

Traffic Impact Study

# Chick-fil-A Dry Creek & Gartrell

Aurora, Colorado

Prepared for:

**Merrick & Company**

**Kimley»Horn**

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

## **Chick-fil-A Dry Creek and Gartrell**

Aurora, Colorado

**Prepared for  
Merrick & Company**

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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 a Chick-fil-A restaurant proposed to be located on the northwest corner of the Dry Creek Road and Gartrell Road intersection in Aurora, Colorado. A 2,931 square foot Chick-fil-A restaurant is proposed to replace a previous bank that is currently unoccupied. It is expected that Chick-fil-A will be completed in the next couple years; therefore, analysis was conducted for the 2025 short-term buildout horizon as well as the 2040 long-term planning horizon.

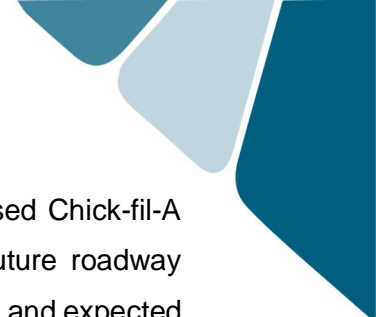
The purpose of this traffic study is to identify project traffic generation characteristics to determine potential project traffic related impacts on the local street system and to develop the necessary mitigation measures required for the identified traffic impacts. The following intersections were incorporated into this traffic study in accordance with the City of Aurora standards and requirements:

- Dry Creek Road & Hinsdale Avenue (#1)
- Dry Creek Road & Gartrell Road (#2)

In addition, the existing full movement shared access on the east side of Hinsdale Avenue (#3) and the existing right-in/right-out shared access along the west side of Gartrell Road (#4) were evaluated.

Regional access to Chick-fil-A will be provided by E-470, Parker Road (SH-83), and Arapahoe Road (SH-88). Primary access will be provided by Gartrell Road and Dry Creek Road. Direct access will be provided by the existing full movement shared access on the east side of Hinsdale Avenue (#3) and the existing right-in/right-out shared access along the west side of Gartrell Road (#4).

Chick-fil-A is expected to generate approximately 1,372 daily weekday driveway trips, with 131 of these trips occurring during the morning peak hour and 97 trips occurring during the afternoon peak hour. Accounting for pass-by, expected net new (non pass-by) trips to the surrounding street network results in approximately 618 weekday daily trips, of which 65 trips and 44 trips are anticipated during the weekday morning and afternoon peak hours, respectively.



Based on the analysis presented in this report, Kimley-Horn believes the proposed Chick-fil-A redevelopment project 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:

- The street network surrounding the project site and existing accesses were previously analyzed and designed based on full buildout of the surrounding commercial center including a bank previously occupied in the same development area as this Chick-fil-A proposal. The proposed redevelopment is anticipated to generate 890 more daily trips, 83 more morning peak hour trips, and four (4) afternoon peak hour trips than the bank use that previously occupied the site. Therefore, the net change is the difference in trips that were approved with the previous development application. Of note, intersection improvements are determined based on traffic volumes from the controlling peak hour which typically occurs during the afternoon peak hour. Therefore, it is believed that roadway and project accesses will accommodate the project traffic from the proposed Chick-fil-A replacing the existing bank.
- The westbound left turn lane at the Dry Creek Road and Gartrell Road intersection could be restriped from 125 feet to 175 feet by 2025. However, this storage length is currently being accommodated in space designated for left turn movements but is not currently striped to 175 feet; therefore, the City of Aurora could consider keeping the striping in the current condition. Of note, project traffic does not contribute to this movement.
- Any onsite or offsite improvements should be incorporated into the Civil Drawings and conform to standards of the City of Aurora and the Manual on Uniform Traffic Control Devices (MUTCD) – 2009 Edition.

## 2.0 INTRODUCTION

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Kimley-Horn has prepared this report to document the results of a Traffic Impact Study for a Chick-fil-A redevelopment project proposed to be located on the northwest corner of the Dry Creek Road and Gartrell Road intersection in Aurora, Colorado. A vicinity map illustrating the Chick-fil-A development location is shown in **Figure 1**. A 2,931 square foot Chick-fil-A restaurant is proposed to replace a previous bank that is currently unoccupied. A conceptual site plan is attached in **Appendix E**. It is expected that Chick-fil-A will be completed in the next couple years; therefore, analysis was conducted for the 2025 short-term buildout horizon as well as the 2040 long-term 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 in accordance with the City of Aurora standards and requirements:

- Dry Creek Road & Hinsdale Avenue (#1)
- Dry Creek Road & Gartrell Road (#2)

In addition, the existing full movement shared access on the east side of Hinsdale Avenue (#3) and the existing right-in/right-out shared access along the west side of Gartrell Road (#4) were evaluated.

Regional access to the Chick-fil-A project will be provided by E-470, Parker Road (SH-83), and Arapahoe Road (SH-88). Primary access will be provided by Gartrell Road and Dry Creek Road. Direct access will be provided by the existing full movement shared access on the east side of Hinsdale Avenue (#3) and the existing right-in/right-out shared access along the west side of Gartrell Road (#4).



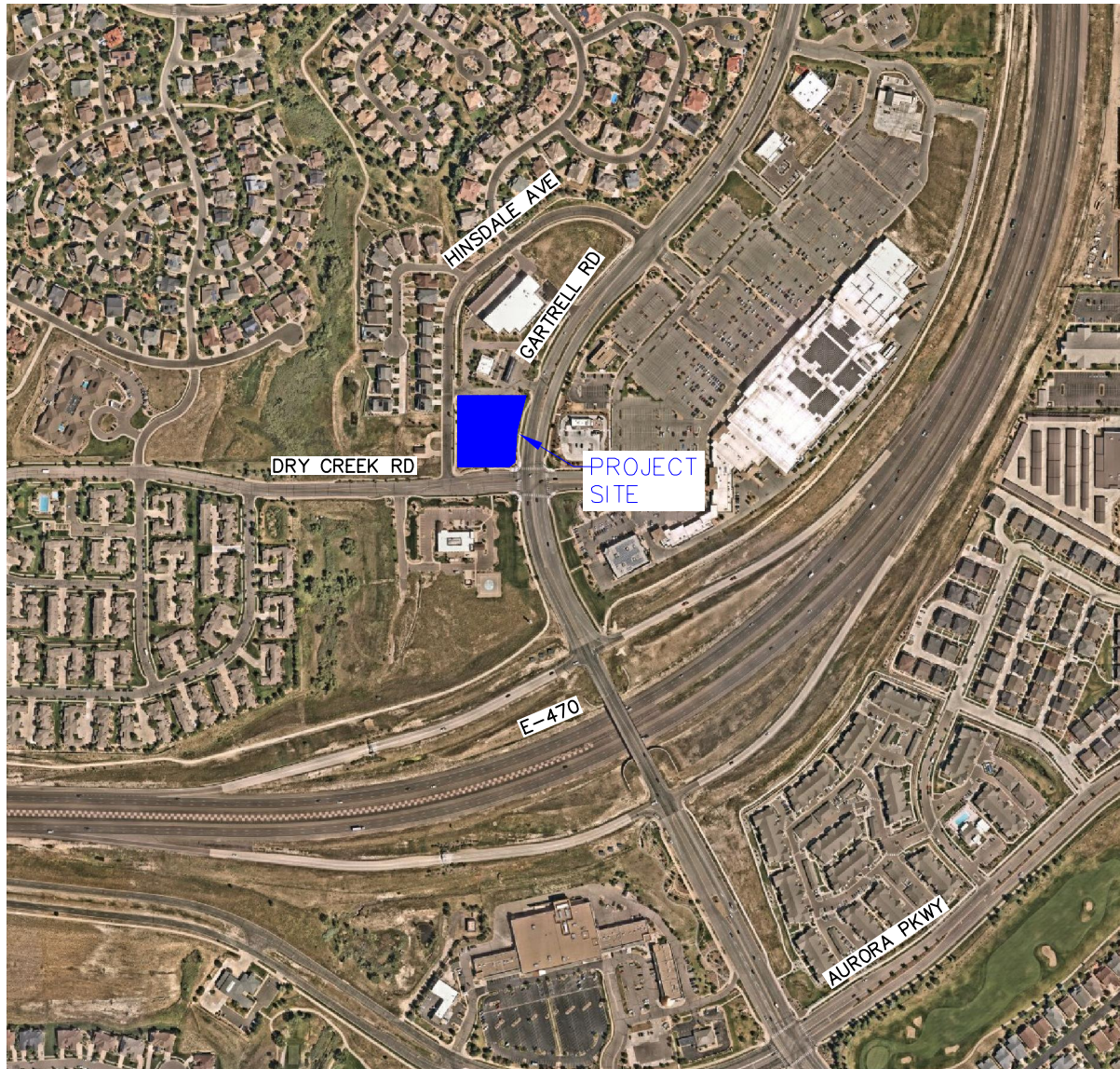


FIGURE 1  
CHICK-FIL-A  
AURORA, COLORADO  
VICINITY MAP



## 3.0 EXISTING AND FUTURE CONDITIONS

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### 3.1 Existing Study Area

The existing site is comprised of an unoccupied bank. A gas station is located to the north of the project site while a medical center is located to the south of Dry Creek Road. is. South of the project site is a hospital. To the east of the project is the Saddle Rock Village retail center while single family homes are located to the west of the project site. The surrounding area primarily consists of single-family residences with a mix of multi-family residences.

### 3.2 Existing Roadway Network

Hinsdale Avenue extends north/south with one through lane in each direction. The posted speed limit is 25 miles per hour along Hinsdale Avenue.

Dry Creek Road extends in the east/west direction as a two-lane roadway. It has a posted speed limit of 35 miles per hour.

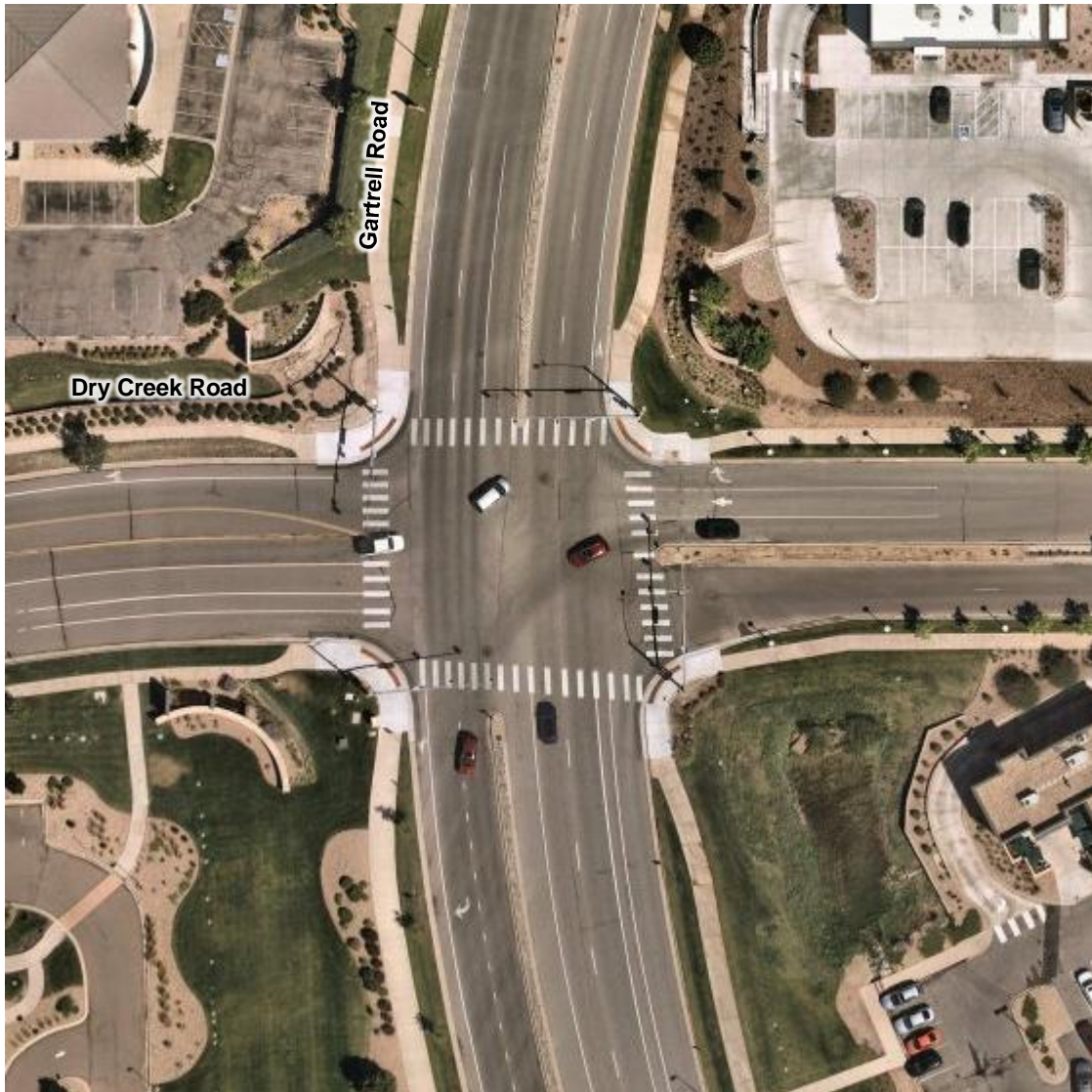
Gartrell Road extends north/south and provides two lanes of travel in each direction. The posted speed limit along the roadway is 40 miles per hour.

The unsignalized 'T'-intersection of Dry Creek Road and Hinsdale Avenue (#1) operates with stop control on the southbound Hinsdale Avenue approach. The southbound approach of this intersection consists of a shared left/right turn lane. The eastbound approach provides a left turn lane and one through lane while the westbound approach consists of a shared through/right turn lane. An aerial photo of the existing intersection configuration is below (north is up - typical).



*Dry Creek Road & Hinsdale Avenue (#1)*

The signalized intersection of Dry Creek Road and Gartrell Road (#2) operates with permissive-only left turn phasing on all four approaches. The northbound approach provides a left turn lane, two through lanes, and a right turn lane while the southbound approach provides a left turn lane and two through lanes with the outside lane being a shared through/right turn lane. The eastbound and westbound approaches provide one left turn lane, one through lane, and one right turn lane. An aerial photo of the existing intersection configuration is below.



*Q Street and 207<sup>th</sup> Street (#2)*

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



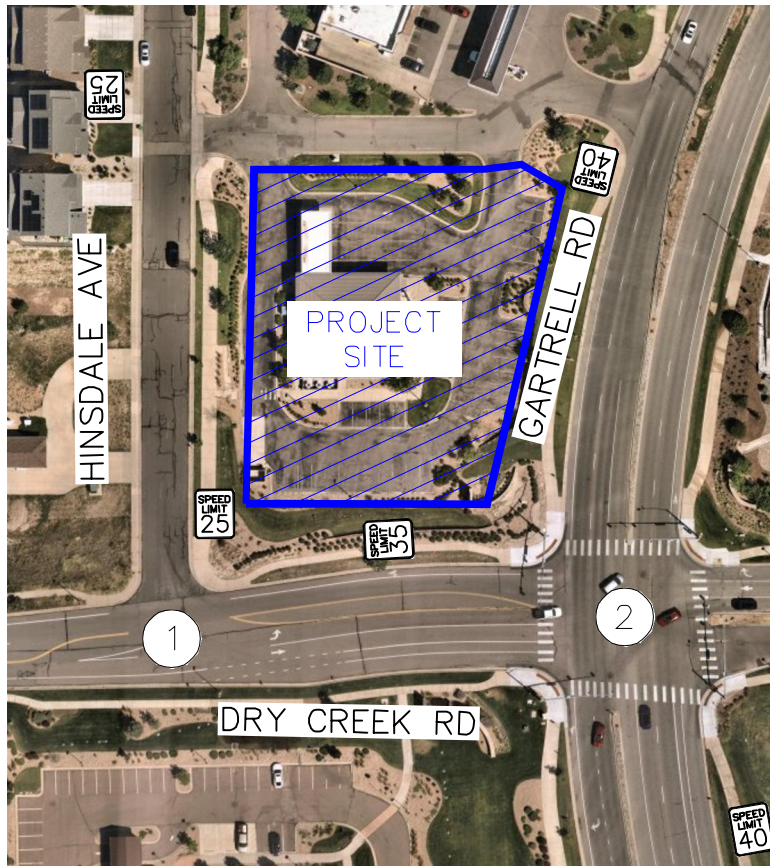
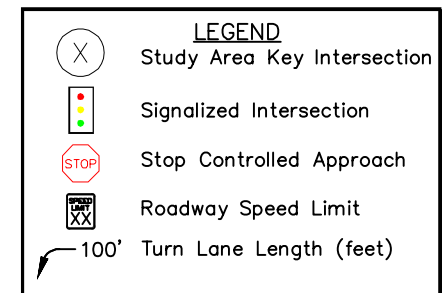
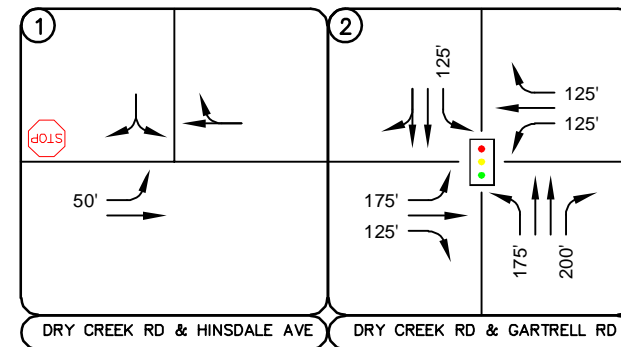


FIGURE 2  
CHICK-FIL-A  
AURORA, COLORADO  
EXISTING GEOMETRY AND CONTROL



### 3.3 Existing Traffic Volumes

Existing turning movement counts were conducted at the study intersections as well as the existing shared accesses along Hinsdale Avenue and Gartrell Road on Wednesday, October 4, 2023 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 study area key intersections traffic volumes are shown in **Figure 3** with count sheets provided in **Appendix A**.

### 3.4 Unspecified Development Traffic Growth

To conform to City of Aurora Traffic Impact Study Guidelines, a two (2) percent annual growth rate was used to estimate future traffic volume conditions for the short-term horizon. This annual growth rate was used to estimate short-term 2025 and long-term 2040 traffic volume projections at the key intersections. The calculated background traffic volumes for 2025 and 2040 are shown in **Figure 4** and **Figure 5**, respectively.



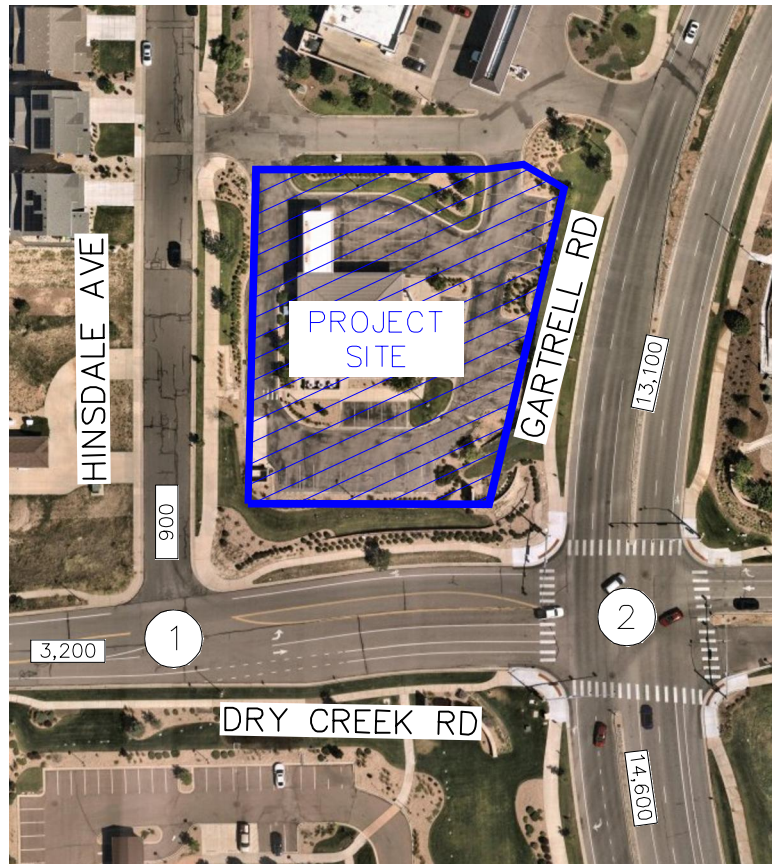
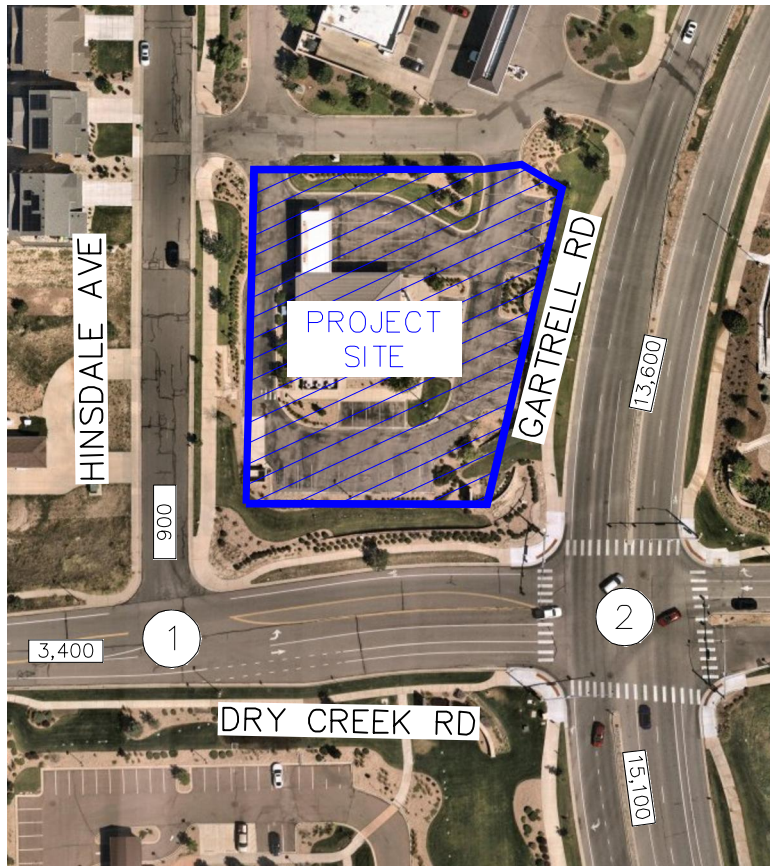


FIGURE 3  
 CHICK-FIL-A  
 AURORA, COLORADO  
 2023 EXISTING TRAFFIC VOLUMES

<p>①</p> <p>← 25(11) ← 18(17) ← 36(45) ← 250(130)</p> <p>35(13) → 232(169) →</p>	<p>②</p> <p>← 194(76) ← 528(496) ← 64(70) ← 53(78) ← 19(12) ← 101(151)</p> <p>116(94) → 20(16) → 64(71) → 80(98) → 263(497) → 101(145) →</p>
<p>DRY CREEK RD &amp; HINSDALE AVE</p>	<p>DRY CREEK RD &amp; GARTRELL RD</p>
<p>Weds, Oct 4, 2023        8:00 to 9:00AM        (4:00 to 5:00PM)</p>	<p>Weds, Oct 4, 2023        7:45 to 8:45AM        (4:00 to 5:00PM)</p>

**LEGEND**

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

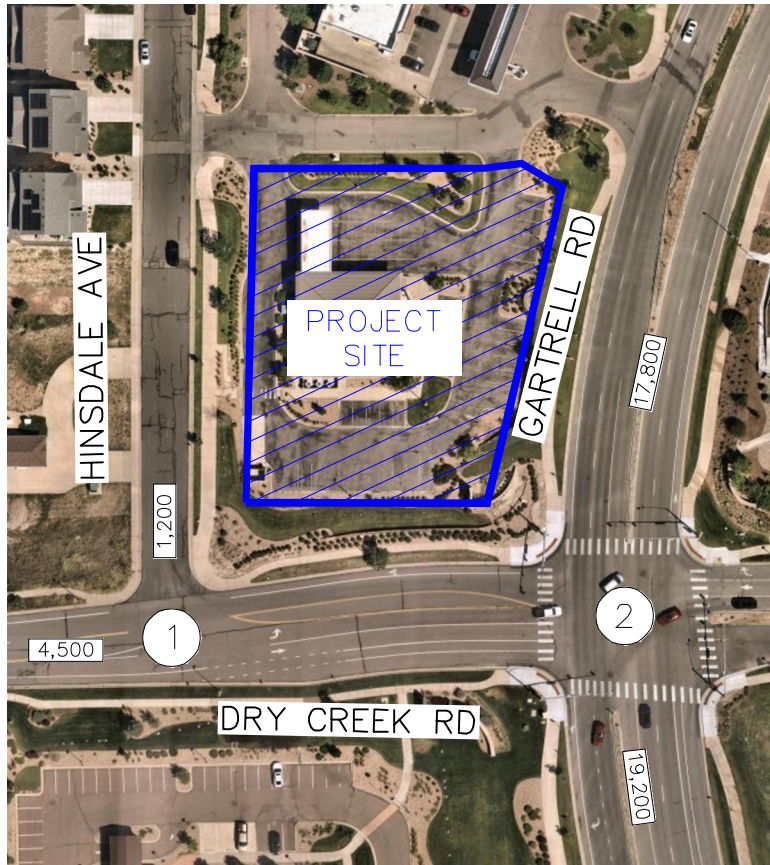


1	2
<div> <div> <div>26(11)</div> <div>19(18)</div> <div>37(47)</div> <div>260(135)</div> </div> <div> <div>36(14)</div> <div>241(176)</div> </div> </div>	<div> <div> <div>202(79)</div> <div>549(516)</div> <div>64(70)</div> <div>53(78)</div> <div>19(12)</div> <div>101(151)</div> </div> <div> <div>121(98)</div> <div>20(16)</div> <div>67(74)</div> <div>83(102)</div> <div>274(517)</div> <div>101(145)</div> </div> </div>
DRY CREEK RD & HINSDALE AVE	DRY CREEK RD & GARTRELL RD

FIGURE 4  
CHICK-FIL-A  
AURORA, 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



1	2
<p>← 35(15)</p> <p>← 25(24)</p> <p>← 50(63)</p> <p>← 350(182)</p> <p>49(18) →</p> <p>325(237) →</p>	<p>← 272(106)</p> <p>← 739(695)</p> <p>← 64(70)</p> <p>← 53(78)</p> <p>← 19(12)</p> <p>← 101(151)</p> <p>162(132) →</p> <p>20(16) →</p> <p>90(99) →</p> <p>112(137)</p> <p>368(696)</p> <p>101(145)</p>
DRY CREEK RD & HINSDALE AVE	DRY CREEK RD & GARTRELL RD

FIGURE 5  
 CHICK-FIL-A  
 AURORA, COLORADO  
 2040 BACKGROUND TRAFFIC VOLUMES

### LEGEND

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



## 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 Fast-Food Restaurant with Drive-Through (ITE Land Use Code 934) for traffic associated with the development.

