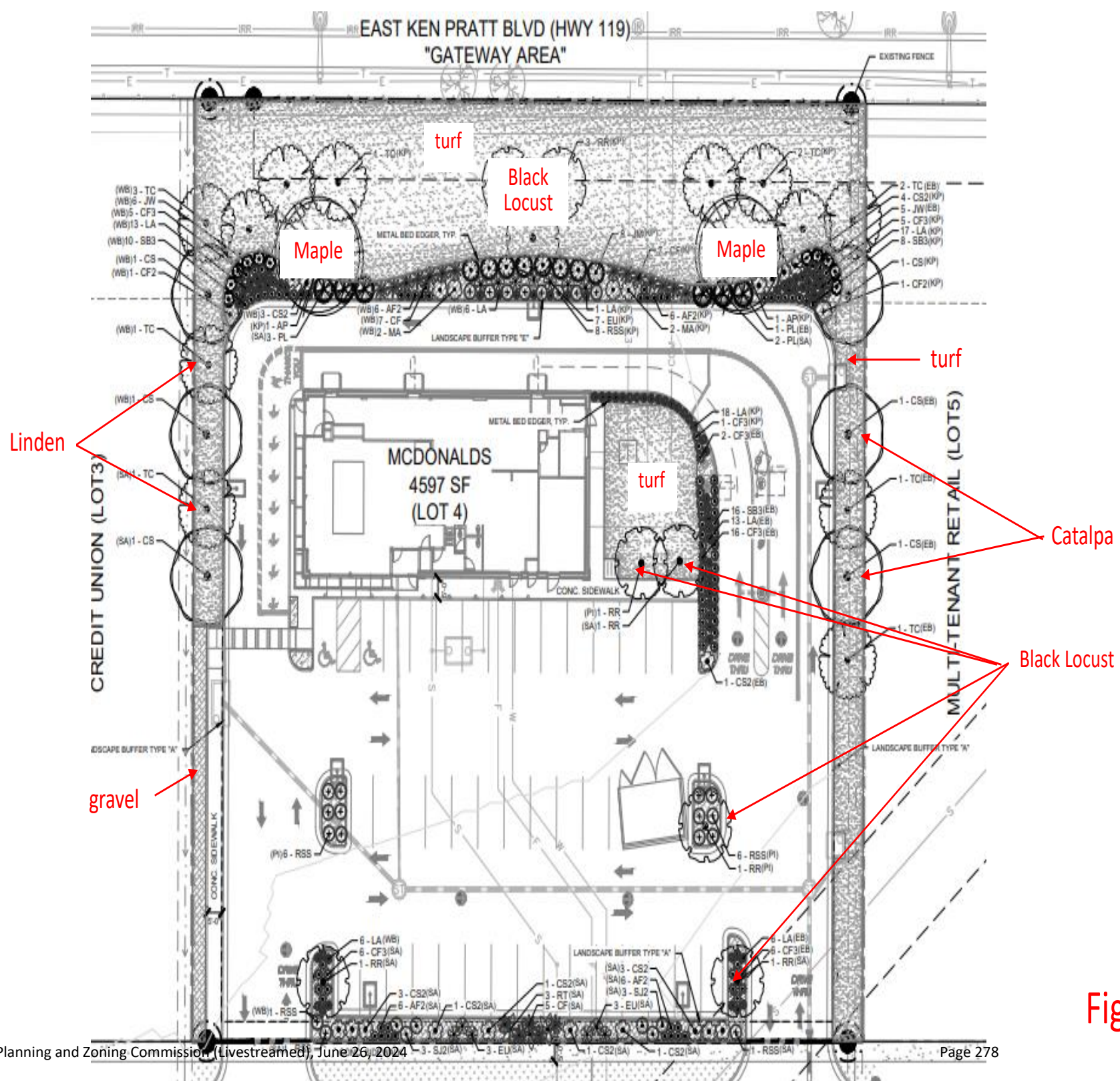


Fig. 2