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 project site en route to a final destination. The pass-by percentages were obtained from the ITE “Trip Generation Manual”, Eleventh Edition which shows a morning peak hour pass-by percentage of 50 percent and an afternoon peak hour pass-by percentage of 55 percent.

Chick-fil-A is expected to generate approximately 1,372 daily weekday driveway trips, with 131 of these trips occurring during the morning peak hour and 97 trips occurring during the afternoon peak hour. Accounting for pass-by, expected net new (non pass-by) trips to the surrounding street network results in approximately 618 weekday daily trips, of which 65 trips and 44 trips are anticipated during the weekday morning and afternoon peak hours, respectively. Calculations were based on the procedure and information provided in the ITE *Trip Generation Manual*, 11<sup>th</sup> Edition, 2021. **Table 1** summarizes the estimated trip generation for the Chick-fil-A redevelopment project. The trip generation worksheets are included in **Appendix B**.

**Table 1 – Chick-fil-A Traffic Generation**

Land Use and Size	Weekday Vehicle Trips						
	Daily	AM Peak Hour			PM Peak Hour		
		In	Out	Total	In	Out	Total
Fast-Food Restaurant w/ DT (ITE 934) – 2,931 Square Feet	1,372	67	64	131	50	47	97

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

Trip generation for this Chick-fil-A redevelopment project has been compared to the trip generation of the bank use previously occupied in the same development area. The previous use was an approximate 4,800 square foot bank. For this study, Kimley-Horn used the ITE Trip Generation Report average rates that apply to Drive-In Bank (ITE 912) for traffic associated with the previous use on site. The trip generation worksheet for the previous bank use is also included in **Appendix C**. The following **Table 2** summarizes the estimated trip generation for the proposed Chick-fil-A project compared to the trips generated by the previous bank use that occupied the same development area.

**Table 2 – Chick-fil-A Redevelopment Trip Generation Comparison**

Land Use and Size	Weekday Vehicle Trips						
	Daily	AM Peak Hour			PM Peak Hour		
		In	Out	Total	In	Out	Total
Previous Use (Currently Vacant) – ITE 11 <sup>th</sup> Edition							
Bank (ITE 912) – 4,800 Square Feet	482	28	20	48	50	51	101
Current Proposal – ITE 11 <sup>th</sup> Edition							
Fast-Food Restaurant w/ DT (ITE 934) – 2,931 Square Feet	1,372	67	64	131	50	47	97
Net Change	+890	+39	+44	+83	+0	-4	-4

As summarized in **Table 2**, the previous bank use has been calculated to be previously generating approximately 482 weekday daily vehicle trips, with 48 of these trips occurring during the morning peak hour, and 101 trips occurring during the afternoon peak hour. The currently proposed Chick-fil-A is anticipated to generate approximately 1,372 weekday daily trips with 131 trips occurring during the morning peak hour and 97 trips occurring during the afternoon peak hour. Therefore, the proposed redevelopment is anticipated to generate 890 more daily trips, 83 more morning peak hour trips, and four (4) afternoon peak hour trips than the use that previously occupied the site. Therefore, the net change is the difference in trips that were approved with the previous development application. Of note, intersection improvements are determined based on traffic volumes from the controlling peak hour which typically occurs during the afternoon peak hour.

## 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 trip distribution for the proposed development is illustrated in **Figure 6**.

Since the project is a commercial development, a certain amount of traffic attracted to the development will already be passing by the site. This pass-by distribution is a means to quantify the amount of traffic arriving to the site from a given direction and then leaving the site in the same original direction of travel, continuing the driver's trip. 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 hours were accounted for in the pass-by distributions as shown in **Figures 7 and 8**, respectively.

#### 4.3 Traffic Assignment

Chick-fil-A 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 project

#### 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 2040 planning horizon. These total traffic volumes for the study area are illustrated for the 2025 and 2040 horizon years in **Figures 11 and 12**, respectively.

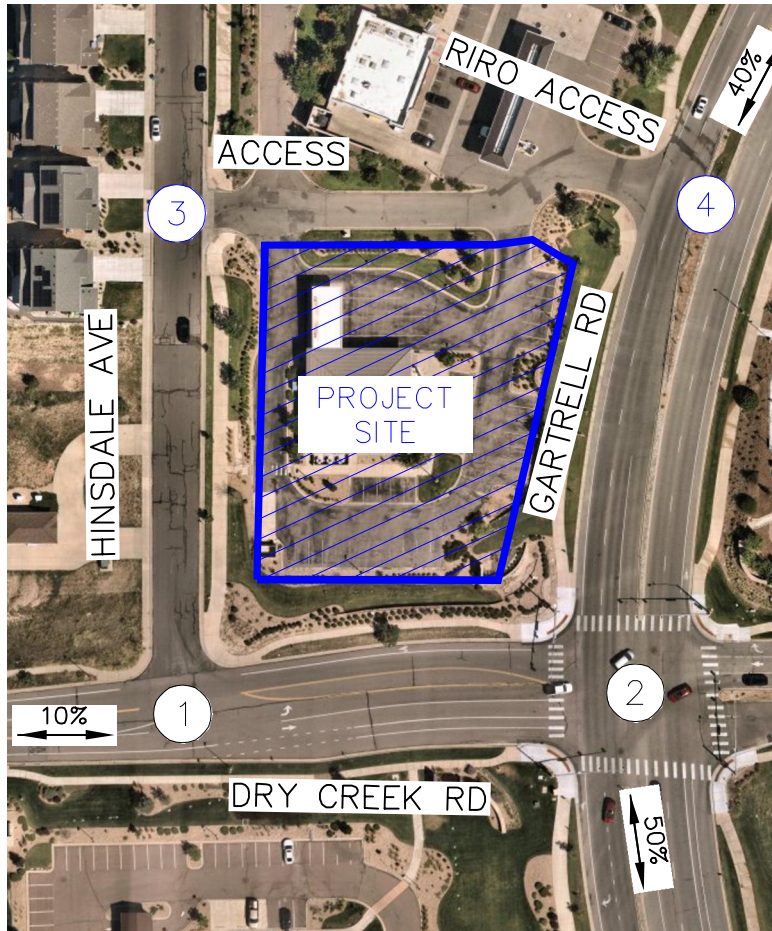
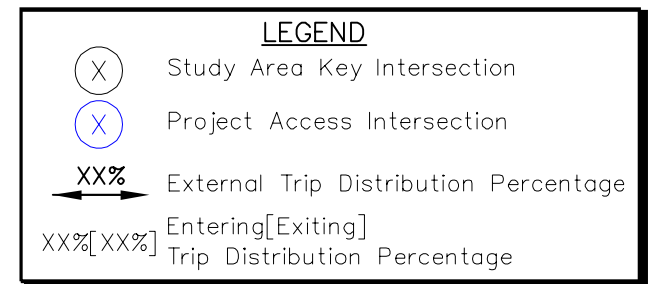
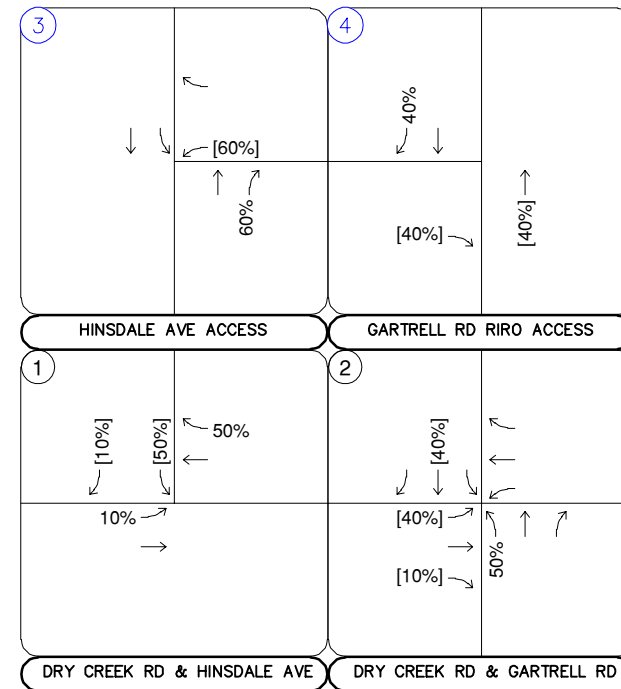


FIGURE 6  
CHICK-FIL-A  
AURORA, COLORADO  
NON PASS-BY PROJECT TRIP DISTRIBUTION



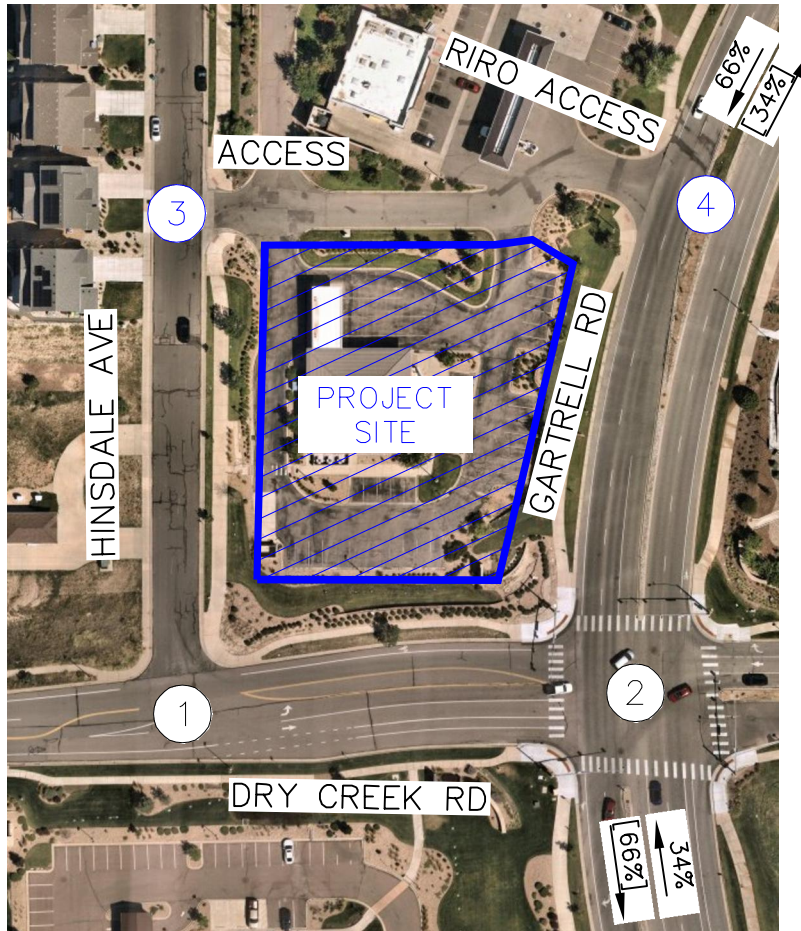
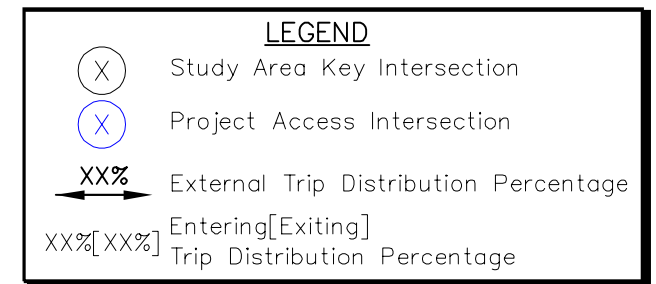
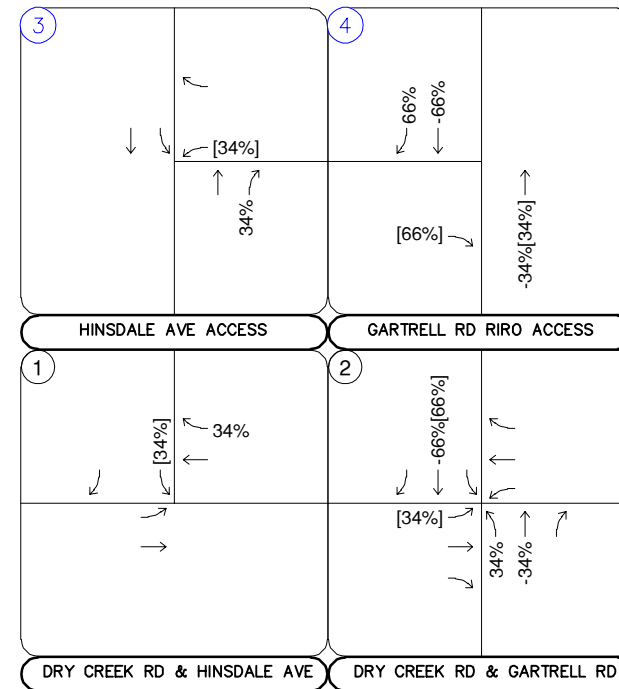


FIGURE 7  
CHICK-FIL-A  
AURORA, COLORADO  
AM PASS-BY PROJECT TRIP DISTRIBUTION





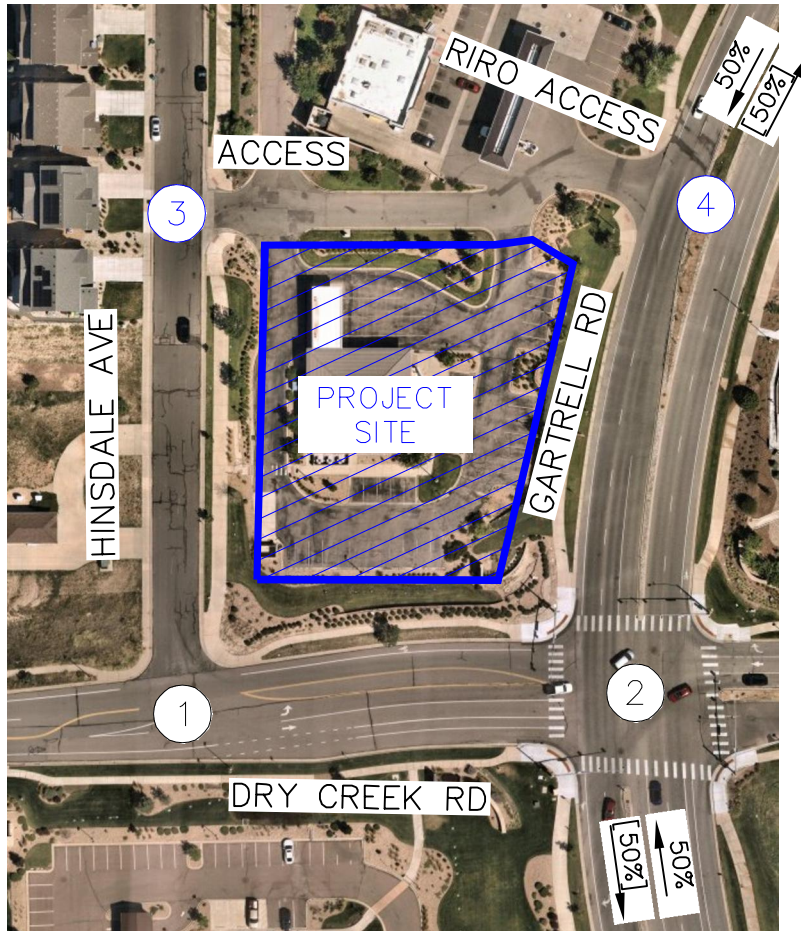
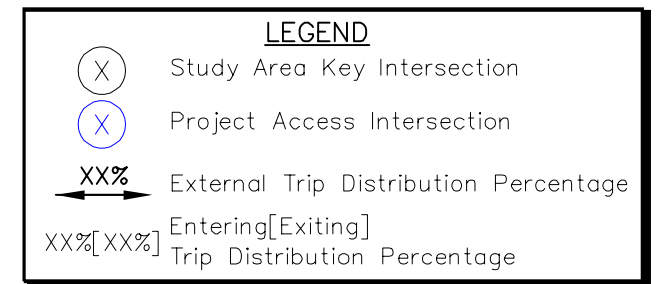
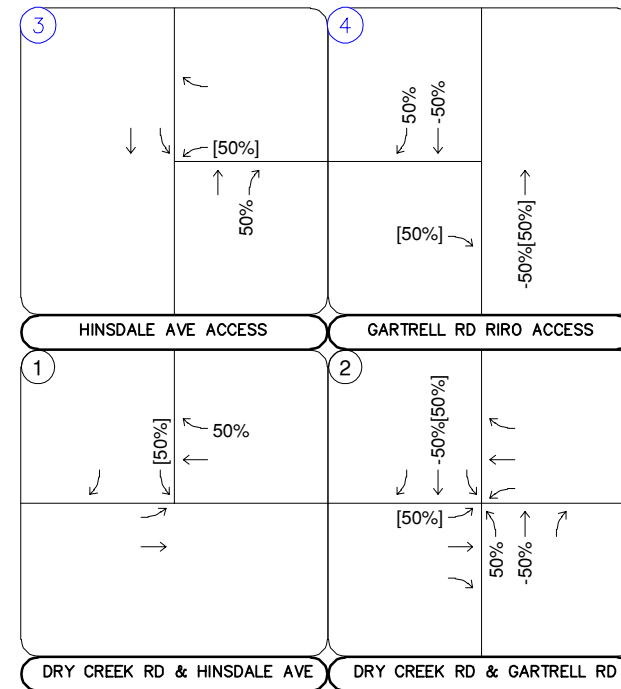


FIGURE 8  
CHICK-FIL-A  
AURORA, COLORADO  
PM PASS-BY PROJECT TRIP DISTRIBUTION



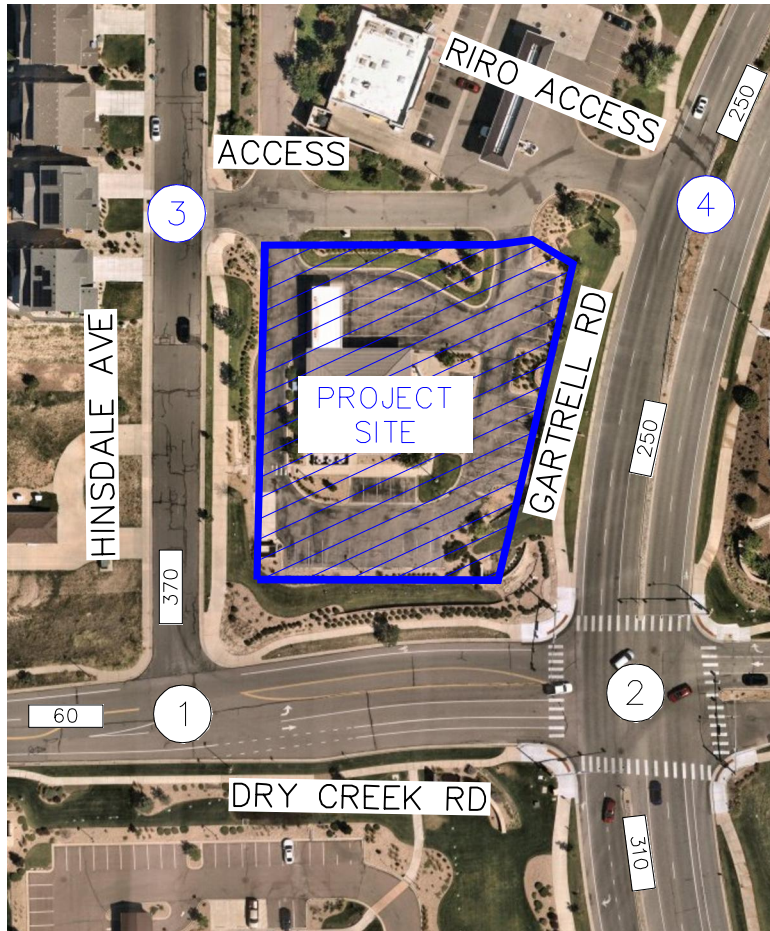
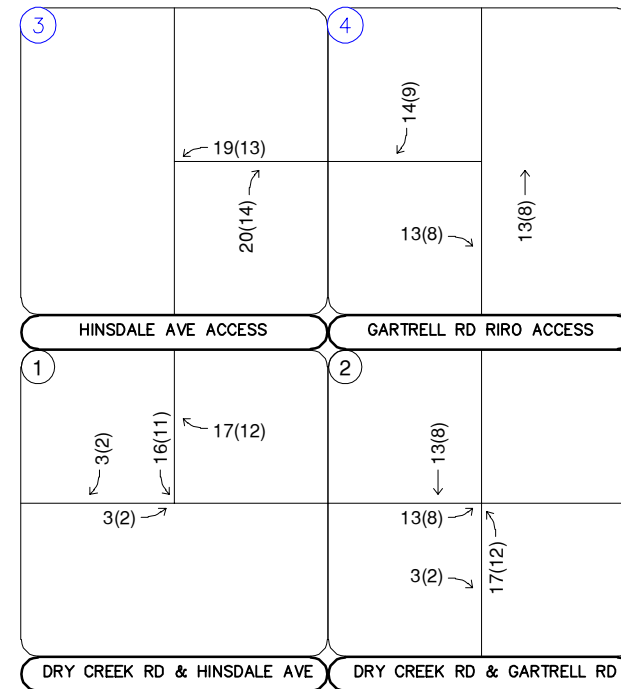