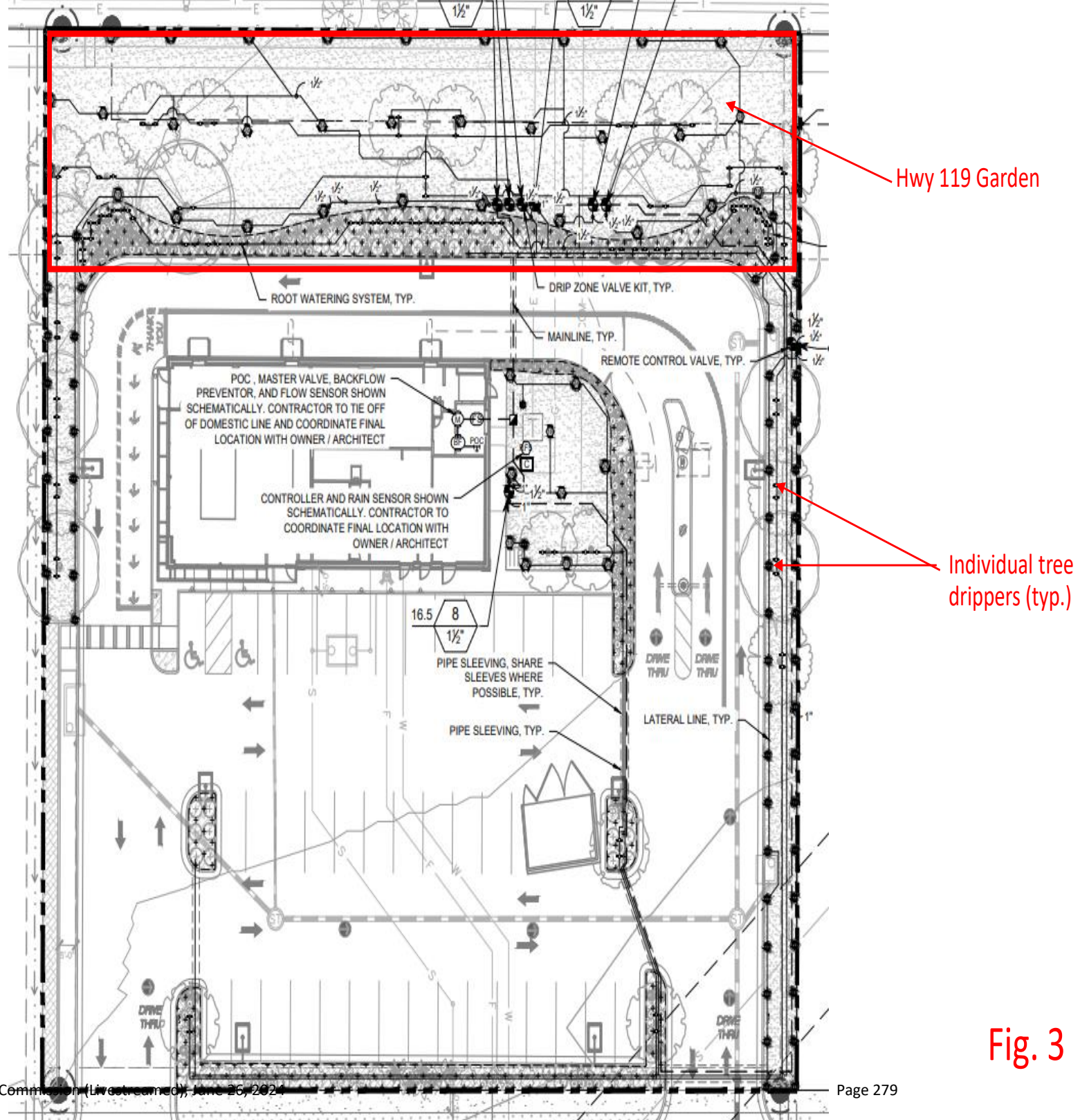
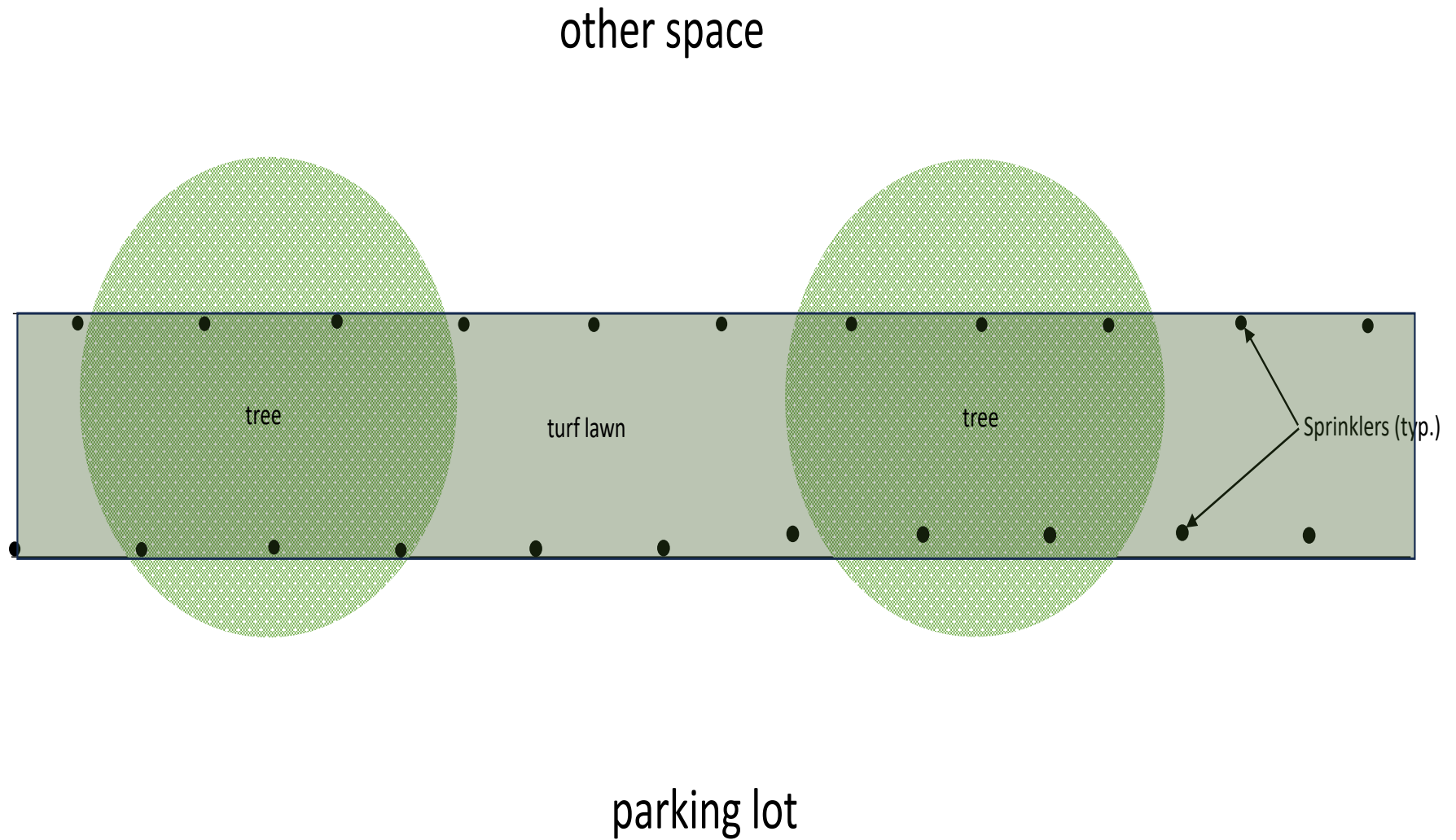