FIGURE 9  
CHICK-FIL-A  
AURORA, COLORADO  
NON PASS-BY PROJECT TRAFFIC ASSIGNMENT



**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



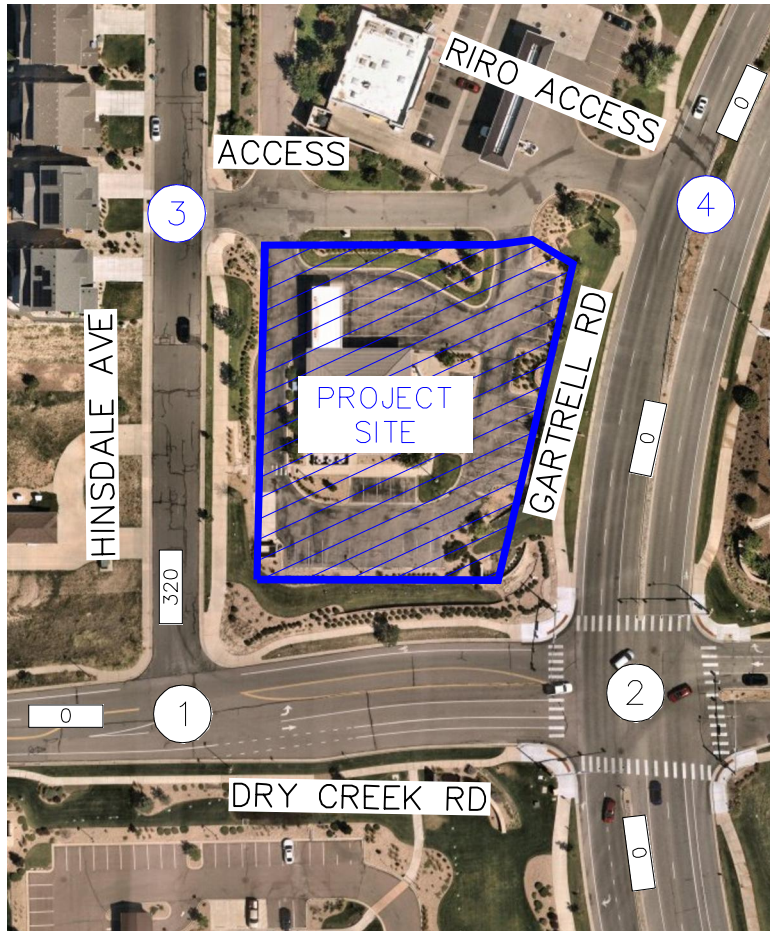
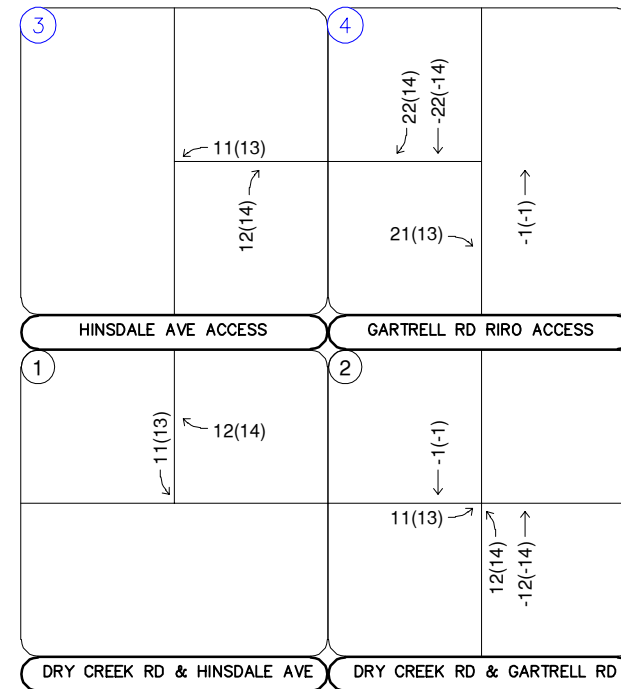


FIGURE 10  
CHICK-FIL-A  
AURORA, COLORADO  
PASS-BY PROJECT TRAFFIC ASSIGNMENT



**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

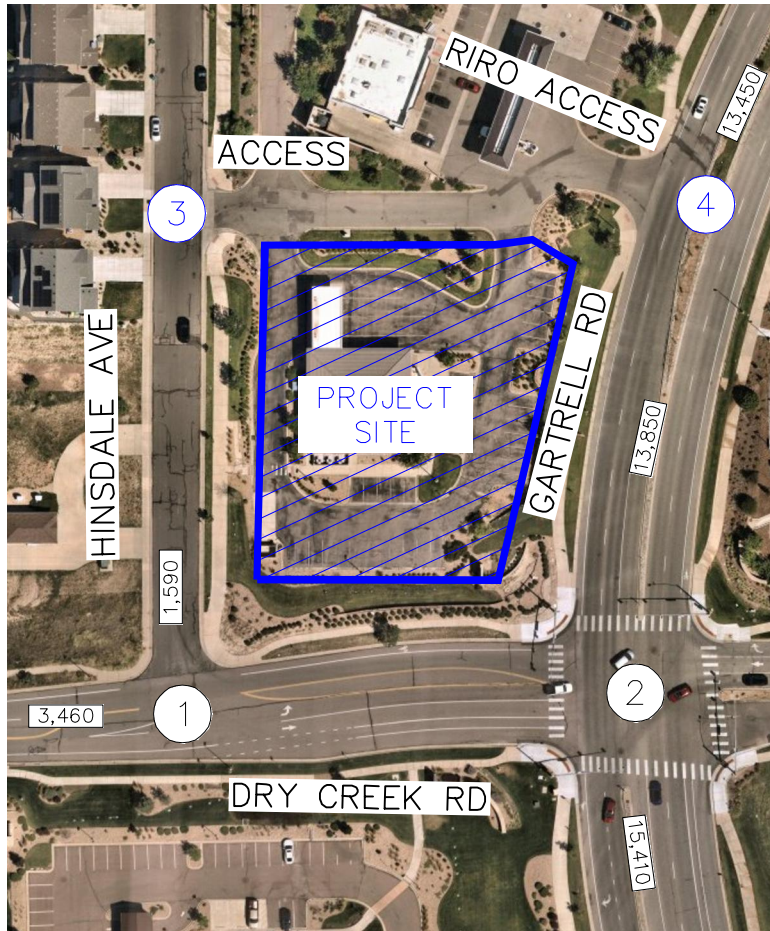
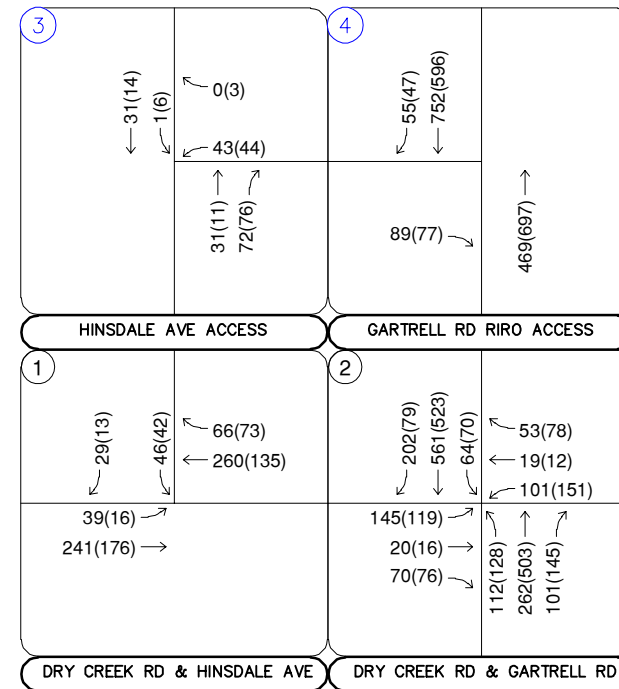


FIGURE 11  
CHICK-FIL-A  
AURORA, COLORADO  
2025 TOTAL TRAFFIC VOLUMES



**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

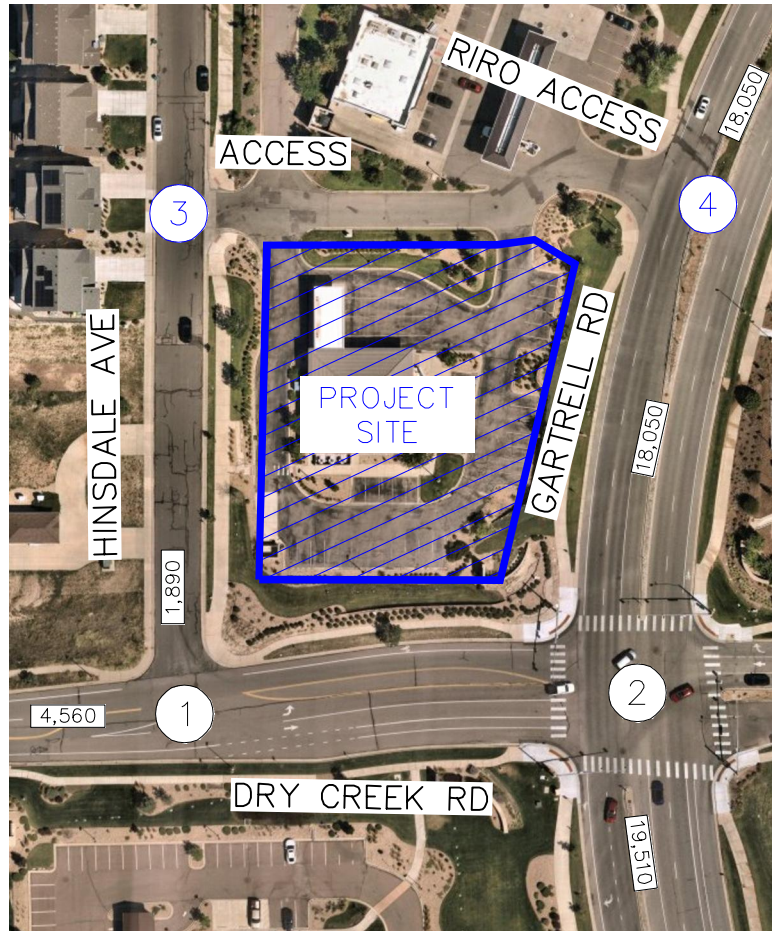
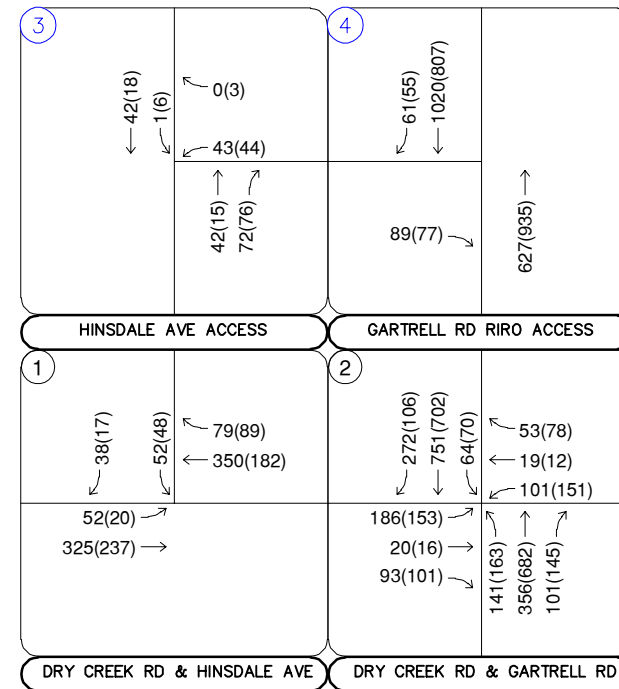


FIGURE 12  
CHICK-FIL-A  
AURORA, COLORADO  
2040 TOTAL TRAFFIC VOLUMES



**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



## 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 2040 development horizons at the identified key intersections. The acknowledged source for determining overall capacity is 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). According to City of Aurora guidelines for signalized intersections, individual movements may be allowed to fall to LOS E, but in most cases the overall intersection must operate (or be projected to operate) at a LOS D or better during AM and PM peak periods. If the existing LOS for an intersection is worse than LOS D, potential alternatives to improve the intersection to achieve LOS D should be provided or maintain the existing critical lane volume with the addition of site generated traffic. Minor movements at unsignalized intersections, such as left turns onto a major arterial from a side street, may be allowed to fall below LOS D pending the specific conditions. Movements which have a light traffic demand, and a viable travel alternative may be allowed to fall below LOS D. **Table 3** shows the definition of level of service for signalized and unsignalized intersections.

**Table 3 – 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.

<sup>2</sup> Transportation Research Board, *Highway Capacity Manual*, Sixth Edition, Washington DC, 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 and all-way stop controlled intersections are defined for each approach and for the overall intersection.

## 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 C**. 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 2040 horizon analysis. The existing heavy vehicle percentages obtained from the turning movement counts were also used in each horizon year. 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.



### Dry Creek Rd & Hinsdale Avenue (#1)

The unsignalized 'T'-intersection of Dry Creek Road and Hinsdale Avenue (#1) operates with stop control on the southbound Hinsdale Avenue approach. The intersection movements operate acceptably at LOS B or better during both peak hours under existing conditions. With project traffic, all movements are anticipated to continue operating at an acceptable level of service throughout the 2040 horizon. Therefore, no improvements or modifications are anticipated to be needed at this intersection based on the addition of project traffic and this operational level of service analysis. **Table 4** provides the results of the LOS analysis conducted at this intersection.

**Table 4 – Dry Creek Rd & Hinsdale Avenue (#1) LOS Results**

Scenario	AM Peak Hour		PM Peak Hour	
	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
<b>2023 Existing</b>				
Eastbound Left	8.8	A	7.8	A
Southbound Approach	12.9	B	10.0	B
<b>2025 Background</b>				
Eastbound Left	8.9	A	7.8	A
Southbound Approach	13.1	B	10.1	B
<b>2025 Background Plus Project</b>				
Eastbound Left	9.2	A	7.9	A
Southbound Approach	15.7	C	10.7	B
<b>2040 Background</b>				
Eastbound Left	9.3	A	7.8	A
Southbound Approach	14.3	B	10.2	B
<b>2040 Background Plus Project</b>				
Eastbound Left	9.6	A	7.9	A
Southbound Approach	17.1	C	10.7	B

### Dry Creek Rd & Gartrell Road (#2)

The signalized intersection of Dry Creek Road and Gartrell Road (#2) operates with permissive-only left turn phasing on all four approaches. The intersection operates acceptably at LOS B during both peak hours under existing conditions. With project traffic, this intersection is anticipated to continue operating at an acceptable level of service throughout the 2040 horizon. Therefore, no improvements or modifications are anticipated to be needed at this intersection based on the addition of project traffic and this operational level of service analysis. **Table 5** provides the results of the LOS analysis conducted at this intersection.

**Table 5 – Dry Creek Rd & Gartrell Road (#2) LOS Results**

Scenario	AM Peak Hour		PM Peak Hour	
	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
2023 Existing	15.6	B	15.1	B
2025 Background	15.6	B	15.1	B
2025 Background Plus Project	16.4	B	15.5	B
2040 Background	15.6	B	14.8	B
2040 Background Plus Project	16.6	B	15.3	B

## Project Accesses

With completion of the Chick-fil-A project, access will be provided from the existing full movement shared access on the east side of Hinsdale Avenue (#3) and the existing right-in/right-out shared access along the west side of Gartrell Road (#4). **Table 6** provides the results of the level of service for these project accesses. 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 2040 long-term horizons.

**Table 6 – Project Access Level of Service Results**

Intersection	2025 Total				2040 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>Hinsdale Ave Access (#3)</b>								
Westbound Approach	9.5	A	9.2	A	9.5	A	9.2	A
Southbound Left	7.5	A	7.5	A	7.5	A	7.5	A
<b>Gartrell Rd RIRO Access (#4)</b>								
Eastbound Approach	14.1	B	11.3	B	15.1	C	12.7	B

## 5.3 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 7** with calculations provided within the level of service operational sheets of **Appendix C** for unsignalized intersections and **Appendix D** for signalized intersections.

**Table 7 – Turn Lane Queuing Analysis Results**

Intersection Turn Lane	Existing Turn Lane Length (feet)	2025 Calculated Queue (feet)	2025 Recommended Length (feet)	2040 Calculated Queue (feet)	2040 Recommended Length (feet)
<b>Dry Creek Rd &amp; Hinsdale Ave (#1)</b>					
Eastbound Left	50'	25'	50'	25'	50'
<b>Dry Creek Rd &amp; Gartrell Rd (#2)</b>					
Eastbound Left	175'	172'	175'	215'	175'
Eastbound Right	125'	64'	125'	45'	125'
Westbound Left	125'	175'	175'	175'	175'
Westbound Right	125'	62'	125'	40'	125'
Northbound Left	175'	80'	175'	149'	175'
Northbound Right	200'	25'	200'	25'	200'
Southbound Left	125'	38'	125'	40'	125'

Red Text = Storage Deficiency; Blue Text = Recommendation

As shown in the table above, the westbound left turn lane at the Dry Creek Road and Gartrell Road intersection could be restriped from 125 feet to 175 feet by 2025. However, this storage length is currently being accommodated in space designated for left turn movements but is not currently striped to 175 feet; therefore, the City of Aurora could consider keeping the striping in the current condition. Of note, project traffic does not contribute to this movement.

By 2040, eastbound left turn queues may extend beyond the available storage at the Dry Creek Road and Gartrell Road intersection; however, this turn lane cannot be extended due to the adjacent intersection to the west. This is a long-term planning level reported deficiency; therefore, the City of Aurora should continue to monitor this intersection in the future to determine if left turn signal phasing needs to be modified in the future.

#### **5.4 Pedestrian Safety and Traffic Calming**

Sidewalks are provided on both sides of Gartrell Road, Hinsdale Avenue, and Dry Creek Road in the site vicinity. Crosswalks are provided on all four legs at the Dry Creek Road and Gartrell Road intersection. Bicycle lanes are currently provided along both sides of Gartrell Road and Dry Creek Road west of Gartrell Road. Public transportation does not currently exist near the project site or in the surrounding area.

#### **5.5 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**.



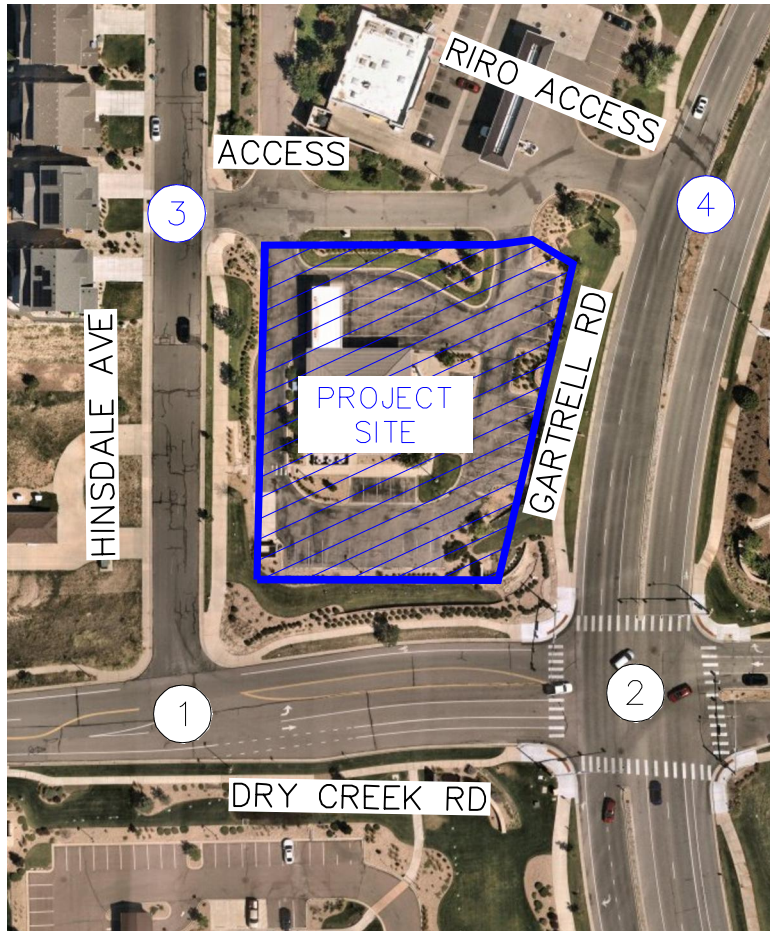
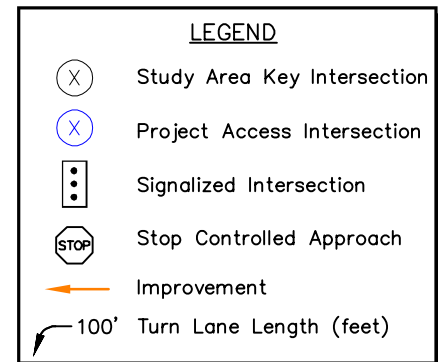
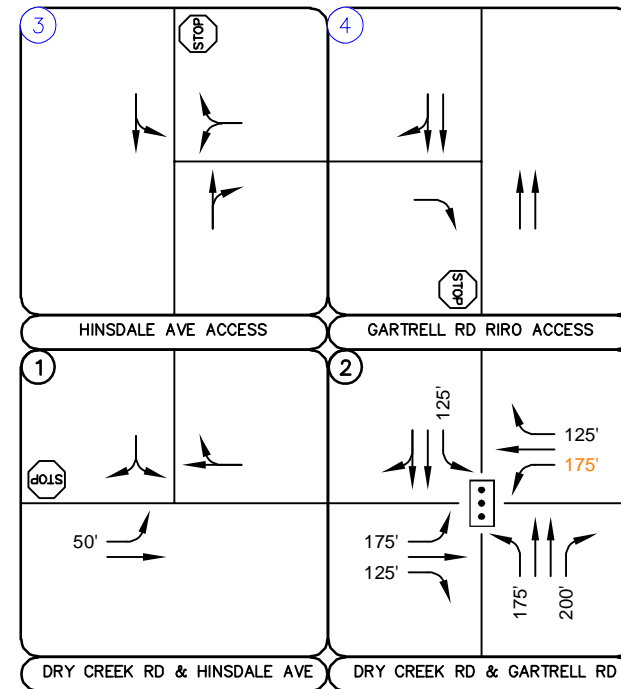


FIGURE 13  
CHICK-FIL-A  
AURORA, COLORADO  
RECOMMENDED GEOMETRY AND CONTROL



## 6.0 CONCLUSIONS AND RECOMMENDATIONS

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Based on the analysis presented in this report, Kimley-Horn believes the proposed Chick-fil-A redevelopment project 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:

- The street network surrounding the project site and existing accesses were previously analyzed and designed based on full buildout of the surrounding commercial center including a bank previously occupied in the same development area as this Chick-fil-A proposal. The proposed redevelopment is anticipated to generate 890 more daily trips, 83 more morning peak hour trips, and four (4) afternoon peak hour trips than the bank use that previously occupied the site. Therefore, the net change is the difference in trips that were approved with the previous development application. Of note, intersection improvements are determined based on traffic volumes from the controlling peak hour which typically occurs during the afternoon peak hour. Therefore, it is believed that roadway and project accesses will accommodate the project traffic from the proposed Chick-fil-A replacing the existing bank.
- The westbound left turn lane at the Dry Creek Road and Gartrell Road intersection could be restriped from 125 feet to 175 feet by 2025. However, this storage length is currently being accommodated in space designated for left turn movements but is not currently striped to 175 feet; therefore, the City of Aurora could consider keeping the striping in the current condition. Of note, project traffic does not contribute to this movement.
- Any onsite or offsite improvements should be incorporated into the Civil Drawings and conform to standards of the City of Aurora and the Manual on Uniform Traffic Control Devices (MUTCD) – 2009 Edition.

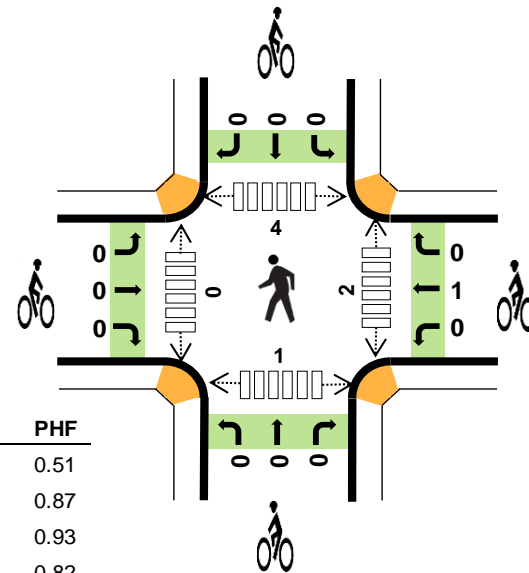
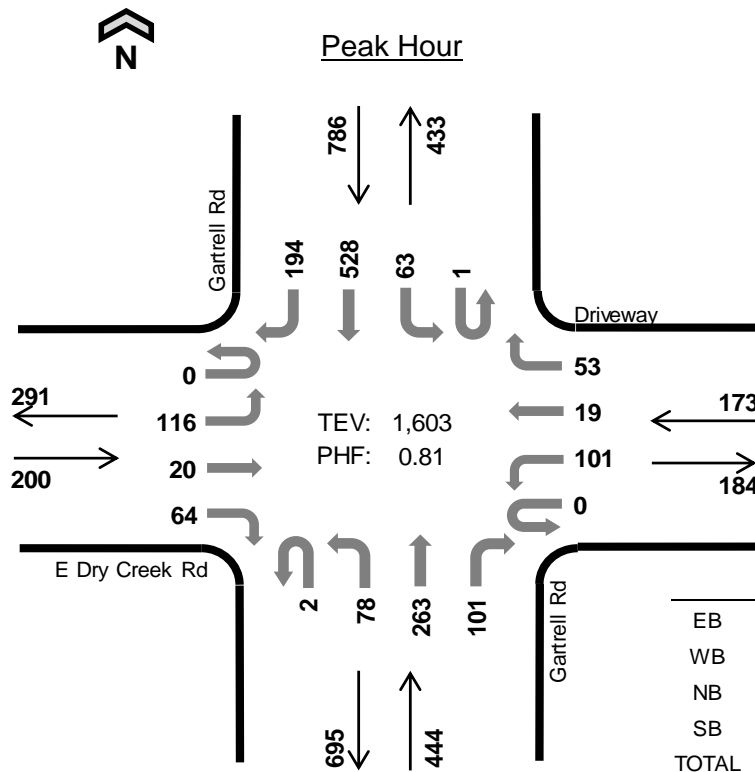
# APPENDICES

# APPENDIX A

## Intersection Count Sheets



# Gartrell Rd E Dry Creek Rd



	HV %	PHF
EB	4.0%	0.51
WB	1.2%	0.87
NB	3.4%	0.93
SB	2.7%	0.82
TOTAL	2.9%	0.81

## Count Summaries

Interval Start		E Dry Creek Rd				Driveway				Gartrell Rd				Gartrell Rd				15-min Total	Rolling One Hour
		Eastbound				Westbound				Northbound				Southbound					
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM		0	8	0	13	0	15	0	13	0	5	45	23	0	10	108	7	247	0
7:15 AM		0	17	1	15	0	22	1	8	0	8	63	20	0	13	134	10	312	0
7:30 AM		0	21	3	15	0	30	3	8	5	19	80	24	0	12	143	17	380	0
7:45 AM		0	16	3	13	0	25	3	8	1	16	75	23	0	14	140	33	370	1,309
8:00 AM		0	17	4	11	0	23	1	14	0	17	60	28	0	15	136	19	345	1,407
8:15 AM		0	17	6	14	0	27	4	18	0	22	71	27	1	21	130	37	395	1,490
8:30 AM		0	66	7	26	0	26	11	13	1	23	57	23	0	13	122	105	493	1,603
8:45 AM		0	52	3	26	0	31	4	9	0	15	59	25	1	7	101	29	362	1,595
Count Total		0	214	27	133	0	199	27	91	7	125	510	193	2	105	1,014	257	2,904	0
Peak Hour	All	0	116	20	64	0	101	19	53	2	78	263	101	1	63	528	194	1,603	0
	HV	0	2	1	5	0	2	0	0	0	7	6	2	0	1	11	9	46	0
	HV%	-	2%	5%	8%	-	2%	0%	0%	0%	9%	2%	2%	0%	2%	2%	5%	3%	0

Note: Count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
7:00 AM	0	0	3	5	8	0	0	0	0	0	0	0	1	0	1
7:15 AM	0	1	1	3	5	0	0	0	0	0	0	0	0	0	0
7:30 AM	3	0	2	8	13	2	0	0	0	2	5	0	4	0	9
7:45 AM	2	1	1	2	6	0	0	0	0	0	0	0	2	0	2
8:00 AM	0	0	2	1	3	0	0	0	0	0	0	0	0	1	1
8:15 AM	1	1	3	9	14	0	1	0	0	1	2	0	2	0	4
8:30 AM	5	0	9	9	23	0	0	0	0	0	0	0	0	0	0
8:45 AM	12	0	6	5	23	0	0	0	0	0	0	0	0	0	0
Count Total	23	3	27	42	95	2	1	0	0	3	7	0	9	1	17
Peak Hour	8	2	15	21	46	0	1	0	0	1	2	0	4	1	7

**Count Summaries - Heavy Vehicles**

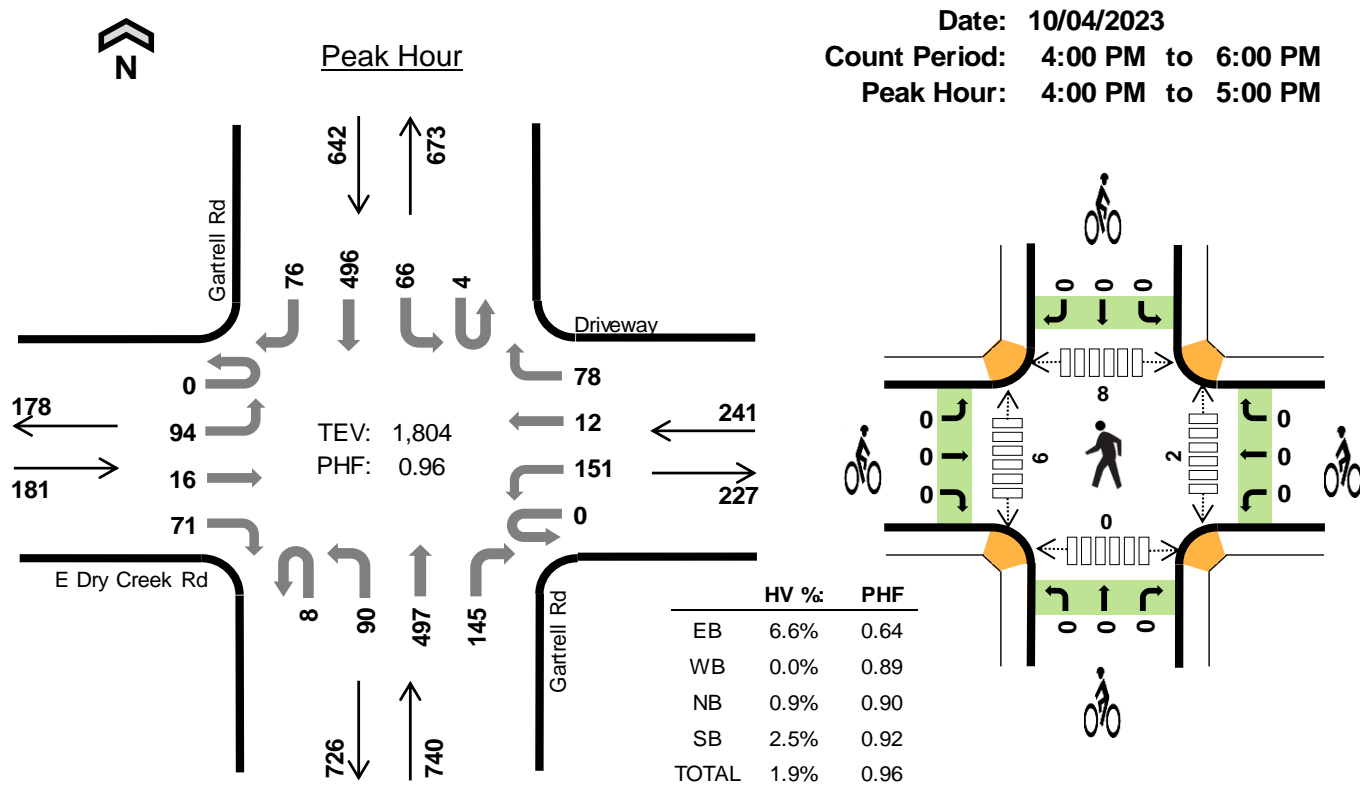
Interval Start	E Dry Creek Rd				Driveway				Gartrell Rd				Gartrell Rd				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM	0	0	0	0	0	0	0	0	0	0	2	1	0	0	4	1	8	0
7:15 AM	0	0	0	0	0	1	0	0	0	0	0	1	0	1	1	1	5	0
7:30 AM	0	3	0	0	0	0	0	0	0	1	1	0	0	1	5	2	13	0
7:45 AM	0	0	0	2	0	1	0	0	0	1	0	0	0	0	2	0	6	32
8:00 AM	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	1	3	27
8:15 AM	0	0	1	0	0	1	0	0	0	1	1	1	0	1	7	1	14	36
8:30 AM	0	2	0	3	0	0	0	0	0	5	4	0	0	0	2	7	23	46
8:45 AM	0	3	0	9	0	0	0	0	0	0	6	0	0	0	3	2	23	63
Count Total	0	8	1	14	0	3	0	0	0	8	15	4	0	3	24	15	95	0
Peak Hour	0	2	1	5	0	2	0	0	0	7	6	2	0	1	11	9	46	0

**Count Summaries - Bikes**

Interval Start	E Dry Creek Rd			Driveway			Gartrell Rd			Gartrell Rd			15-min Total	Rolling One Hour
	Eastbound			Westbound			Northbound			Southbound				
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	2	0	0	0	0	0	0	0	0	0	2	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	2
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	2
8:15 AM	0	0	0	0	1	0	0	0	0	0	0	0	1	3
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Count Total	0	0	2	0	1	0	0	0	0	0	0	0	3	0
Peak Hour	0	0	0	0	1	0	0	0	0	0	0	0	1	0

Note: U-Turn volumes for bikes are included in Left-Turn, if any.

# Gartrell Rd E Dry Creek Rd



## Count Summaries

Interval Start		E Dry Creek Rd				Driveway				Gartrell Rd				Gartrell Rd				15-min Total	Rolling One Hour
		Eastbound				Westbound				Northbound				Southbound					
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM		0	26	4	17	0	41	3	24	0	16	110	30	2	23	133	16	445	0
4:15 PM		0	16	6	14	0	40	3	16	2	32	132	40	1	15	119	8	444	0
4:30 PM		0	11	3	13	0	38	3	22	4	22	128	42	0	7	116	34	443	0
4:45 PM		0	41	3	27	0	32	3	16	2	20	127	33	1	21	128	18	472	1,804
5:00 PM		0	22	3	9	0	36	2	22	3	19	107	42	2	16	110	13	406	1,765
5:15 PM		0	19	6	6	0	33	5	20	2	20	125	38	3	13	99	11	400	1,721
5:30 PM		0	14	4	10	0	32	5	21	0	16	106	34	2	16	99	17	376	1,654
5:45 PM		0	10	0	3	0	42	2	21	0	16	98	52	1	13	118	12	388	1,570
Count Total		0	159	29	99	0	294	26	162	13	161	933	311	12	124	922	129	3,374	0
Peak Hour	All	0	94	16	71	0	151	12	78	8	90	497	145	4	66	496	76	1,804	0
	HV	0	7	0	5	0	0	0	0	0	3	4	0	0	0	8	8	35	0
	HV%	-	7%	0%	7%	-	0%	0%	0%	0%	3%	1%	0%	0%	0%	2%	11%	2%	0

Note: Count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	2	0	0	5	7	0	0	0	0	0	1	6	8	0	15
4:15 PM	0	0	5	4	9	0	0	0	0	0	1	0	0	0	1
4:30 PM	0	0	2	7	9	0	0	0	0	0	0	0	0	0	0
4:45 PM	10	0	0	0	10	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	1	1	0	0	0	0	0	0	0	6	0	6
5:15 PM	0	0	1	0	1	0	0	0	0	0	0	1	1	0	2
5:30 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	1	2
5:45 PM	0	0	0	1	1	0	0	0	0	0	0	0	0	1	1
Count Total	12	0	8	18	38	0	0	0	0	0	3	7	15	2	27
Peak Hour	12	0	7	16	35	0	0	0	0	0	2	6	8	0	16

**Count Summaries - Heavy Vehicles**

Interval Start	E Dry Creek Rd				Driveway				Gartrell Rd				Gartrell Rd				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	1	0	1	0	0	0	0	0	0	0	0	0	0	4	1	7	0
4:15 PM	0	0	0	0	0	0	0	0	0	1	4	0	0	0	3	1	9	0
4:30 PM	0	0	0	0	0	0	0	0	0	2	0	0	0	0	1	6	9	0
4:45 PM	0	6	0	4	0	0	0	0	0	0	0	0	0	0	0	0	10	35
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	29
5:15 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	21
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	3
Count Total	0	7	0	5	0	0	0	0	0	4	4	0	0	0	10	8	38	0
Peak Hour	0	7	0	5	0	0	0	0	0	3	4	0	0	0	8	8	35	0

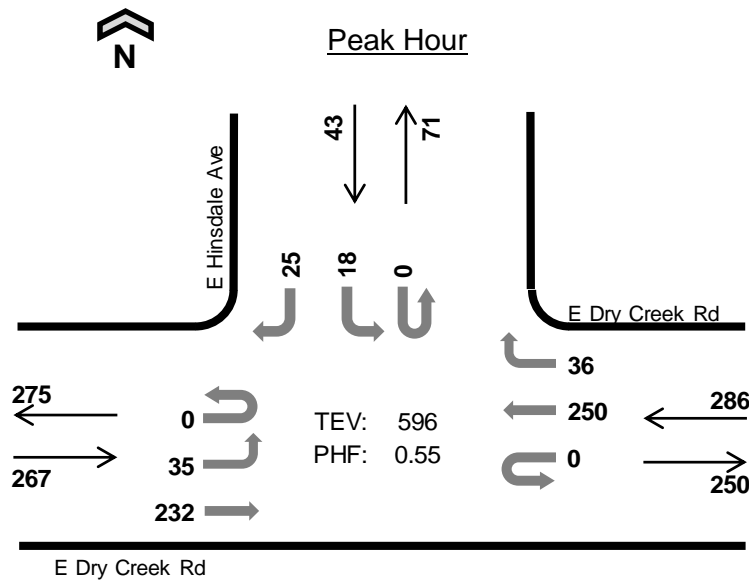
**Count Summaries - Bikes**

Interval Start	E Dry Creek Rd			Driveway			Gartrell Rd			Gartrell Rd			15-min Total	Rolling One Hour
	Eastbound			Westbound			Northbound			Southbound				
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Count Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Peak Hour	0	0	0	0	0	0	0	0	0	0	0	0	0	0

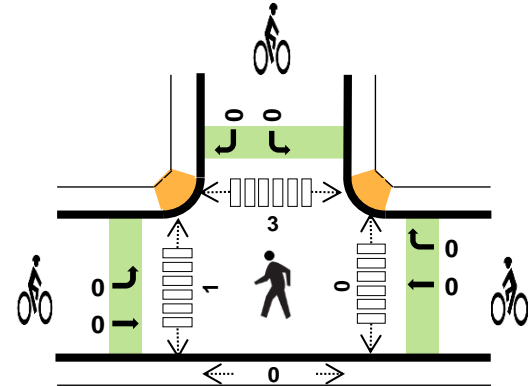
Note: U-Turn volumes for bikes are included in Left-Turn, if any.



# E Hinsdale Ave E Dry Creek Rd



Date: 10/04/2023  
Count Period: 7:00 AM to 9:00 AM  
Peak Hour: 8:00 AM to 9:00 AM



	HV %	PHF
EB	6.4%	0.57
WB	5.9%	0.53
NB	-	-
SB	2.3%	0.60
TOTAL	5.9%	0.55

## Count Summaries

Interval Start		E Dry Creek Rd				E Dry Creek Rd				n/a				E Hinsdale Ave				15-min Total	Rolling One Hour
		Eastbound				Westbound				Northbound				Southbound					
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM		0	3	21	0	0	0	9	3	0	0	0	0	0	5	0	1	42	0
7:15 AM		0	5	27	0	0	0	13	7	0	0	0	0	0	2	0	0	54	0
7:30 AM		0	1	36	0	0	0	30	10	0	0	0	0	0	4	0	2	83	0
7:45 AM		0	2	28	0	0	0	42	9	0	0	0	0	0	3	0	1	85	264
8:00 AM		0	0	25	0	0	0	27	12	0	0	0	0	0	4	0	0	68	290
8:15 AM		0	3	35	0	0	0	49	11	0	0	0	0	0	5	0	7	110	346
8:30 AM		0	16	102	0	0	0	132	4	0	0	0	0	0	3	0	15	272	535
8:45 AM		0	16	70	0	0	0	42	9	0	0	0	0	0	6	0	3	146	596
Count Total		0	46	344	0	0	0	344	65	0	0	0	0	0	32	0	29	860	0
Peak Hour	All	0	35	232	0	0	0	250	36	0	0	0	0	0	18	0	25	596	0
	HV	0	0	17	0	0	0	17	0	0	0	0	0	0	1	0	0	35	0
	HV%	-	0%	7%	-	-	-	7%	0%	-	-	-	-	-	6%	-	0%	6%	0

Note: Count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
7:00 AM	0	1	0	0	1	0	0	0	0	0	0	0	1	0	1
7:15 AM	1	1	0	0	2	0	0	0	0	0	0	0	0	0	0
7:30 AM	3	4	0	1	8	1	0	0	0	1	0	0	4	0	4
7:45 AM	1	1	0	1	3	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	1	0	0	1	0	0	0	0	0	0	0	1	0	1
8:15 AM	0	2	0	1	3	0	0	0	0	0	0	1	2	0	3
8:30 AM	6	12	0	0	18	0	0	0	0	0	0	0	0	0	0
8:45 AM	11	2	0	0	13	0	0	0	0	0	0	0	0	0	0
Count Total	22	24	0	3	49	1	0	0	0	1	0	1	8	0	9
Peak Hr	17	17	0	1	35	0	0	0	0	0	0	1	3	0	4

**Count Summaries - Heavy Vehicles**

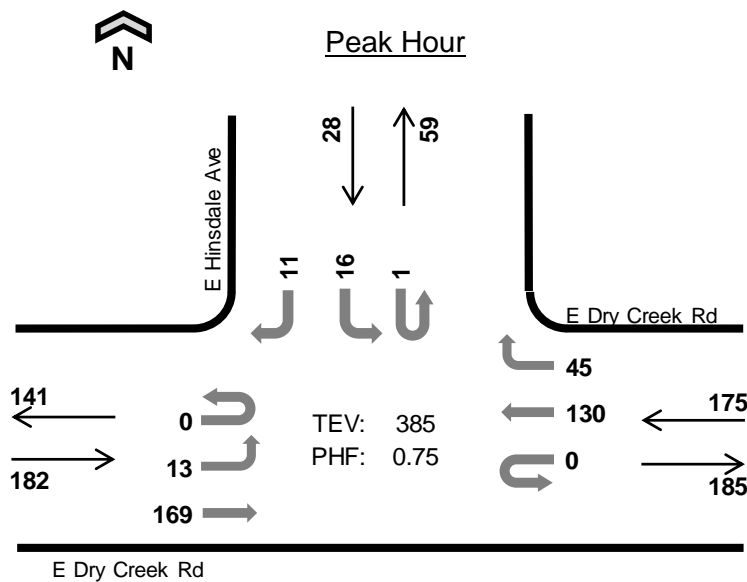
Interval Start	E Dry Creek Rd				E Dry Creek Rd				n/a				E Hinsdale Ave				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0
7:15 AM	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	2	0
7:30 AM	0	0	3	0	0	0	3	1	0	0	0	0	0	0	0	1	8	0
7:45 AM	0	0	1	0	0	0	0	1	0	0	0	0	0	1	0	0	3	14
8:00 AM	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	14
8:15 AM	0	0	0	0	0	0	2	0	0	0	0	0	0	1	0	0	3	15
8:30 AM	0	0	6	0	0	0	12	0	0	0	0	0	0	0	0	0	18	25
8:45 AM	0	0	11	0	0	0	2	0	0	0	0	0	0	0	0	0	13	35
Count Total	0	1	21	0	0	0	22	2	0	0	0	0	0	2	0	1	49	0
Peak Hour	0	0	17	0	0	0	17	0	0	0	0	0	0	1	0	0	35	0

**Count Summaries - Bikes**

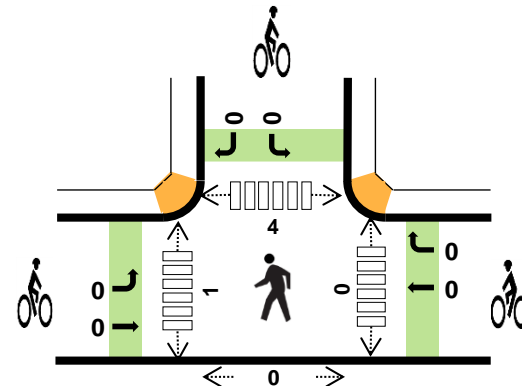
Interval Start	E Dry Creek Rd			E Dry Creek Rd			n/a			E Hinsdale Ave			15-min Total	Rolling One Hour
	Eastbound			Westbound			Northbound			Southbound				
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	1	0	0	0	0	0	0	0	0	0	0	1	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Count Total	0	1	0	0	0	0	0	0	0	0	0	0	1	0
Peak Hour	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Note: U-Turn volumes for bikes are included in Left-Turn, if any.