Fig. 3

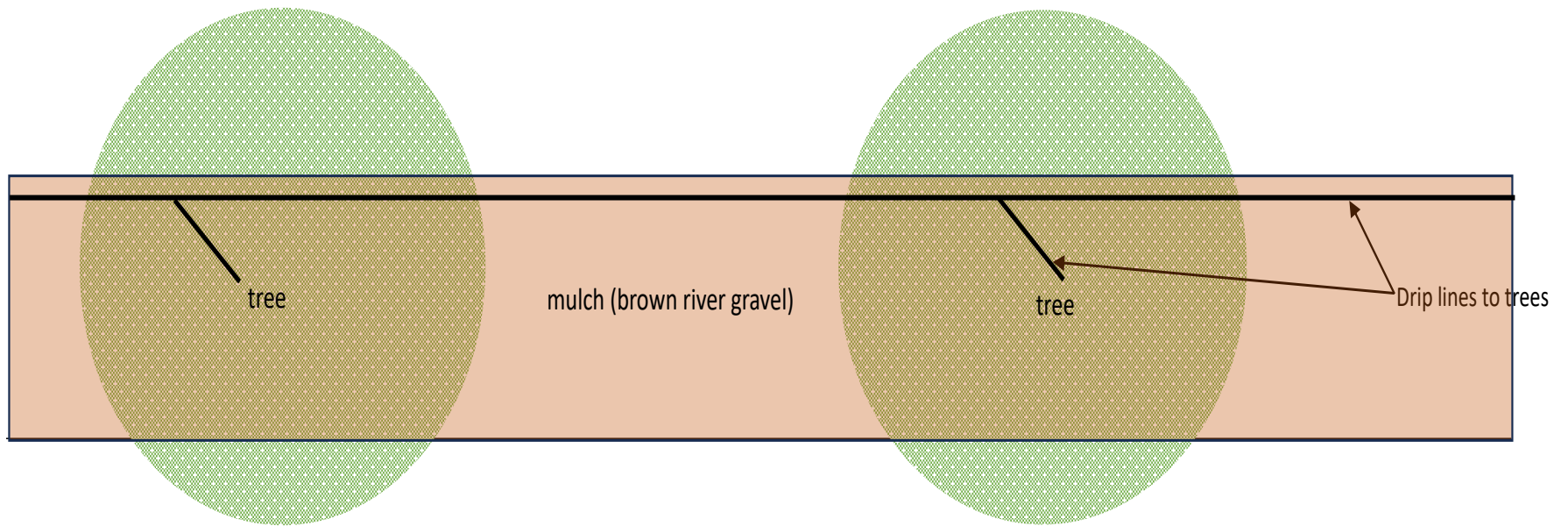




**Current Tree Lawn**

**Fig. 4**

other space

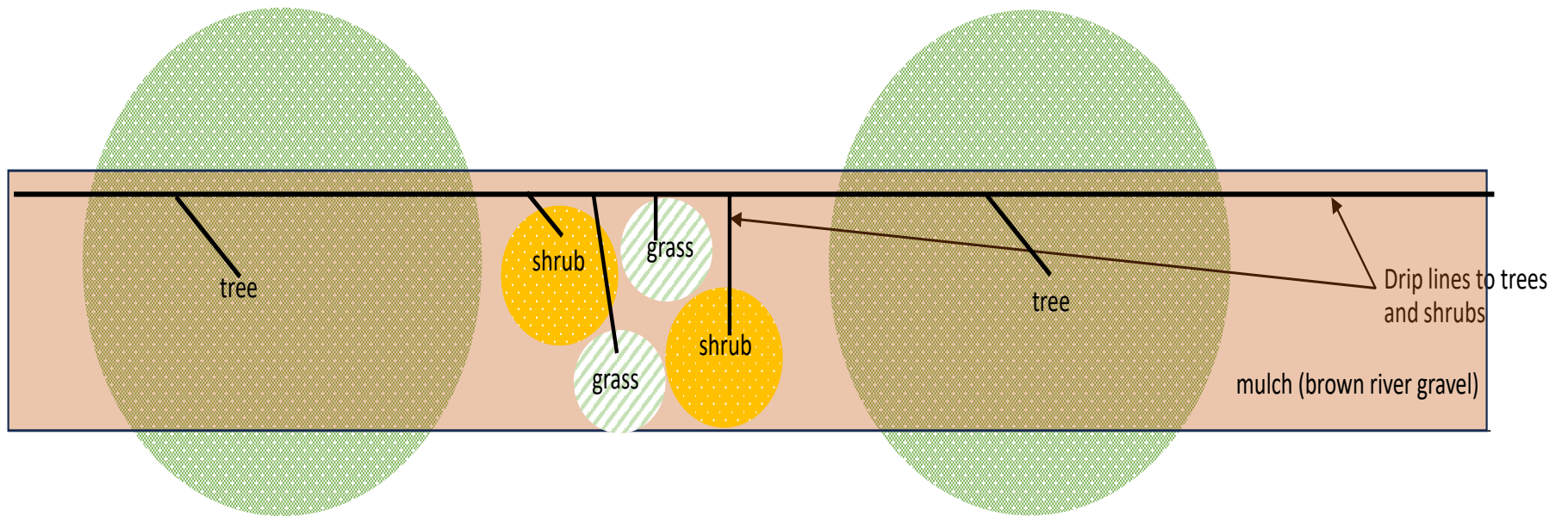


parking lot

**Alt 1 – Trees only**

**Fig. 5**

other space