# E Hinsdale Ave E Dry Creek Rd



Date: 10/04/2023  
Count Period: 4:00 PM to 6:00 PM  
Peak Hour: 4:00 PM to 5:00 PM



	HV %	PHF
EB	6.0%	0.59
WB	6.3%	0.84
NB	-	-
SB	3.6%	0.58
TOTAL	6.0%	0.75

## Count Summaries

Interval Start		E Dry Creek Rd				E Dry Creek Rd				n/a				E Hinsdale Ave				15-min Total	Rolling One Hour
		Eastbound				Westbound				Northbound				Southbound					
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM		0	1	48	0	0	0	27	11	0	0	0	0	0	2	0	2	91	0
4:15 PM		0	1	32	0	0	0	27	15	0	0	0	0	0	1	0	2	78	0
4:30 PM		0	1	22	0	0	0	42	10	0	0	0	0	1	8	0	3	87	0
4:45 PM		0	10	67	0	0	0	34	9	0	0	0	0	0	5	0	4	129	385
5:00 PM		0	5	28	0	0	0	27	8	0	0	0	0	0	4	0	2	74	368
5:15 PM		0	0	26	0	0	0	28	11	0	0	0	0	0	7	0	0	72	362
5:30 PM		0	4	23	0	0	0	26	11	0	0	0	0	0	4	0	0	68	343
5:45 PM		0	1	10	0	0	0	26	6	0	0	0	0	0	2	0	3	48	262
Count Total		0	23	256	0	0	0	237	81	0	0	0	0	1	33	0	16	647	0
Peak Hour	All	0	13	169	0	0	0	130	45	0	0	0	0	1	16	0	11	385	0
	HV	0	0	11	0	0	0	11	0	0	0	0	0	0	1	0	0	23	0
	HV%	-	0%	7%	-	-	-	8%	0%	-	-	-	-	0%	6%	-	0%	6%	0

Note: Count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	2	1	0	0	3	0	0	0	0	0	0	1	2	0	3
4:15 PM	0	2	0	0	2	0	0	0	0	0	0	0	1	0	1
4:30 PM	0	7	0	1	8	0	0	0	0	0	0	0	0	0	0
4:45 PM	9	1	0	0	10	0	0	0	0	0	0	0	1	0	1
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	1	4	0	5
5:15 PM	0	1	0	0	1	0	0	0	0	0	0	2	0	0	2
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	1	2	0	3
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Count Total	11	12	0	1	24	0	0	0	0	0	0	5	10	0	15
Peak Hr	11	11	0	1	23	0	0	0	0	0	0	1	4	0	5

**Count Summaries - Heavy Vehicles**

Interval Start	E Dry Creek Rd				E Dry Creek Rd				n/a				E Hinsdale Ave				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	0	2	0	0	0	1	0	0	0	0	0	0	0	0	0	3	0
4:15 PM	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	2	0
4:30 PM	0	0	0	0	0	0	7	0	0	0	0	0	0	1	0	0	8	0
4:45 PM	0	0	9	0	0	0	1	0	0	0	0	0	0	0	0	0	10	23
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	20
5:15 PM	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	19
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	11
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Count Total	0	0	11	0	0	0	11	1	0	0	0	0	0	1	0	0	24	0
Peak Hour	0	0	11	0	0	0	11	0	0	0	0	0	0	1	0	0	23	0

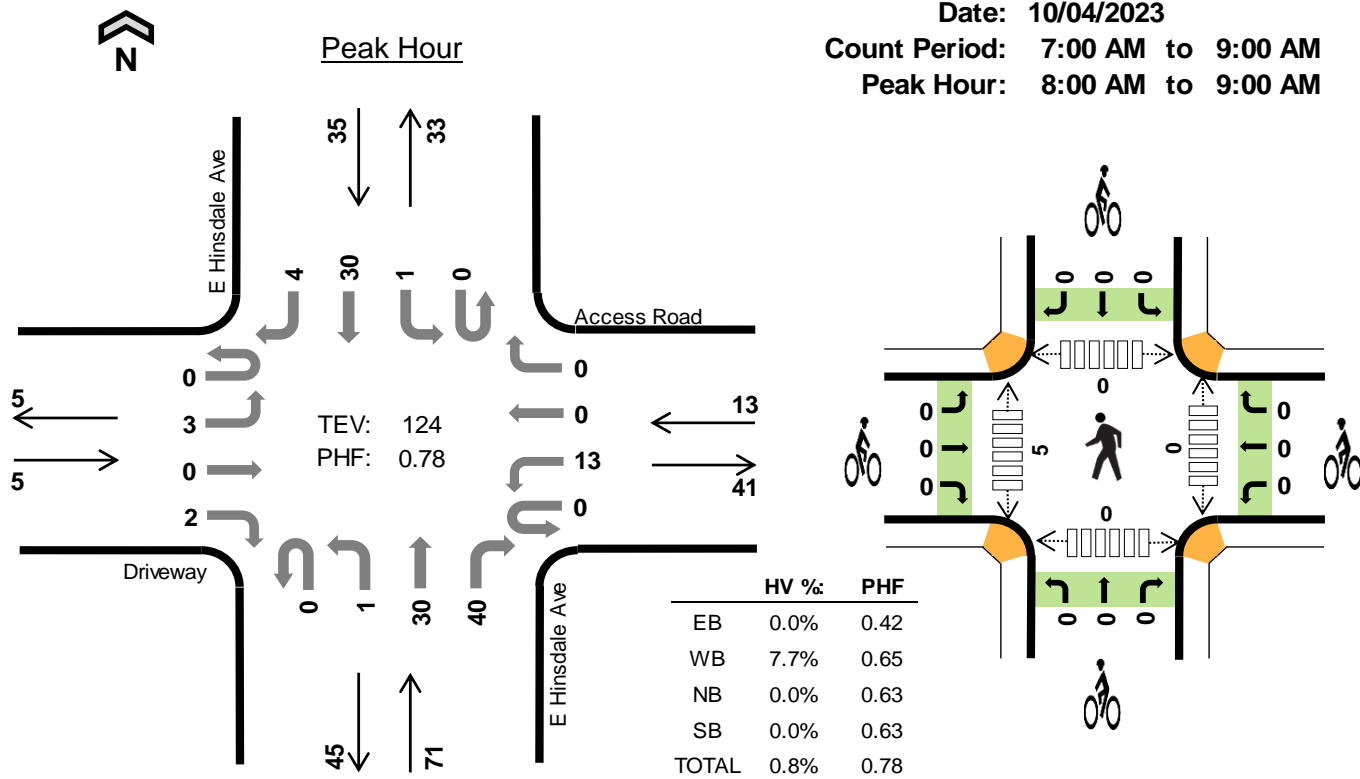
**Count Summaries - Bikes**

Interval Start	E Dry Creek Rd			E Dry Creek Rd			n/a			E Hinsdale Ave			15-min Total	Rolling One Hour
	Eastbound			Westbound			Northbound			Southbound				
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Count Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Peak Hour	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Note: U-Turn volumes for bikes are included in Left-Turn, if any.



## E Hinsdale Ave Access Road



### Count Summaries

Interval Start		Driveway				Access Road				E Hinsdale Ave				E Hinsdale Ave				15-min Total	Rolling One Hour
		Eastbound				Westbound				Northbound				Southbound					
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM		0	2	0	1	0	3	0	0	0	0	1	7	0	0	2	0	16	0
7:15 AM		0	0	0	1	0	1	0	2	0	1	0	9	0	0	0	0	14	0
7:30 AM		0	2	0	0	0	2	0	0	0	0	2	11	0	0	4	0	21	0
7:45 AM		0	2	0	0	0	3	0	0	0	0	1	9	0	0	1	1	17	68
8:00 AM		0	1	0	1	0	1	0	0	0	0	0	11	0	0	2	3	19	71
8:15 AM		0	0	0	0	0	5	0	0	0	1	3	8	0	1	8	1	27	84
8:30 AM		0	2	0	1	0	3	0	0	0	0	15	5	0	0	14	0	40	103
8:45 AM		0	0	0	0	0	4	0	0	0	0	12	16	0	0	6	0	38	124
Count Total		0	9	0	4	0	22	0	2	0	2	34	76	0	1	37	5	192	0
Peak Hour	All	0	3	0	2	0	13	0	0	0	1	30	40	0	1	30	4	124	0
	HV	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0
	HV%	-	0%	-	0%	-	8%	-	-	-	0%	0%	0%	-	0%	0%	0%	1%	0

Note: Count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
7:00 AM	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
7:30 AM	0	0	2	1	3	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	1	0	0	1	0	0	0	0	0	2	0	0	0	2
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2
8:15 AM	0	1	0	0	1	0	0	0	0	0	0	3	0	0	3
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Count Total	0	2	3	1	6	0	0	0	0	0	2	6	0	0	8
Peak Hour	0	1	0	0	1	0	0	0	0	0	0	5	0	0	5

**Count Summaries - Heavy Vehicles**

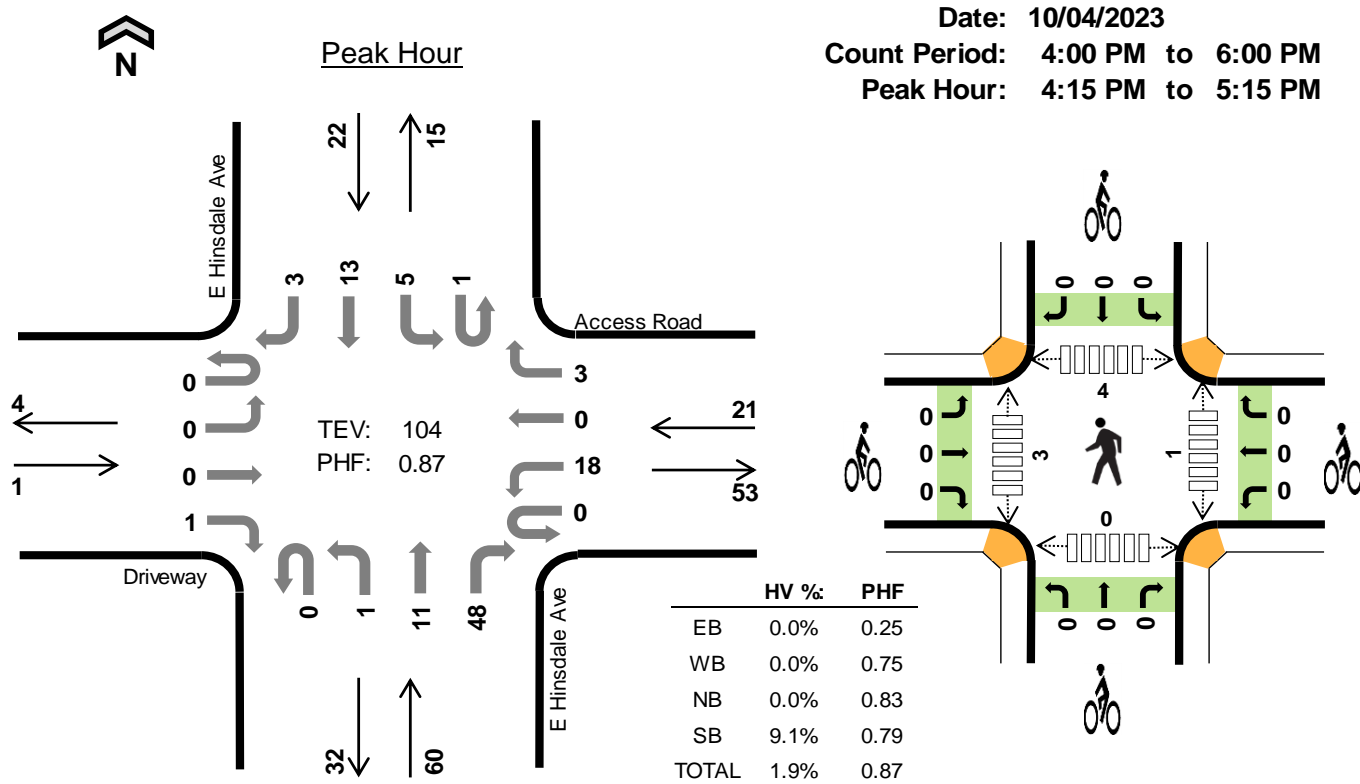
Interval Start	Driveway				Access Road				E Hinsdale Ave				E Hinsdale Ave				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	1	1	0	0	1	0	3	0
7:45 AM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	5
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
8:15 AM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	5
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Count Total	0	0	0	0	0	2	0	0	0	0	2	1	0	0	1	0	6	0
Peak Hour	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0

**Count Summaries - Bikes**

Interval Start	Driveway			Access Road			E Hinsdale Ave			E Hinsdale Ave			15-min Total	Rolling One Hour
	Eastbound			Westbound			Northbound			Southbound				
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Count Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Peak Hour	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Note: U-Turn volumes for bikes are included in Left-Turn, if any.

## E Hinsdale Ave Access Road



### Count Summaries

Interval Start		Driveway				Access Road				E Hinsdale Ave				E Hinsdale Ave				15-min Total	Rolling One Hour
		Eastbound				Westbound				Northbound				Southbound					
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM		0	0	0	0	0	2	0	0	0	0	3	9	0	0	2	1	17	0
4:15 PM		0	0	0	0	0	2	0	1	0	0	0	17	0	1	2	1	24	0
4:30 PM		0	0	0	0	0	7	0	0	0	0	2	9	0	0	6	1	25	0
4:45 PM		0	0	0	0	0	5	0	1	0	0	7	11	0	2	3	1	30	96
5:00 PM		0	0	0	1	0	4	0	1	0	1	2	11	1	2	2	0	25	104
5:15 PM		0	0	0	1	0	2	0	2	0	2	0	9	0	2	3	0	21	101
5:30 PM		0	1	0	3	0	1	0	0	1	1	2	11	0	1	0	1	22	98
5:45 PM		0	0	0	0	0	3	0	0	0	1	0	6	0	0	2	2	14	82
Count Total		0	1	0	5	0	26	0	5	1	5	16	83	1	8	20	7	178	0
Peak Hour	All	0	0	0	1	0	18	0	3	0	1	11	48	1	5	13	3	104	0
	HV	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	2	0
	HV%	-	-	-	0%	-	0%	-	0%	-	0%	0%	0%	0%	20%	8%	0%	2%	0

Note: Count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
4:15 PM	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	1	1	0	0	0	0	0	0	0	2	0	2
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2
5:00 PM	0	0	0	0	0	0	0	0	0	0	1	3	0	0	4
5:15 PM	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Count Total	0	0	1	2	3	0	0	0	0	0	2	4	4	0	10
Peak Hour	0	0	0	2	2	0	0	0	0	0	1	3	4	0	8

**Count Summaries - Heavy Vehicles**

Interval Start	Driveway				Access Road				E Hinsdale Ave				E Hinsdale Ave				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	2
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Count Total	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	0	0
Peak Hour	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0

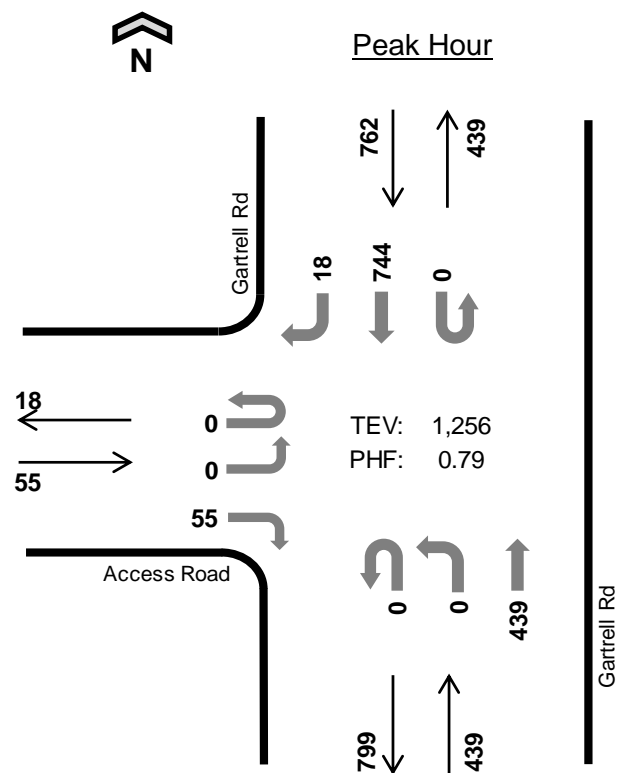
**Count Summaries - Bikes**

Interval Start	Driveway			Access Road			E Hinsdale Ave			E Hinsdale Ave			15-min Total	Rolling One Hour
	Eastbound			Westbound			Northbound			Southbound				
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Count Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Peak Hour	0	0	0	0	0	0	0	0	0	0	0	0	0	0

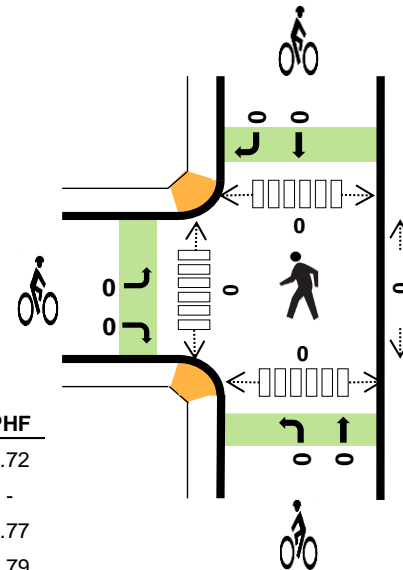
Note: U-Turn volumes for bikes are included in Left-Turn, if any.



## Gartrell Rd Access Road



Date: 10/04/2023  
Count Period: 7:00 AM to 9:00 AM  
Peak Hour: 7:45 AM to 8:45 AM



	HV %	PHF
EB	0.0%	0.72
WB	-	-
NB	1.8%	0.77
SB	3.0%	0.79
TOTAL	2.5%	0.79

### Count Summaries

Interval Start		Access Road				n/a				Gartrell Rd				Gartrell Rd				15-min Total	Rolling One Hour
		Eastbound				Westbound				Northbound				Southbound					
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM		0	0	0	14	0	0	0	0	0	0	67	0	0	0	109	8	198	0
7:15 AM		0	0	0	11	0	0	0	0	0	0	81	0	0	0	144	2	238	0
7:30 AM		0	0	0	16	0	0	0	0	0	0	112	0	0	0	161	7	296	0
7:45 AM		0	0	0	13	0	0	0	0	0	0	98	0	0	0	167	5	283	1,015
8:00 AM		0	0	0	19	0	0	0	0	0	0	92	0	0	0	156	3	270	1,087
8:15 AM		0	0	0	11	0	0	0	0	0	0	107	0	0	0	182	7	307	1,156
8:30 AM		0	0	0	12	0	0	0	0	0	0	142	0	0	0	239	3	396	1,256
8:45 AM		0	0	0	12	0	0	0	0	0	0	120	0	0	0	114	4	250	1,223
Count Total		0	0	0	108	0	0	0	0	0	0	819	0	0	0	1,272	39	2,238	0
Peak Hour	All	0	0	0	55	0	0	0	0	0	0	439	0	0	0	744	18	1,256	0
	HV	0	0	0	0	0	0	0	0	0	0	8	0	0	0	23	0	31	0
	HV%	-	-	-	0%	-	-	-	-	-	-	2%	-	-	-	3%	0%	2%	0

Note: Count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
7:00 AM	0	0	2	5	7	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	4	4	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	4	7	11	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	1	3	4	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	1	7	8	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	6	11	17	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	9	3	12	0	0	0	0	0	0	0	0	1	1
Count Total	0	0	23	42	65	0	0	0	0	0	0	0	0	1	1
Peak Hr	0	0	8	23	31	0	0	0	0	0	0	0	0	0	0

**Count Summaries - Heavy Vehicles**

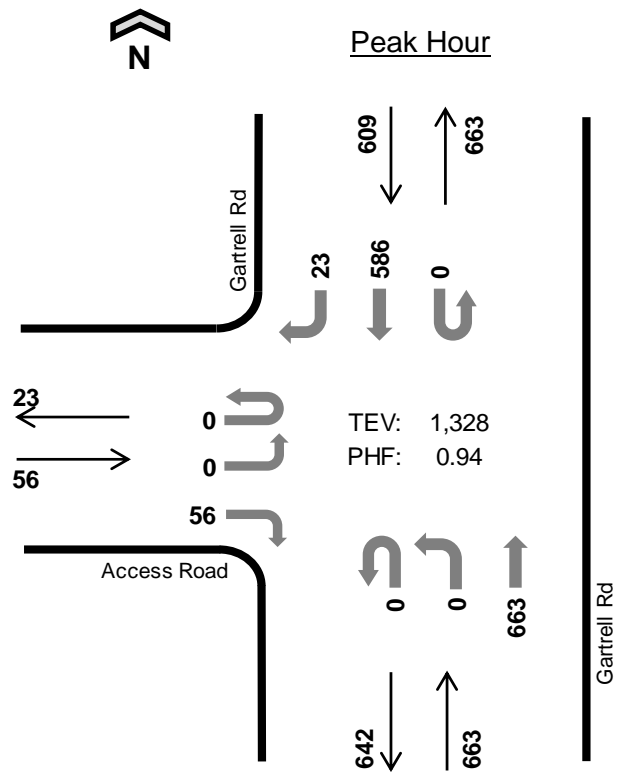
Interval Start	Access Road				n/a				Gartrell Rd				Gartrell Rd				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM	0	0	0	0	0	0	0	0	0	0	2	0	0	0	5	0	7	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	4	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	4	0	0	0	7	0	11	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	24
8:00 AM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	3	0	4	21
8:15 AM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	7	0	8	25
8:30 AM	0	0	0	0	0	0	0	0	0	0	6	0	0	0	11	0	17	31
8:45 AM	0	0	0	0	0	0	0	0	0	0	9	0	0	0	3	0	12	41
Count Total	0	0	0	0	0	0	0	0	0	0	23	0	0	0	42	0	65	0
Peak Hour	0	0	0	0	0	0	0	0	0	0	8	0	0	0	23	0	31	0

**Count Summaries - Bikes**

Interval Start	Access Road			n/a			Gartrell Rd			Gartrell Rd			15-min Total	Rolling One Hour
	Eastbound			Westbound			Northbound			Southbound				
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Count Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Peak Hour	0	0	0	0	0	0	0	0	0	0	0	0	0	0

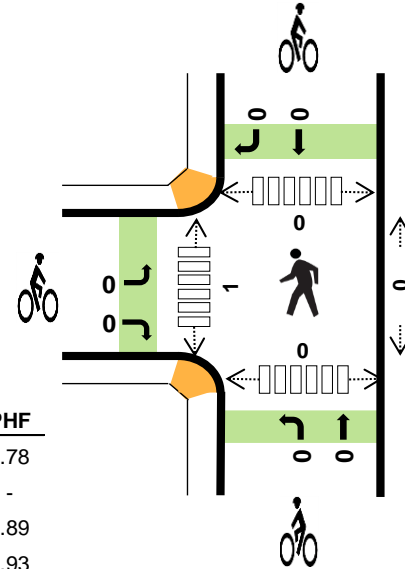
Note: U-Turn volumes for bikes are included in Left-Turn, if any.

## Gartrell Rd Access Road



Date: 10/04/2023  
Count Period: 4:00 PM to 6:00 PM  
Peak Hour: 4:00 PM to 5:00 PM

	HV %	PHF
EB	1.8%	0.78
WB	-	-
NB	1.7%	0.89
SB	2.3%	0.93
TOTAL	2.0%	0.94



### Count Summaries

Interval Start		Access Road				n/a				Gartrell Rd				Gartrell Rd				15-min Total	Rolling One Hour
		Eastbound				Westbound				Northbound				Southbound					
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM		0	0	0	18	0	0	0	0	0	0	159	0	0	0	157	7	341	0
4:15 PM		0	0	0	16	0	0	0	0	0	0	158	0	0	0	130	7	311	0
4:30 PM		0	0	0	6	0	0	0	0	0	0	160	0	0	0	149	6	321	0
4:45 PM		0	0	0	16	0	0	0	0	0	0	186	0	0	0	150	3	355	1,328
5:00 PM		0	0	0	10	0	0	0	0	0	0	156	0	0	0	132	2	300	1,287
5:15 PM		0	0	0	9	0	0	0	0	0	0	172	0	0	0	115	5	301	1,277
5:30 PM		0	0	0	16	0	0	0	0	0	0	145	0	0	0	116	5	282	1,238
5:45 PM		0	0	0	14	0	0	0	0	0	0	131	0	0	0	135	7	287	1,170
Count Total		0	0	0	105	0	0	0	0	0	0	1,267	0	0	0	1,084	42	2,498	0
Peak Hour	All	0	0	0	56	0	0	0	0	0	0	663	0	0	0	586	23	1,328	0
	HV	0	0	0	1	0	0	0	0	0	0	11	0	0	0	14	0	26	0
	HV%	-	-	-	2%	-	-	-	-	-	-	2%	-	-	-	2%	0%	2%	0

Note: Count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	0	0	1	5	6	0	0	0	0	0	0	0	0	0	0
4:15 PM	1	0	4	3	8	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	6	6	0	0	0	0	0	0	1	0	0	1
4:45 PM	0	0	6	0	6	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	1	0	0	1	2	0	0	0	0	0	0	2	1	0	3
Count Total	2	0	11	16	29	0	0	0	0	0	0	4	1	0	5
Peak Hr	1	0	11	14	26	0	0	0	0	0	0	1	0	0	1

**Count Summaries - Heavy Vehicles**

Interval Start	Access Road				n/a				Gartrell Rd				Gartrell Rd				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	5	0	6	0
4:15 PM	0	0	0	1	0	0	0	0	0	0	4	0	0	0	3	0	8	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	0	6	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	6	0	0	0	0	0	6	26
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	21
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	13
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7
5:45 PM	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	2	3
Count Total	0	0	0	2	0	0	0	0	0	0	11	0	0	0	16	0	29	0
Peak Hour	0	0	0	1	0	0	0	0	0	0	11	0	0	0	14	0	26	0

**Count Summaries - Bikes**

Interval Start	Access Road			n/a			Gartrell Rd			Gartrell Rd			15-min Total	Rolling One Hour
	Eastbound			Westbound			Northbound			Southbound				
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Count Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Peak Hour	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Note: U-Turn volumes for bikes are included in Left-Turn, if any.



# APPENDIX B

## Trip Generation Worksheets



Project Chick-fil-A Dry Creek & Gartrell - Proposed Use  
 Subject Trip Generation for Fast-Food Restaurant with Drive-Through Window  
 Designed by TES Date October 13, 2023 Job No. 096206016  
 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 = 2,931

X = 2.931

T = Average Vehicle Trip Ends

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

Directional Distribution: 51% ent. 49% exit.  
 (T) = 44.61 (X) T = 131 Average Vehicle Trip Ends  
 (T) = 44.61 \* (2.9) 67 entering 64 exiting  
 67 + 64 = 131

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

Directional Distribution: 52% ent. 48% exit.  
 (T) = 33.03 (X) T = 97 Average Vehicle Trip Ends  
 (T) = 33.03 \* (2.9) 50 entering 47 exiting  
 50 + 47 = 97

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

Directional Distribution: 50% ent. 50% exit.  
 (T) = 467.48 (X) T = 1372 Average Vehicle Trip Ends  
 (T) = 467.48 \* (2.9) 686 entering 686 exiting  
 686 + 686 = 1372

### **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	34	32	65		
PM Peak	23	21	44		
Daily	309	309	618	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	34	32	65		
PM Peak	28	26	53		
Daily	377	377	754	PM Peak Hour Rate Applied to Daily	

Project Chick-fil-A Dry Creek & Gartrell - Previous Use  
 Subject Trip Generation for Drive-In Bank  
 Designed by JRP Date October 25, 2023 Job No. 096206016  
 Checked by \_\_\_\_\_ Date \_\_\_\_\_ Sheet No. 1 of 1

## **TRIP GENERATION MANUAL TECHNIQUES**

ITE Trip Generation Manual 11th Edition, Average Rate Equations

Land Use Code - Drive-In Bank (912)

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

SF = 4,800  
 X = 4.800  
 T = Average Vehicle Trip Ends

### **Peak Hour of Adjacent Street Traffic, One Hour Between 7 and 9 a.m. (Page 599)**

Average Weekday	Directional Distribution:	58% ent.	42% exit.
T = 9.95 (X)	T = 48	Average Vehicle Trip Ends	
T = 9.95 * 4.800	28 entering	20 exiting	
	28 + 20 = 48		

### **Peak Hour of Adjacent Street Traffic, One Hour Between 4 and 6 p.m. (Page 600)**

Average Weekday	Directional Distribution:	50% ent.	50% exit.
T = 21.01 (X)	T = 101	Average Vehicle Trip Ends	
T = 21.01 * 4.800	50 entering	51 exiting	
	50 + 51 = 101		

### **Weekday (Page 598)**

Average Weekday	Directional Distribution:	50% entering,	50% exiting
T = 100.35 (X)	T = 482	Average Vehicle Trip Ends	
T = 100.35 * 4.800	241 entering	241 exiting	
	241 + 241 = 482		

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






PM Peak Hour = 65% Non-Pass By	AM Peak Hour = 71% Non-Pass By
IN Out Total	
AM Peak 20 14 34	
PM Peak 33 33 66	
Daily 157 157 314	PM Peak Hour Rate Applied to Daily





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

PM Peak Hour = 35% Pass By	AM Peak Hour = 29% Pass By
IN Out Total	
AM Peak 8 6 14	
PM Peak 18 18 24	
Daily 84 84 168	PM Peak Hour Rate Applied to Daily






# APPENDIX C






## Intersection Analysis Worksheets





Intersection						
Int Delay, s/veh	1.5					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	35	232	250	36	18	25
Future Vol, veh/h	35	232	250	36	18	25
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	50	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	2	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	55	55	55	55	55	55
Heavy Vehicles, %	6	6	6	6	2	2
Mvmt Flow	64	422	455	65	33	45
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	520	0	-	0	1038	488
Stage 1	-	-	-	-	488	-
Stage 2	-	-	-	-	550	-
Critical Hdwy	4.16	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.254	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1011	-	-	-	242	632
Stage 1	-	-	-	-	637	-
Stage 2	-	-	-	-	578	-
Platoon blocked, %	1	-	-	-	1	1
Mov Cap-1 Maneuver	1011	-	-	-	226	632
Mov Cap-2 Maneuver	-	-	-	-	443	-
Stage 1	-	-	-	-	597	-
Stage 2	-	-	-	-	578	-
Approach	EB	WB		SB		
HCM Control Delay, s	1.2	0		12.9		
HCM LOS	B					
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1011	-	-	-	536	
HCM Lane V/C Ratio	0.063	-	-	-	0.146	
HCM Control Delay (s)	8.8	-	-	-	12.9	
HCM Lane LOS	A	-	-	-	B	
HCM 95th %tile Q(veh)	0.2	-	-	-	0.5	






Intersection						
Int Delay, s/veh	1					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	13	169	130	45	17	11
Future Vol, veh/h	13	169	130	45	17	11
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	50	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	2	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	75	75	75	75	75	75
Heavy Vehicles, %	6	6	6	6	4	4
Mvmt Flow	17	225	173	60	23	15
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	233	0	-	0	462	203
Stage 1	-	-	-	-	203	-
Stage 2	-	-	-	-	259	-
Critical Hdwy	4.16	-	-	-	6.44	6.24
Critical Hdwy Stg 1	-	-	-	-	5.44	-
Critical Hdwy Stg 2	-	-	-	-	5.44	-
Follow-up Hdwy	2.254	-	-	-	3.536	3.336
Pot Cap-1 Maneuver	1324	-	-	-	575	884
Stage 1	-	-	-	-	854	-
Stage 2	-	-	-	-	780	-
Platoon blocked, %	1	-	-	-	1	1
Mov Cap-1 Maneuver	1324	-	-	-	567	884
Mov Cap-2 Maneuver	-	-	-	-	689	-
Stage 1	-	-	-	-	843	-
Stage 2	-	-	-	-	780	-
Approach	EB	WB		SB		
HCM Control Delay, s	0.6	0		10		
HCM LOS	B					
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1324	-	-	-	754	
HCM Lane V/C Ratio	0.013	-	-	-	0.05	
HCM Control Delay (s)	7.8	-	-	-	10	
HCM Lane LOS	A	-	-	-	B	
HCM 95th %tile Q(veh)	0	-	-	-	0.2	








Intersection						
Int Delay, s/veh	1.5					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	36	241	260	37	19	26
Future Vol, veh/h	36	241	260	37	19	26
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	50	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	2	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	55	55	55	55	55	55
Heavy Vehicles, %	6	6	6	6	2	2
Mvmt Flow	65	438	473	67	35	47
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	540	0	-	0	1075	507
Stage 1	-	-	-	-	507	-
Stage 2	-	-	-	-	568	-
Critical Hdwy	4.16	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.254	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	991	-	-	-	225	624
Stage 1	-	-	-	-	628	-
Stage 2	-	-	-	-	567	-
Platoon blocked, %	1	-	-	-	1	1
Mov Cap-1 Maneuver	991	-	-	-	210	624
Mov Cap-2 Maneuver	-	-	-	-	431	-
Stage 1	-	-	-	-	586	-
Stage 2	-	-	-	-	567	-
Approach	EB	WB		SB		
HCM Control Delay, s	1.2	0		13.1		
HCM LOS	B					
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	991	-	-	-	525	
HCM Lane V/C Ratio	0.066	-	-	-	0.156	
HCM Control Delay (s)	8.9	-	-	-	13.1	
HCM Lane LOS	A	-	-	-	B	
HCM 95th %tile Q(veh)	0.2	-	-	-	0.5	





Intersection						
Int Delay, s/veh	1					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	14	176	135	47	18	11
Future Vol, veh/h	14	176	135	47	18	11
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	50	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	2	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	75	75	75	75	75	75
Heavy Vehicles, %	6	6	6	6	4	4
Mvmt Flow	19	235	180	63	24	15
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	243	0	-	0	485	212
Stage 1	-	-	-	-	212	-
Stage 2	-	-	-	-	273	-
Critical Hdwy	4.16	-	-	-	6.44	6.24
Critical Hdwy Stg 1	-	-	-	-	5.44	-
Critical Hdwy Stg 2	-	-	-	-	5.44	-
Follow-up Hdwy	2.254	-	-	-	3.536	3.336
Pot Cap-1 Maneuver	1318	-	-	-	563	892
Stage 1	-	-	-	-	856	-
Stage 2	-	-	-	-	768	-
Platoon blocked, %	1	-	-	-	1	1
Mov Cap-1 Maneuver	1318	-	-	-	555	892
Mov Cap-2 Maneuver	-	-	-	-	681	-
Stage 1	-	-	-	-	844	-
Stage 2	-	-	-	-	768	-
Approach	EB	WB		SB		
HCM Control Delay, s	0.6	0		10.1		
HCM LOS	B					
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1318	-	-	-	748	
HCM Lane V/C Ratio	0.014	-	-	-	0.052	
HCM Control Delay (s)	7.8	-	-	-	10.1	
HCM Lane LOS	A	-	-	-	B	
HCM 95th %tile Q(veh)	0	-	-	-	0.2	

Intersection						
Int Delay, s/veh	2.3					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	39	241	260	66	46	29
Future Vol, veh/h	39	241	260	66	46	29
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	50	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	2	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	55	55	55	55	55	55
Heavy Vehicles, %	6	6	6	6	2	2
Mvmt Flow	71	438	473	120	84	53
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	593	0	-	0	1113	533
Stage 1	-	-	-	-	533	-
Stage 2	-	-	-	-	580	-
Critical Hdwy	4.16	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.254	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	937	-	-	-	211	598
Stage 1	-	-	-	-	607	-
Stage 2	-	-	-	-	560	-
Platoon blocked, %	1	-	-	-	1	1
Mov Cap-1 Maneuver	937	-	-	-	195	598
Mov Cap-2 Maneuver	-	-	-	-	416	-
Stage 1	-	-	-	-	561	-
Stage 2	-	-	-	-	560	-
Approach	EB	WB		SB		
HCM Control Delay, s	1.3	0		15.7		
HCM LOS	C					
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	937	-	-	-	471	
HCM Lane V/C Ratio	0.076	-	-	-	0.29	
HCM Control Delay (s)	9.2	-	-	-	15.7	
HCM Lane LOS	A	-	-	-	C	
HCM 95th %tile Q(veh)	0.2	-	-	-	1.2	

Intersection						
Int Delay, s/veh	1.6					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	16	176	135	73	42	13
Future Vol, veh/h	16	176	135	73	42	13
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	50	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	2	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	75	75	75	75	75	75
Heavy Vehicles, %	6	6	6	6	4	4
Mvmt Flow	21	235	180	97	56	17
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	277	0	-	0	506	229
Stage 1	-	-	-	-	229	-
Stage 2	-	-	-	-	277	-
Critical Hdwy	4.16	-	-	-	6.44	6.24
Critical Hdwy Stg 1	-	-	-	-	5.44	-
Critical Hdwy Stg 2	-	-	-	-	5.44	-
Follow-up Hdwy	2.254	-	-	-	3.536	3.336
Pot Cap-1 Maneuver	1276	-	-	-	546	871
Stage 1	-	-	-	-	839	-
Stage 2	-	-	-	-	765	-
Platoon blocked, %	1	-	-	-	1	1
Mov Cap-1 Maneuver	1276	-	-	-	537	871
Mov Cap-2 Maneuver	-	-	-	-	670	-
Stage 1	-	-	-	-	825	-
Stage 2	-	-	-	-	765	-
Approach	EB	WB		SB		
HCM Control Delay, s	0.7	0		10.7		
HCM LOS	B					
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1276	-	-	-	709	
HCM Lane V/C Ratio	0.017	-	-	-	0.103	
HCM Control Delay (s)	7.9	-	-	-	10.7	
HCM Lane LOS	A	-	-	-	B	
HCM 95th %tile Q(veh)	0.1	-	-	-	0.3	






Intersection						
Int Delay, s/veh	1.6					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	49	325	350	50	25	35
Future Vol, veh/h	49	325	350	50	25	35
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	50	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	2	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	65	65	65	65	65	65
Heavy Vehicles, %	6	6	6	6	2	2
Mvmt Flow	75	500	538	77	38	54
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	615	0	-	0	1227	577
Stage 1	-	-	-	-	577	-
Stage 2	-	-	-	-	650	-
Critical Hdwy	4.16	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.254	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	913	-	-	-	165	587
Stage 1	-	-	-	-	587	-
Stage 2	-	-	-	-	520	-
Platoon blocked, %	1	-	-	-	1	1
Mov Cap-1 Maneuver	913	-	-	-	152	587
Mov Cap-2 Maneuver	-	-	-	-	383	-
Stage 1	-	-	-	-	539	-
Stage 2	-	-	-	-	520	-
Approach	EB	WB		SB		
HCM Control Delay, s	1.2	0		14.3		
HCM LOS	B					
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	913	-	-	-	480	
HCM Lane V/C Ratio	0.083	-	-	-	0.192	
HCM Control Delay (s)	9.3	-	-	-	14.3	
HCM Lane LOS	A	-	-	-	B	
HCM 95th %tile Q(veh)	0.3	-	-	-	0.7	







Intersection						
Int Delay, s/veh	1					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	18	237	182	63	24	15
Future Vol, veh/h	18	237	182	63	24	15
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	50	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	2	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	6	6	6	6	4	4
Mvmt Flow	20	258	198	68	26	16
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	266	0	-	0	530	232
Stage 1	-	-	-	-	232	-
Stage 2	-	-	-	-	298	-
Critical Hdwy	4.16	-	-	-	6.44	6.24
Critical Hdwy Stg 1	-	-	-	-	5.44	-
Critical Hdwy Stg 2	-	-	-	-	5.44	-
Follow-up Hdwy	2.254	-	-	-	3.536	3.336
Pot Cap-1 Maneuver	1296	-	-	-	533	887
Stage 1	-	-	-	-	847	-
Stage 2	-	-	-	-	749	-
Platoon blocked, %	1	-	-	-	1	1
Mov Cap-1 Maneuver	1296	-	-	-	525	887
Mov Cap-2 Maneuver	-	-	-	-	661	-
Stage 1	-	-	-	-	834	-
Stage 2	-	-	-	-	749	-
Approach	EB	WB		SB		
HCM Control Delay, s	0.6	0		10.2		
HCM LOS	B					
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1296	-	-	-	733	
HCM Lane V/C Ratio	0.015	-	-	-	0.058	
HCM Control Delay (s)	7.8	-	-	-	10.2	
HCM Lane LOS	A	-	-	-	B	
HCM 95th %tile Q(veh)	0	-	-	-	0.2	

HCM 6th TWSC  
1: Dry Creek Rd & Hinsdale Ave

2040 Total AM  
10/16/2023

Intersection						
Int Delay, s/veh	2.3					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	52	325	350	79	52	38
Future Vol, veh/h	52	325	350	79	52	38
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	50	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	2	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	65	65	65	65	65	65
Heavy Vehicles, %	6	6	6	6	2	2
Mvmt Flow	80	500	538	122	80	58
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	660	0	-	0	1259	599
Stage 1	-	-	-	-	599	-
Stage 2	-	-	-	-	660	-
Critical Hdwy	4.16	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.254	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	867	-	-	-	155	565
Stage 1	-	-	-	-	569	-
Stage 2	-	-	-	-	514	-
Platoon blocked, %	1	-	-	-	1	1
Mov Cap-1 Maneuver	867	-	-	-	141	565
Mov Cap-2 Maneuver	-	-	-	-	371	-
Stage 1	-	-	-	-	517	-
Stage 2	-	-	-	-	514	-
Approach	EB	WB		SB		
HCM Control Delay, s	1.3	0		17.1		
HCM LOS	C					
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	867	-	-	-	434	
HCM Lane V/C Ratio	0.092	-	-	-	0.319	
HCM Control Delay (s)	9.6	-	-	-	17.1	
HCM Lane LOS	A	-	-	-	C	
HCM 95th %tile Q(veh)	0.3	-	-	-	1.4	

Intersection						
Int Delay, s/veh	1.4					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	20	237	182	89	48	17
Future Vol, veh/h	20	237	182	89	48	17
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	50	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	2	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	6	6	6	6	4	4
Mvmt Flow	22	258	198	97	52	18

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	295	0	0 549 247
Stage 1	-	-	- 247 -
Stage 2	-	-	- 302 -
Critical Hdwy	4.16	-	- 6.44 6.24
Critical Hdwy Stg 1	-	-	- 5.44 -
Critical Hdwy Stg 2	-	-	- 5.44 -
Follow-up Hdwy	2.254	-	- 3.536 3.336
Pot Cap-1 Maneuver	1260	-	- 518 868
Stage 1	-	-	- 832 -
Stage 2	-	-	- 745 -
Platoon blocked, %	1	-	- 1 1
Mov Cap-1 Maneuver	1260	-	- 510 868
Mov Cap-2 Maneuver	-	-	- 652 -
Stage 1	-	-	- 818 -
Stage 2	-	-	- 745 -

Approach	EB	WB	SB
HCM Control Delay, s	0.6	0	10.7
HCM LOS			B























Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1260	-	-	-	697
HCM Lane V/C Ratio	0.017	-	-	-	0.101
HCM Control Delay (s)	7.9	-	-	-	10.7
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0.1	-	-	-	0.3

# Timings

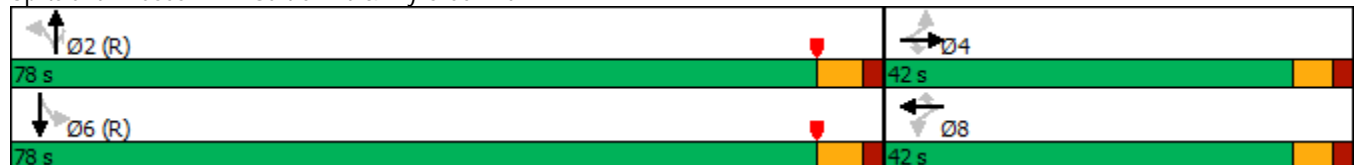
## 2: Gartrell Rd & Dry Creek Rd

2023 Existing AM

10/16/2023

											
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations											
Traffic Volume (vph)	116	20	64	101	19	53	80	263	101	64	528
Future Volume (vph)	116	20	64	101	19	53	80	263	101	64	528
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	Perm	NA
Protected Phases		4			8			2			6
Permitted Phases	4		4	8		8	2		2	6	
Detector Phase	4	4	4	8	8	8	2	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	5.0	5.0
Minimum Split (s)	23.5	23.5	23.5	23.5	23.5	23.5	24.0	24.0	24.0	24.0	24.0
Total Split (s)	42.0	42.0	42.0	42.0	42.0	42.0	78.0	78.0	78.0	78.0	78.0
Total Split (%)	35.0%	35.0%	35.0%	35.0%	35.0%	35.0%	65.0%	65.0%	65.0%	65.0%	65.0%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5	5.5	6.0	6.0	6.0	6.0	6.0
Lead/Lag											
Lead-Lag Optimize?											
Recall Mode	None	None	None	None	None	None	C-Max	C-Max	C-Max	C-Max	C-Max
Act Effct Green (s)	18.1	18.1	18.1	18.1	18.1	18.1	90.4	90.4	90.4	90.4	90.4
Actuated g/C Ratio	0.15	0.15	0.15	0.15	0.15	0.15	0.75	0.75	0.75	0.75	0.75
v/c Ratio	0.70	0.09	0.26	0.60	0.08	0.22	0.24	0.12	0.10	0.10	0.35
Control Delay	65.7	41.6	10.9	58.8	41.4	11.5	7.1	4.7	1.2	5.2	5.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	65.7	41.6	10.9	58.8	41.4	11.5	7.1	4.7	1.2	5.2	5.3
LOS	E	D	B	E	D	B	A	A	A	A	A
Approach Delay		45.8			42.5			4.3			5.3
Approach LOS		D			D			A			A
Intersection Summary											
Cycle Length: 120											
Actuated Cycle Length: 120											
Offset: 53.5 (45%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow											
Natural Cycle: 55											
Control Type: Actuated-Coordinated											
Maximum v/c Ratio: 0.70											
Intersection Signal Delay: 14.1						Intersection LOS: B					
Intersection Capacity Utilization 52.9%						ICU Level of Service A					
Analysis Period (min) 15											

Splits and Phases: 2: Gartrell Rd & Dry Creek Rd



























# HCM 6th Signalized Intersection Summary

## 2: Gartrell Rd & Dry Creek Rd

2023 Existing AM

10/16/2023

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	116	20	64	101	19	53	80	263	101	64	528	194
Future Volume (veh/h)	116	20	64	101	19	53	80	263	101	64	528	194
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	1841	1841	1841	1870	1870	1870	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	143	25	79	125	23	65	99	325	125	79	652	240
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Percent Heavy Veh, %	4	4	4	2	2	2	3	3	3	3	3	3
Cap, veh/h	230	262	222	228	266	226	480	2686	1198	748	1922	707
Arrive On Green	0.14	0.14	0.14	0.14	0.14	0.14	0.76	0.76	0.76	0.76	0.76	0.76
Sat Flow, veh/h	1288	1841	1560	1290	1870	1585	619	3526	1572	933	2523	928
Grp Volume(v), veh/h	143	25	79	125	23	65	99	325	125	79	455	437
Grp Sat Flow(s),veh/h/ln	1288	1841	1560	1290	1870	1585	619	1763	1572	933	1763	1688
Q Serve(g_s), s	13.0	1.4	5.5	11.2	1.3	4.4	7.3	2.9	2.5	2.9	10.0	10.0
Cycle Q Clear(g_c), s	14.3	1.4	5.5	12.6	1.3	4.4	17.3	2.9	2.5	5.8	10.0	10.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.55
Lane Grp Cap(c), veh/h	230	262	222	228	266	226	480	2686	1198	748	1343	1286
V/C Ratio(X)	0.62	0.10	0.36	0.55	0.09	0.29	0.21	0.12	0.10	0.11	0.34	0.34
Avail Cap(c_a), veh/h	438	560	474	437	569	482	480	2686	1198	748	1343	1286
HCM Platoon 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	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	50.9	44.7	46.5	50.2	44.7	46.0	7.4	3.7	3.7	4.5	4.6	4.6
Incr Delay (d2), s/veh	2.8	0.2	1.0	2.0	0.1	0.7	1.0	0.1	0.2	0.3	0.7	0.7
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	4.4	0.7	2.2	3.7	0.6	1.8	1.1	0.9	0.7	0.6	3.4	3.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	53.6	44.9	47.5	52.3	44.8	46.7	8.3	3.8	3.9	4.8	5.3	5.3
LnGrp LOS	D	D	D	D	D	D	A	A	A	A	A	A
Approach Vol, veh/h	247			213			549			971		
Approach Delay, s/veh	50.8			49.8			4.7			5.3		
Approach LOS	D			D			A			A		
Timer - Assigned Phs	2			4			6			8		
Phs Duration (G+Y+Rc), s	97.4			22.6			97.4			22.6		
Change Period (Y+Rc), s	6.0			5.5			6.0			5.5		
Max Green Setting (Gmax), s	72.0			36.5			72.0			36.5		
Max Q Clear Time (g_c+I1), s	19.3			16.3			12.0			14.6		
Green Ext Time (p_c), s	4.0			0.8			8.0			0.7		
Intersection Summary												
HCM 6th Ctrl Delay	15.6											
HCM 6th LOS	B											

