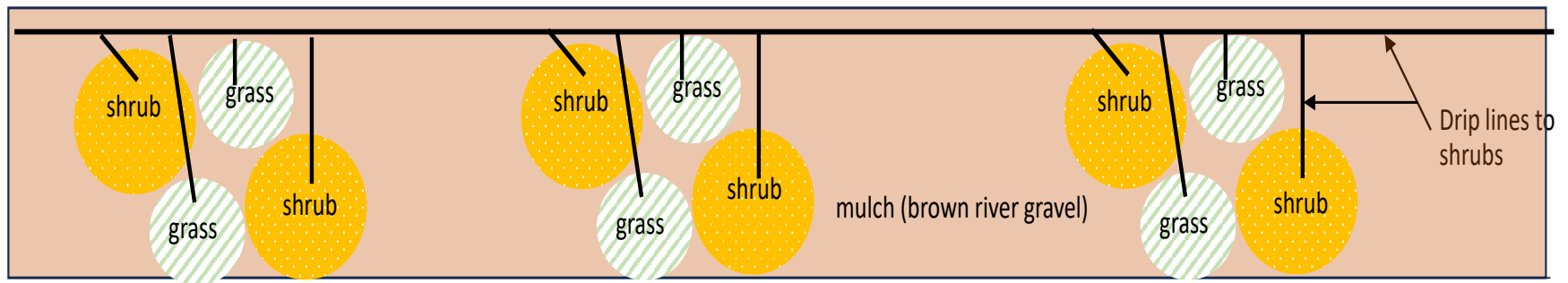


parking lot

**Alt 2 – Trees w/ shrubs and grasses**

**Fig. 6**

other space



parking lot

**Alt 3 – shrubs and grasses**

**Fig. 7**



**Fig. 8**





**Fig. 9**





**Fig. 10**





**Fig. 11**