# Timings

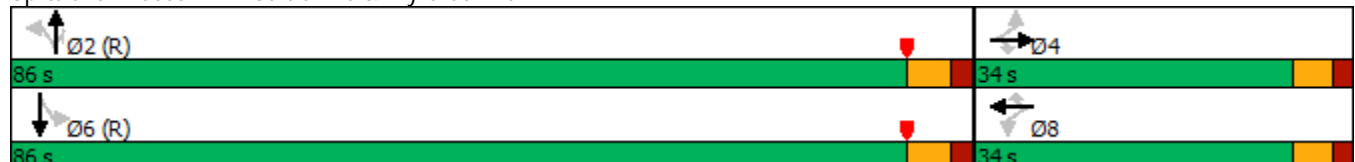
## 2: Gartrell Rd & Dry Creek Rd

2023 Existing PM

10/16/2023

											
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations											
Traffic Volume (vph)	94	16	71	151	12	78	98	497	145	70	496
Future Volume (vph)	94	16	71	151	12	78	98	497	145	70	496
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	Perm	NA
Protected Phases		4			8			2			6
Permitted Phases	4		4	8		8	2		2	6	
Detector Phase	4	4	4	8	8	8	2	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	5.0	5.0
Minimum Split (s)	23.5	23.5	23.5	23.5	23.5	23.5	24.0	24.0	24.0	24.0	24.0
Total Split (s)	34.0	34.0	34.0	34.0	34.0	34.0	86.0	86.0	86.0	86.0	86.0
Total Split (%)	28.3%	28.3%	28.3%	28.3%	28.3%	28.3%	71.7%	71.7%	71.7%	71.7%	71.7%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5	5.5	6.0	6.0	6.0	6.0	6.0
Lead/Lag											
Lead-Lag Optimize?											
Recall Mode	None	None	None	None	None	None	C-Max	C-Max	C-Max	C-Max	C-Max
Act Effct Green (s)	18.8	18.8	18.8	18.8	18.8	18.8	89.7	89.7	89.7	89.7	89.7
Actuated g/C Ratio	0.16	0.16	0.16	0.16	0.16	0.16	0.75	0.75	0.75	0.75	0.75
v/c Ratio	0.47	0.06	0.25	0.72	0.04	0.26	0.17	0.20	0.12	0.11	0.23
Control Delay	52.1	40.3	10.9	65.9	39.9	10.5	6.1	5.2	1.1	5.7	5.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	52.1	40.3	10.9	65.9	39.9	10.5	6.1	5.2	1.1	5.7	5.1
LOS	D	D	B	E	D	B	A	A	A	A	A
Approach Delay		34.9			46.7			4.5			5.2
Approach LOS		C			D			A			A
Intersection Summary											
Cycle Length: 120											
Actuated Cycle Length: 120											
Offset: 53.5 (45%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow											
Natural Cycle: 50											
Control Type: Actuated-Coordinated											
Maximum v/c Ratio: 0.72											
Intersection Signal Delay: 13.4				Intersection LOS: B							
Intersection Capacity Utilization 51.2%				ICU Level of Service A							
Analysis Period (min) 15											

Splits and Phases: 2: Gartrell Rd & Dry Creek Rd



























# HCM 6th Signalized Intersection Summary

## 2: Gartrell Rd & Dry Creek Rd

2023 Existing PM

10/16/2023























												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	94	16	71	151	12	78	98	497	145	70	496	76
Future Volume (veh/h)	94	16	71	151	12	78	98	497	145	70	496	76
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	1796	1796	1796	1870	1870	1870	1870	1870	1870	1856	1856	1856
Adj Flow Rate, veh/h	98	17	74	157	12	81	102	518	151	73	517	79
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	7	7	7	2	2	2	2	2	2	3	3	3
Cap, veh/h	238	265	225	242	276	234	641	2689	1199	605	2321	353
Arrive On Green	0.15	0.15	0.15	0.15	0.15	0.15	0.76	0.76	0.76	0.76	0.76	0.76
Sat Flow, veh/h	1252	1796	1522	1306	1870	1585	822	3554	1585	762	3067	467
Grp Volume(v), veh/h	98	17	74	157	12	81	102	518	151	73	296	300
Grp Sat Flow(s),veh/h/ln	1252	1796	1522	1306	1870	1585	822	1777	1585	762	1763	1772
Q Serve(g_s), s	8.7	1.0	5.2	14.1	0.7	5.5	5.0	5.0	3.1	3.6	5.9	5.9
Cycle Q Clear(g_c), s	9.4	1.0	5.2	15.1	0.7	5.5	10.9	5.0	3.1	8.6	5.9	5.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.26
Lane Grp Cap(c), veh/h	238	265	225	242	276	234	641	2689	1199	605	1334	1340
V/C Ratio(X)	0.41	0.06	0.33	0.65	0.04	0.35	0.16	0.19	0.13	0.12	0.22	0.22
Avail Cap(c_a), veh/h	350	427	362	359	444	376	641	2689	1199	605	1334	1340
HCM Platoon 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	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	47.9	44.0	45.8	50.5	43.9	46.0	5.9	4.2	3.9	5.4	4.3	4.3
Incr Delay (d2), s/veh	1.1	0.1	0.8	2.9	0.1	0.9	0.5	0.2	0.2	0.4	0.4	0.4
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	2.8	0.4	2.0	4.8	0.3	2.2	0.9	1.6	0.9	0.6	2.0	2.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	49.1	44.1	46.7	53.4	44.0	46.8	6.4	4.3	4.1	5.8	4.7	4.7
LnGrp LOS	D	D	D	D	D	D	A	A	A	A	A	A
Approach Vol, veh/h	189			250			771			669		
Approach Delay, s/veh	47.7			50.8			4.6			4.8		
Approach LOS	D			D			A			A		
Timer - Assigned Phs	2			4			6			8		
Phs Duration (G+Y+Rc), s	96.8			23.2			96.8			23.2		
Change Period (Y+Rc), s	6.0			5.5			6.0			5.5		
Max Green Setting (Gmax), s	80.0			28.5			80.0			28.5		
Max Q Clear Time (g_c+I1), s	12.9			11.4			10.6			17.1		
Green Ext Time (p_c), s	5.5			0.6			4.9			0.6		
Intersection Summary												
HCM 6th Ctrl Delay	15.1											
HCM 6th LOS	B											

# Timings

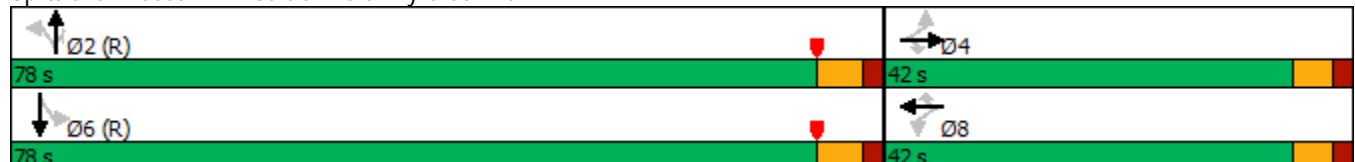
## 2: Gartrell Rd & Dry Creek Rd

2025 Background AM

10/16/2023

											
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations											
Traffic Volume (vph)	121	20	67	101	19	53	83	274	101	64	549
Future Volume (vph)	121	20	67	101	19	53	83	274	101	64	549
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	Perm	NA
Protected Phases		4			8			2			6
Permitted Phases	4		4	8		8	2		2	6	
Detector Phase	4	4	4	8	8	8	2	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	5.0	5.0
Minimum Split (s)	23.5	23.5	23.5	23.5	23.5	23.5	24.0	24.0	24.0	24.0	24.0
Total Split (s)	42.0	42.0	42.0	42.0	42.0	42.0	78.0	78.0	78.0	78.0	78.0
Total Split (%)	35.0%	35.0%	35.0%	35.0%	35.0%	35.0%	65.0%	65.0%	65.0%	65.0%	65.0%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5	5.5	6.0	6.0	6.0	6.0	6.0
Lead/Lag											
Lead-Lag Optimize?											
Recall Mode	None	None	None	None	None	None	C-Max	C-Max	C-Max	C-Max	C-Max
Act Effct Green (s)	18.6	18.6	18.6	18.6	18.6	18.6	89.9	89.9	89.9	89.9	89.9
Actuated g/C Ratio	0.16	0.16	0.16	0.16	0.16	0.16	0.75	0.75	0.75	0.75	0.75
v/c Ratio	0.71	0.09	0.27	0.59	0.08	0.22	0.26	0.13	0.10	0.10	0.36
Control Delay	65.4	41.1	10.6	57.1	40.8	11.2	7.6	4.8	1.2	5.4	5.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	65.4	41.1	10.6	57.1	40.8	11.2	7.6	4.8	1.2	5.4	5.6
LOS	E	D	B	E	D	B	A	A	A	A	A
Approach Delay		45.4			41.4			4.5			5.6
Approach LOS		D			D			A			A
Intersection Summary											
Cycle Length: 120											
Actuated Cycle Length: 120											
Offset: 53.5 (45%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow											
Natural Cycle: 55											
Control Type: Actuated-Coordinated											
Maximum v/c Ratio: 0.71											
Intersection Signal Delay: 14.1											
Intersection LOS: B											
Intersection Capacity Utilization 54.2%											
ICU Level of Service A											
Analysis Period (min) 15											

Splits and Phases: 2: Gartrell Rd & Dry Creek Rd



























# HCM 6th Signalized Intersection Summary

## 2: Gartrell Rd & Dry Creek Rd

2025 Background AM

10/16/2023























												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	121	20	67	101	19	53	83	274	101	64	549	202
Future Volume (veh/h)	121	20	67	101	19	53	83	274	101	64	549	202
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	1841	1841	1841	1870	1870	1870	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	149	25	83	125	23	65	102	338	125	79	678	249
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Percent Heavy Veh, %	4	4	4	2	2	2	3	3	3	3	3	3
Cap, veh/h	236	271	229	234	275	233	460	2669	1191	734	1911	702
Arrive On Green	0.15	0.15	0.15	0.15	0.15	0.15	0.76	0.76	0.76	0.76	0.76	0.76
Sat Flow, veh/h	1288	1841	1560	1286	1870	1585	599	3526	1572	922	2524	927
Grp Volume(v), veh/h	149	25	83	125	23	65	102	338	125	79	473	454
Grp Sat Flow(s),veh/h/ln	1288	1841	1560	1286	1870	1585	599	1763	1572	922	1763	1689
Q Serve(g_s), s	13.6	1.4	5.8	11.2	1.3	4.4	8.2	3.1	2.5	3.0	10.7	10.7
Cycle Q Clear(g_c), s	14.8	1.4	5.8	12.6	1.3	4.4	18.9	3.1	2.5	6.1	10.7	10.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.55
Lane Grp Cap(c), veh/h	236	271	229	234	275	233	460	2669	1191	734	1335	1279
V/C Ratio(X)	0.63	0.09	0.36	0.53	0.08	0.28	0.22	0.13	0.10	0.11	0.35	0.35
Avail Cap(c_a), veh/h	438	560	474	436	569	482	460	2669	1191	734	1335	1279
HCM Platoon 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	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	50.6	44.3	46.1	49.7	44.2	45.5	8.0	3.9	3.8	4.7	4.8	4.8
Incr Delay (d2), s/veh	2.8	0.1	1.0	1.9	0.1	0.6	1.1	0.1	0.2	0.3	0.7	0.8
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	4.5	0.7	2.3	3.7	0.6	1.8	1.1	1.0	0.8	0.6	3.7	3.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	53.4	44.4	47.1	51.6	44.3	46.2	9.1	4.0	4.0	5.0	5.6	5.6
LnGrp LOS	D	D	D	D	D	D	A	A	A	A	A	A
Approach Vol, veh/h	257				213				565			
Approach Delay, s/veh	50.5				49.1				4.9			
Approach LOS	D				D				A			
Timer - Assigned Phs	2			4			6			8		
Phs Duration (G+Y+Rc), s	96.9			23.1			96.9			23.1		
Change Period (Y+Rc), s	6.0			5.5			6.0			5.5		
Max Green Setting (Gmax), s	72.0			36.5			72.0			36.5		
Max Q Clear Time (g_c+I1), s	20.9			16.8			12.7			14.6		
Green Ext Time (p_c), s	4.2			0.8			8.5			0.7		
Intersection Summary												
HCM 6th Ctrl Delay	15.6											
HCM 6th LOS	B											

# Timings

## 2: Gartrell Rd & Dry Creek Rd

2025 Background PM

10/16/2023

											
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations											
Traffic Volume (vph)	98	16	74	151	12	78	102	517	145	70	516
Future Volume (vph)	98	16	74	151	12	78	102	517	145	70	516
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	Perm	NA
Protected Phases		4			8			2			6
Permitted Phases	4		4	8		8	2		2	6	
Detector Phase	4	4	4	8	8	8	2	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	5.0	5.0
Minimum Split (s)	23.5	23.5	23.5	23.5	23.5	23.5	24.0	24.0	24.0	24.0	24.0
Total Split (s)	34.0	34.0	34.0	34.0	34.0	34.0	86.0	86.0	86.0	86.0	86.0
Total Split (%)	28.3%	28.3%	28.3%	28.3%	28.3%	28.3%	71.7%	71.7%	71.7%	71.7%	71.7%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5	5.5	6.0	6.0	6.0	6.0	6.0
Lead/Lag											
Lead-Lag Optimize?											
Recall Mode	None	None	None	None	None	None	C-Max	C-Max	C-Max	C-Max	C-Max
Act Effct Green (s)	18.8	18.8	18.8	18.8	18.8	18.8	89.7	89.7	89.7	89.7	89.7
Actuated g/C Ratio	0.16	0.16	0.16	0.16	0.16	0.16	0.75	0.75	0.75	0.75	0.75
v/c Ratio	0.49	0.06	0.26	0.72	0.04	0.26	0.18	0.20	0.12	0.12	0.24
Control Delay	52.9	40.3	10.9	65.9	39.9	10.5	6.3	5.2	1.1	5.7	5.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	52.9	40.3	10.9	65.9	39.9	10.5	6.3	5.2	1.1	5.7	5.2
LOS	D	D	B	E	D	B	A	A	A	A	A
Approach Delay		35.3			46.7			4.6			5.2
Approach LOS		D			D			A			A
Intersection Summary											
Cycle Length: 120											
Actuated Cycle Length: 120											
Offset: 53.5 (45%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow											
Natural Cycle: 50											
Control Type: Actuated-Coordinated											
Maximum v/c Ratio: 0.72											
Intersection Signal Delay: 13.4						Intersection LOS: B					
Intersection Capacity Utilization 52.0%						ICU Level of Service A					
Analysis Period (min) 15											

Splits and Phases: 2: Gartrell Rd & Dry Creek Rd



























# HCM 6th Signalized Intersection Summary

## 2: Gartrell Rd & Dry Creek Rd

2025 Background PM

10/16/2023

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	98	16	74	151	12	78	102	517	145	70	516	79
Future Volume (veh/h)	98	16	74	151	12	78	102	517	145	70	516	79
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	1796	1796	1796	1870	1870	1870	1870	1870	1870	1856	1856	1856
Adj Flow Rate, veh/h	102	17	77	157	12	81	106	539	151	73	538	82
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	7	7	7	2	2	2	2	2	2	3	3	3
Cap, veh/h	238	266	225	242	276	234	626	2688	1199	593	2321	353
Arrive On Green	0.15	0.15	0.15	0.15	0.15	0.15	0.76	0.76	0.76	0.76	0.76	0.76
Sat Flow, veh/h	1252	1796	1522	1302	1870	1585	804	3554	1585	747	3068	466
Grp Volume(v), veh/h	102	17	77	157	12	81	106	539	151	73	308	312
Grp Sat Flow(s),veh/h/ln	1252	1796	1522	1302	1870	1585	804	1777	1585	747	1763	1772
Q Serve(g_s), s	9.1	1.0	5.4	14.2	0.7	5.5	5.4	5.2	3.1	3.7	6.2	6.2
Cycle Q Clear(g_c), s	9.8	1.0	5.4	15.1	0.7	5.5	11.6	5.2	3.1	9.0	6.2	6.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.26
Lane Grp Cap(c), veh/h	238	266	225	242	276	234	626	2688	1199	593	1333	1340
V/C Ratio(X)	0.43	0.06	0.34	0.65	0.04	0.35	0.17	0.20	0.13	0.12	0.23	0.23
Avail Cap(c_a), veh/h	350	427	362	359	444	376	626	2688	1199	593	1333	1340
HCM Platoon 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	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	48.1	44.0	45.9	50.5	43.9	45.9	6.0	4.2	3.9	5.5	4.3	4.3
Incr Delay (d2), s/veh	1.2	0.1	0.9	2.9	0.1	0.9	0.6	0.2	0.2	0.4	0.4	0.4
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	0.4	2.1	4.8	0.3	2.2	1.0	1.7	0.9	0.6	2.1	2.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	49.3	44.1	46.8	53.4	43.9	46.8	6.6	4.4	4.2	5.9	4.7	4.7
LnGrp LOS	D	D	D	D	D	D	A	A	A	A	A	A
Approach Vol, veh/h	196				250				796			
Approach Delay, s/veh	47.8				50.8				4.6			
Approach LOS	D				D				A			
Timer - Assigned Phs	2			4			6			8		
Phs Duration (G+Y+Rc), s	96.8			23.2			96.8			23.2		
Change Period (Y+Rc), s	6.0			5.5			6.0			5.5		
Max Green Setting (Gmax), s	80.0			28.5			80.0			28.5		
Max Q Clear Time (g_c+I1), s	13.6			11.8			11.0			17.1		
Green Ext Time (p_c), s	5.8			0.6			5.2			0.6		
Intersection Summary												
HCM 6th Ctrl Delay	15.1											
HCM 6th LOS	B											

























# Timings

## 2: Gartrell Rd & Dry Creek Rd

2025 Total AM

10/16/2023

											
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations											
Traffic Volume (vph)	145	20	70	101	19	53	112	262	101	64	561
Future Volume (vph)	145	20	70	101	19	53	112	262	101	64	561
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	Perm	NA
Protected Phases		4			8			2			6
Permitted Phases	4		4	8		8	2		2	6	
Detector Phase	4	4	4	8	8	8	2	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	5.0	5.0
Minimum Split (s)	23.5	23.5	23.5	23.5	23.5	23.5	24.0	24.0	24.0	24.0	24.0
Total Split (s)	42.0	42.0	42.0	42.0	42.0	42.0	78.0	78.0	78.0	78.0	78.0
Total Split (%)	35.0%	35.0%	35.0%	35.0%	35.0%	35.0%	65.0%	65.0%	65.0%	65.0%	65.0%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5	5.5	6.0	6.0	6.0	6.0	6.0
Lead/Lag											
Lead-Lag Optimize?											
Recall Mode	None	None	None	None	None	None	C-Max	C-Max	C-Max	C-Max	C-Max
Act Effct Green (s)	21.4	21.4	21.4	21.4	21.4	21.4	87.1	87.1	87.1	87.1	87.1
Actuated g/C Ratio	0.18	0.18	0.18	0.18	0.18	0.18	0.73	0.73	0.73	0.73	0.73
v/c Ratio	0.74	0.08	0.25	0.51	0.07	0.19	0.37	0.13	0.11	0.11	0.38
Control Delay	64.2	38.2	9.4	50.5	38.1	10.1	10.9	5.8	1.4	6.5	6.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	64.2	38.2	9.4	50.5	38.1	10.1	10.9	5.8	1.4	6.5	6.8
LOS	E	D	A	D	D	B	B	A	A	A	A
Approach Delay		45.7			36.8			6.1			6.8
Approach LOS		D			D			A			A
Intersection Summary											
Cycle Length: 120											
Actuated Cycle Length: 120											
Offset: 53.5 (45%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow											
Natural Cycle: 60											
Control Type: Actuated-Coordinated											
Maximum v/c Ratio: 0.74											
Intersection Signal Delay: 15.0											
Intersection LOS: B											
Intersection Capacity Utilization 57.5%											
ICU Level of Service B											
Analysis Period (min) 15											

Splits and Phases: 2: Gartrell Rd & Dry Creek Rd



























# HCM 6th Signalized Intersection Summary

2025 Total AM

## 2: Gartrell Rd & Dry Creek Rd

10/16/2023























												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	145	20	70	101	19	53	112	262	101	64	561	202
Future Volume (veh/h)	145	20	70	101	19	53	112	262	101	64	561	202
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	1841	1841	1841	1870	1870	1870	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	179	25	86	125	23	65	138	323	125	79	693	249
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Percent Heavy Veh, %	4	4	4	2	2	2	3	3	3	3	3	3
Cap, veh/h	266	313	265	263	318	270	434	2588	1154	721	1865	670
Arrive On Green	0.17	0.17	0.17	0.17	0.17	0.17	0.73	0.73	0.73	0.73	0.73	0.73
Sat Flow, veh/h	1288	1841	1560	1282	1870	1585	590	3526	1572	935	2541	913
Grp Volume(v), veh/h	179	25	86	125	23	65	138	323	125	79	481	461
Grp Sat Flow(s),veh/h/ln	1288	1841	1560	1282	1870	1585	590	1763	1572	935	1763	1691
Q Serve(g_s), s	16.3	1.4	5.8	10.9	1.2	4.3	13.4	3.2	2.8	3.2	12.0	12.0
Cycle Q Clear(g_c), s	17.5	1.4	5.8	12.3	1.2	4.3	25.4	3.2	2.8	6.5	12.0	12.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.54
Lane Grp Cap(c), veh/h	266	313	265	263	318	270	434	2588	1154	721	1294	1242
V/C Ratio(X)	0.67	0.08	0.32	0.47	0.07	0.24	0.32	0.12	0.11	0.11	0.37	0.37
Avail Cap(c_a), veh/h	439	560	474	435	569	482	434	2588	1154	721	1294	1242
HCM Platoon 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	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	49.2	41.9	43.7	47.1	41.8	43.1	10.5	4.7	4.6	5.6	5.8	5.8
Incr Delay (d2), s/veh	3.0	0.1	0.7	1.3	0.1	0.5	1.9	0.1	0.2	0.3	0.8	0.9
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	5.4	0.6	2.3	3.6	0.6	1.7	1.9	1.1	0.9	0.7	4.2	4.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	52.2	42.0	44.4	48.4	41.9	43.6	12.4	4.8	4.8	5.9	6.7	6.7
LnGrp LOS	D	D	D	D	D	D	B	A	A	A	A	A
Approach Vol, veh/h	290			213			586			1021		
Approach Delay, s/veh	49.0			46.2			6.6			6.6		
Approach LOS	D			D			A			A		
Timer - Assigned Phs	2			4			6			8		
Phs Duration (G+Y+Rc), s	94.1			25.9			94.1			25.9		
Change Period (Y+Rc), s	6.0			5.5			6.0			5.5		
Max Green Setting (Gmax), s	72.0			36.5			72.0			36.5		
Max Q Clear Time (g_c+I1), s	27.4			19.5			14.0			14.3		
Green Ext Time (p_c), s	4.6			0.9			8.6			0.7		
Intersection Summary												
HCM 6th Ctrl Delay	16.4											
HCM 6th LOS	B											

# Timings

## 2: Gartrell Rd & Dry Creek Rd

2025 Total PM

10/25/2023

											
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations											
Traffic Volume (vph)	119	16	76	151	12	78	128	503	145	70	523
Future Volume (vph)	119	16	76	151	12	78	128	503	145	70	523
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	Perm	NA
Protected Phases		4			8			2			6
Permitted Phases	4		4	8		8	2		2	6	
Detector Phase	4	4	4	8	8	8	2	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	5.0	5.0
Minimum Split (s)	23.5	23.5	23.5	23.5	23.5	23.5	24.0	24.0	24.0	24.0	24.0
Total Split (s)	87.0	87.0	87.0	87.0	87.0	87.0	33.0	33.0	33.0	33.0	33.0
Total Split (%)	72.5%	72.5%	72.5%	72.5%	72.5%	72.5%	27.5%	27.5%	27.5%	27.5%	27.5%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5	5.5	6.0	6.0	6.0	6.0	6.0
Lead/Lag											
Lead-Lag Optimize?											
Recall Mode	None	None	None	None	None	None	C-Max	C-Max	C-Max	C-Max	C-Max
Act Effct Green (s)	19.9	19.9	19.9	19.9	19.9	19.9	88.6	88.6	88.6	88.6	88.6
Actuated g/C Ratio	0.17	0.17	0.17	0.17	0.17	0.17	0.74	0.74	0.74	0.74	0.74
v/c Ratio	0.56	0.06	0.28	0.68	0.04	0.27	0.24	0.20	0.12	0.12	0.25
Control Delay	54.7	38.9	23.6	61.2	38.4	21.1	7.3	5.6	1.3	6.2	5.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	54.7	38.9	23.6	61.2	38.4	21.1	7.3	5.6	1.3	6.2	5.8
LOS	D	D	C	E	D	C	A	A	A	A	A
Approach Delay		42.3			47.1			5.1			5.8
Approach LOS		D			D			A			A
Intersection Summary											
Cycle Length: 120											
Actuated Cycle Length: 120											
Offset: 53.5 (45%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow											
Natural Cycle: 50											
Control Type: Actuated-Coordinated											
Maximum v/c Ratio: 0.68											
Intersection Signal Delay: 14.8											
Intersection LOS: B											
Intersection Capacity Utilization 53.7%											
ICU Level of Service A											
Analysis Period (min) 15											

Splits and Phases: 2: Gartrell Rd & Dry Creek Rd



























# HCM 6th Signalized Intersection Summary

2025 Total PM

## 2: Gartrell Rd & Dry Creek Rd

10/25/2023























												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	119	16	76	151	12	78	128	503	145	70	523	79
Future Volume (veh/h)	119	16	76	151	12	78	128	503	145	70	523	79
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	1796	1796	1796	1870	1870	1870	1870	1870	1870	1856	1856	1856
Adj Flow Rate, veh/h	124	17	79	157	12	81	133	524	151	73	545	82
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	7	7	7	2	2	2	2	2	2	3	3	3
Cap, veh/h	241	269	228	244	280	238	620	2680	1196	599	2319	348
Arrive On Green	0.15	0.15	0.15	0.15	0.15	0.15	0.75	0.75	0.75	0.75	0.75	0.75
Sat Flow, veh/h	1252	1796	1522	1300	1870	1585	799	3554	1585	758	3074	461
Grp Volume(v), veh/h	124	17	79	157	12	81	133	524	151	73	312	315
Grp Sat Flow(s),veh/h/ln	1252	1796	1522	1300	1870	1585	799	1777	1585	758	1763	1773
Q Serve(g_s), s	11.3	1.0	5.6	14.2	0.7	5.5	7.2	5.1	3.1	3.7	6.3	6.4
Cycle Q Clear(g_c), s	11.9	1.0	5.6	15.1	0.7	5.5	13.5	5.1	3.1	8.8	6.3	6.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.26
Lane Grp Cap(c), veh/h	241	269	228	244	280	238	620	2680	1196	599	1330	1337
V/C Ratio(X)	0.52	0.06	0.35	0.64	0.04	0.34	0.21	0.20	0.13	0.12	0.23	0.24
Avail Cap(c_a), veh/h	903	1220	1034	932	1270	1077	620	2680	1196	599	1330	1337
HCM Platoon 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	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	48.7	43.8	45.7	50.3	43.6	45.7	6.4	4.3	4.0	5.5	4.4	4.4
Incr Delay (d2), s/veh	1.7	0.1	0.9	2.8	0.1	0.8	0.8	0.2	0.2	0.4	0.4	0.4
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	0.4	2.2	4.8	0.3	2.2	1.3	1.7	1.0	0.6	2.2	2.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	50.5	43.9	46.6	53.1	43.7	46.5	7.2	4.4	4.2	5.9	4.8	4.8
LnGrp LOS	D	D	D	D	D	D	A	A	A	A	A	A
Approach Vol, veh/h	220			250			808			700		
Approach Delay, s/veh	48.6			50.5			4.8			4.9		
Approach LOS	D			D			A			A		
Timer - Assigned Phs	2			4			6			8		
Phs Duration (G+Y+Rc), s	96.5			23.5			96.5			23.5		
Change Period (Y+Rc), s	6.0			5.5			6.0			5.5		
Max Green Setting (Gmax), s	27.0			81.5			27.0			81.5		
Max Q Clear Time (g_c+I1), s	15.5			13.9			10.8			17.1		
Green Ext Time (p_c), s	3.8			0.8			4.1			0.9		
Intersection Summary												
HCM 6th Ctrl Delay	15.5											
HCM 6th LOS	B											

# Timings

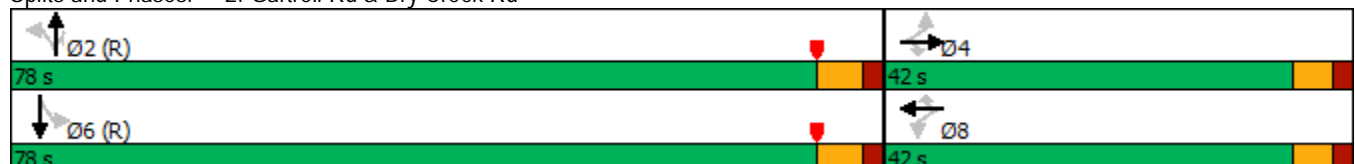
## 2: Gartrell Rd & Dry Creek Rd

2040 Background AM

10/16/2023

											
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations											
Traffic Volume (vph)	162	20	90	101	19	53	112	368	101	64	739
Future Volume (vph)	162	20	90	101	19	53	112	368	101	64	739
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	Perm	NA
Protected Phases		4			8			2			6
Permitted Phases	4		4	8		8	2		2	6	
Detector Phase	4	4	4	8	8	8	2	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	5.0	5.0
Minimum Split (s)	23.5	23.5	23.5	23.5	23.5	23.5	24.0	24.0	24.0	24.0	24.0
Total Split (s)	42.0	42.0	42.0	42.0	42.0	42.0	78.0	78.0	78.0	78.0	78.0
Total Split (%)	35.0%	35.0%	35.0%	35.0%	35.0%	35.0%	65.0%	65.0%	65.0%	65.0%	65.0%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5	5.5	6.0	6.0	6.0	6.0	6.0
Lead/Lag											
Lead-Lag Optimize?											
Recall Mode	None	None	None	None	None	None	C-Max	C-Max	C-Max	C-Max	C-Max
Act Efect Green (s)	21.1	21.1	21.1	21.1	21.1	21.1	87.4	87.4	87.4	87.4	87.4
Actuated g/C Ratio	0.18	0.18	0.18	0.18	0.18	0.18	0.73	0.73	0.73	0.73	0.73
v/c Ratio	0.74	0.07	0.28	0.45	0.06	0.18	0.39	0.16	0.09	0.10	0.44
Control Delay	64.2	38.3	9.3	48.7	38.2	10.5	12.2	5.8	1.5	6.4	7.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	64.2	38.3	9.3	48.7	38.2	10.5	12.2	5.8	1.5	6.4	7.3
LOS	E	D	A	D	D	B	B	A	A	A	A
Approach Delay		44.1			35.8			6.3			7.3
Approach LOS		D			D			A			A
Intersection Summary											
Cycle Length: 120											
Actuated Cycle Length: 120											
Offset: 53.5 (45%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow											
Natural Cycle: 60											
Control Type: Actuated-Coordinated											
Maximum v/c Ratio: 0.74											
Intersection Signal Delay: 14.1											
Intersection LOS: B											
Intersection Capacity Utilization 65.6%											
ICU Level of Service C											
Analysis Period (min) 15											

Splits and Phases: 2: Gartrell Rd & Dry Creek Rd



























# HCM 6th Signalized Intersection Summary

## 2: Gartrell Rd & Dry Creek Rd

2040 Background AM

10/16/2023























												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	162	20	90	101	19	53	112	368	101	64	739	272
Future Volume (veh/h)	162	20	90	101	19	53	112	368	101	64	739	272
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	1841	1841	1841	1870	1870	1870	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	176	22	98	110	21	58	122	400	110	70	803	296
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	4	4	4	2	2	2	3	3	3	3	3	3
Cap, veh/h	263	305	259	258	310	263	373	2603	1161	682	1862	686
Arrive On Green	0.17	0.17	0.17	0.17	0.17	0.17	0.74	0.74	0.74	0.74	0.74	0.74
Sat Flow, veh/h	1299	1841	1560	1272	1870	1585	509	3526	1572	883	2522	929
Grp Volume(v), veh/h	176	22	98	110	21	58	122	400	110	70	561	538
Grp Sat Flow(s),veh/h/ln	1299	1841	1560	1272	1870	1585	509	1763	1572	883	1763	1688
Q Serve(g_s), s	15.9	1.2	6.7	9.6	1.1	3.8	14.5	4.0	2.4	3.1	14.7	14.7
Cycle Q Clear(g_c), s	17.0	1.2	6.7	10.8	1.1	3.8	29.2	4.0	2.4	7.1	14.7	14.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.55
Lane Grp Cap(c), veh/h	263	305	259	258	310	263	373	2603	1161	682	1301	1246
V/C Ratio(X)	0.67	0.07	0.38	0.43	0.07	0.22	0.33	0.15	0.09	0.10	0.43	0.43
Avail Cap(c_a), veh/h	443	560	474	434	569	482	373	2603	1161	682	1301	1246
HCM Platoon 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	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	49.4	42.2	44.5	46.8	42.2	43.3	11.6	4.6	4.4	5.7	6.0	6.0
Incr Delay (d2), s/veh	2.9	0.1	0.9	1.1	0.1	0.4	2.3	0.1	0.2	0.3	1.0	1.1
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	5.4	0.6	2.7	3.1	0.5	1.5	1.8	1.4	0.7	0.6	5.2	5.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	52.3	42.3	45.5	47.9	42.3	43.7	14.0	4.8	4.6	6.0	7.1	7.1
LnGrp LOS	D	D	D	D	D	D	B	A	A	A	A	A
Approach Vol, veh/h	296			189			632			1169		
Approach Delay, s/veh	49.3			46.0			6.5			7.0		
Approach LOS	D			D			A			A		
Timer - Assigned Phs	2			4			6			8		
Phs Duration (G+Y+Rc), s	94.6			25.4			94.6			25.4		
Change Period (Y+Rc), s	6.0			5.5			6.0			5.5		
Max Green Setting (Gmax), s	72.0			36.5			72.0			36.5		
Max Q Clear Time (g_c+I1), s	31.2			19.0			16.7			12.8		
Green Ext Time (p_c), s	5.3			0.9			10.8			0.6		
Intersection Summary												
HCM 6th Ctrl Delay	15.6											
HCM 6th LOS	B											

# Timings

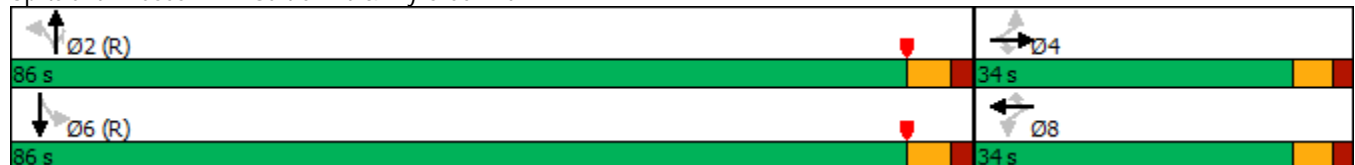
## 2: Gartrell Rd & Dry Creek Rd

2040 Background PM

10/16/2023

											
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations											
Traffic Volume (vph)	132	16	99	151	12	78	137	696	145	70	695
Future Volume (vph)	132	16	99	151	12	78	137	696	145	70	695
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	Perm	NA
Protected Phases		4			8			2			6
Permitted Phases	4		4	8		8	2		2	6	
Detector Phase	4	4	4	8	8	8	2	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	5.0	5.0
Minimum Split (s)	23.5	23.5	23.5	23.5	23.5	23.5	24.0	24.0	24.0	24.0	24.0
Total Split (s)	34.0	34.0	34.0	34.0	34.0	34.0	86.0	86.0	86.0	86.0	86.0
Total Split (%)	28.3%	28.3%	28.3%	28.3%	28.3%	28.3%	71.7%	71.7%	71.7%	71.7%	71.7%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5	5.5	6.0	6.0	6.0	6.0	6.0
Lead/Lag											
Lead-Lag Optimize?											
Recall Mode	None	None	None	None	None	None	C-Max	C-Max	C-Max	C-Max	C-Max
Act Effct Green (s)	18.8	18.8	18.8	18.8	18.8	18.8	89.7	89.7	89.7	89.7	89.7
Actuated g/C Ratio	0.16	0.16	0.16	0.16	0.16	0.16	0.75	0.75	0.75	0.75	0.75
v/c Ratio	0.66	0.06	0.32	0.72	0.04	0.26	0.32	0.27	0.12	0.14	0.32
Control Delay	62.0	40.3	10.2	65.9	39.9	10.5	8.3	5.6	1.1	6.1	5.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	62.0	40.3	10.2	65.9	39.9	10.5	8.3	5.6	1.1	6.1	5.7
LOS	E	D	B	E	D	B	A	A	A	A	A
Approach Delay		39.9			46.7			5.3			5.8
Approach LOS		D			D			A			A
Intersection Summary											
Cycle Length: 120											
Actuated Cycle Length: 120											
Offset: 53.5 (45%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow											
Natural Cycle: 55											
Control Type: Actuated-Coordinated											
Maximum v/c Ratio: 0.72											
Intersection Signal Delay: 13.4											
Intersection LOS: B											
Intersection Capacity Utilization 59.8%											
ICU Level of Service B											
Analysis Period (min) 15											

Splits and Phases: 2: Gartrell Rd & Dry Creek Rd





























# HCM 6th Signalized Intersection Summary

## 2: Gartrell Rd & Dry Creek Rd

2040 Background PM

10/16/2023























												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	132	16	99	151	12	78	137	696	145	70	695	106
Future Volume (veh/h)	132	16	99	151	12	78	137	696	145	70	695	106
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	1796	1796	1796	1870	1870	1870	1870	1870	1870	1856	1856	1856
Adj Flow Rate, veh/h	138	17	103	157	12	81	143	725	151	73	724	110
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	7	7	7	2	2	2	2	2	2	3	3	3
Cap, veh/h	242	271	229	241	282	239	506	2678	1194	494	2312	351
Arrive On Green	0.15	0.15	0.15	0.15	0.15	0.15	0.75	0.75	0.75	0.75	0.75	0.75
Sat Flow, veh/h	1252	1796	1522	1272	1870	1585	658	3554	1585	628	3068	466
Grp Volume(v), veh/h	138	17	103	157	12	81	143	725	151	73	416	418
Grp Sat Flow(s),veh/h/ln	1252	1796	1522	1272	1870	1585	658	1777	1585	628	1763	1772
Q Serve(g_s), s	12.7	1.0	7.4	14.5	0.7	5.5	10.7	7.6	3.1	4.9	9.1	9.1
Cycle Q Clear(g_c), s	13.4	1.0	7.4	15.5	0.7	5.5	19.9	7.6	3.1	12.5	9.1	9.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.26
Lane Grp Cap(c), veh/h	242	271	229	241	282	239	506	2678	1194	494	1328	1335
V/C Ratio(X)	0.57	0.06	0.45	0.65	0.04	0.34	0.28	0.27	0.13	0.15	0.31	0.31
Avail Cap(c_a), veh/h	350	427	362	352	444	376	506	2678	1194	494	1328	1335
HCM Platoon 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	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	49.3	43.7	46.4	50.3	43.6	45.6	8.0	4.6	4.0	6.5	4.8	4.8
Incr Delay (d2), s/veh	2.1	0.1	1.4	2.9	0.1	0.8	1.4	0.2	0.2	0.6	0.6	0.6
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	4.1	0.4	2.9	4.8	0.3	2.2	1.6	2.5	1.0	0.7	3.1	3.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	51.4	43.8	47.8	53.3	43.6	46.4	9.4	4.8	4.2	7.1	5.4	5.4
LnGrp LOS	D	D	D	D	D	D	A	A	A	A	A	A
Approach Vol, veh/h	258			250			1019			907		
Approach Delay, s/veh	49.5			50.6			5.4			5.5		
Approach LOS	D			D			A			A		
Timer - Assigned Phs	2			4			6			8		
Phs Duration (G+Y+Rc), s	96.4			23.6			96.4			23.6		
Change Period (Y+Rc), s	6.0			5.5			6.0			5.5		
Max Green Setting (Gmax), s	80.0			28.5			80.0			28.5		
Max Q Clear Time (g_c+I1), s	21.9			15.4			14.5			17.5		
Green Ext Time (p_c), s	8.8			0.7			7.6			0.6		
Intersection Summary												
HCM 6th Ctrl Delay	14.8											
HCM 6th LOS	B											

# Timings

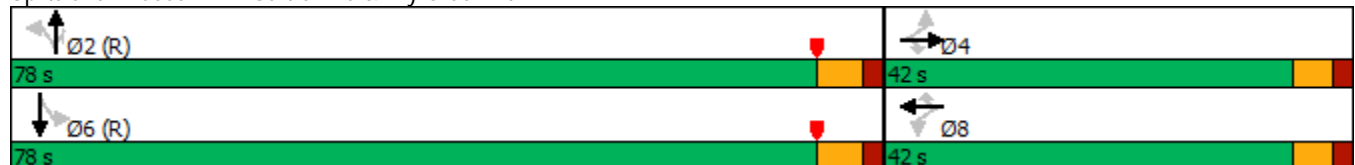
## 2: Gartrell Rd & Dry Creek Rd

2040 Total AM

10/16/2023

























											
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations											
Traffic Volume (vph)	186	20	93	101	19	53	141	356	101	64	751
Future Volume (vph)	186	20	93	101	19	53	141	356	101	64	751
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	Perm	NA
Protected Phases		4			8			2			6
Permitted Phases	4		4	8		8	2		2	6	
Detector Phase	4	4	4	8	8	8	2	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	5.0	5.0
Minimum Split (s)	23.5	23.5	23.5	23.5	23.5	23.5	24.0	24.0	24.0	24.0	24.0
Total Split (s)	42.0	42.0	42.0	42.0	42.0	42.0	78.0	78.0	78.0	78.0	78.0
Total Split (%)	35.0%	35.0%	35.0%	35.0%	35.0%	35.0%	65.0%	65.0%	65.0%	65.0%	65.0%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5	5.5	6.0	6.0	6.0	6.0	6.0
Lead/Lag											
Lead-Lag Optimize?											
Recall Mode	None	None	None	None	None	None	C-Max	C-Max	C-Max	C-Max	C-Max
Act Effct Green (s)	23.4	23.4	23.4	23.4	23.4	23.4	85.1	85.1	85.1	85.1	85.1
Actuated g/C Ratio	0.20	0.20	0.20	0.20	0.20	0.20	0.71	0.71	0.71	0.71	0.71
v/c Ratio	0.77	0.06	0.26	0.41	0.06	0.16	0.52	0.16	0.10	0.10	0.46
Control Delay	63.5	36.2	8.5	45.1	36.1	9.8	18.2	6.6	1.7	7.3	8.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	63.5	36.2	8.5	45.1	36.1	9.8	18.2	6.6	1.7	7.3	8.4
LOS	E	D	A	D	D	A	B	A	A	A	A
Approach Delay		44.5			33.3			8.5			8.3
Approach LOS		D			C			A			A
Intersection Summary											
Cycle Length: 120											
Actuated Cycle Length: 120											
Offset: 53.5 (45%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow											
Natural Cycle: 65											
Control Type: Actuated-Coordinated											
Maximum v/c Ratio: 0.77											
Intersection Signal Delay: 15.4											
Intersection LOS: B											
Intersection Capacity Utilization 68.8%											
ICU Level of Service C											
Analysis Period (min) 15											

Splits and Phases: 2: Gartrell Rd & Dry Creek Rd



# HCM 6th Signalized Intersection Summary 2: Gartrell Rd & Dry Creek Rd

2040 Total AM  
10/16/2023























												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	186	20	93	101	19	53	141	356	101	64	751	272
Future Volume (veh/h)	186	20	93	101	19	53	141	356	101	64	751	272
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	1841	1841	1841	1870	1870	1870	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	202	22	101	110	21	58	153	387	110	70	816	296
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	4	4	4	2	2	2	3	3	3	3	3	3
Cap, veh/h	289	342	290	283	347	294	354	2533	1130	671	1821	660
Arrive On Green	0.19	0.19	0.19	0.19	0.19	0.19	0.72	0.72	0.72	0.72	0.72	0.72
Sat Flow, veh/h	1299	1841	1560	1268	1870	1585	503	3526	1572	893	2535	918
Grp Volume(v), veh/h	202	22	101	110	21	58	153	387	110	70	567	545
Grp Sat Flow(s),veh/h/ln	1299	1841	1560	1268	1870	1585	503	1763	1572	893	1763	1690
Q Serve(g_s), s	18.2	1.2	6.8	9.4	1.1	3.7	21.8	4.2	2.5	3.2	16.0	16.1
Cycle Q Clear(g_c), s	19.3	1.2	6.8	10.6	1.1	3.7	37.9	4.2	2.5	7.4	16.0	16.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.54
Lane Grp Cap(c), veh/h	289	342	290	283	347	294	354	2533	1130	671	1267	1215
V/C Ratio(X)	0.70	0.06	0.35	0.39	0.06	0.20	0.43	0.15	0.10	0.10	0.45	0.45
Avail Cap(c_a), veh/h	443	560	474	433	569	482	354	2533	1130	671	1267	1215
HCM Platoon 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	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	48.2	40.3	42.5	44.6	40.2	41.3	14.9	5.3	5.1	6.5	7.0	7.0
Incr Delay (d2), s/veh	3.1	0.1	0.7	0.9	0.1	0.3	3.8	0.1	0.2	0.3	1.1	1.2
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	6.1	0.5	2.7	3.0	0.5	1.5	2.8	1.5	0.8	0.6	5.8	5.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	51.2	40.4	43.3	45.5	40.3	41.6	18.7	5.5	5.3	6.8	8.2	8.2
LnGrp LOS	D	D	D	D	D	D	B	A	A	A	A	A
Approach Vol, veh/h	325			189			650			1182		
Approach Delay, s/veh	48.0			43.7			8.5			8.1		
Approach LOS	D			D			A			A		
Timer - Assigned Phs	2			4			6			8		
Phs Duration (G+Y+Rc), s	92.2			27.8			92.2			27.8		
Change Period (Y+Rc), s	6.0			5.5			6.0			5.5		
Max Green Setting (Gmax), s	72.0			36.5			72.0			36.5		
Max Q Clear Time (g_c+I1), s	39.9			21.3			18.1			12.6		
Green Ext Time (p_c), s	5.6			1.0			11.0			0.6		
Intersection Summary												
HCM 6th Ctrl Delay	16.6											
HCM 6th LOS	B											

# Timings

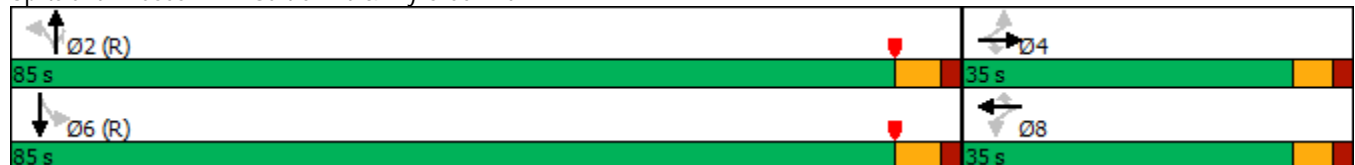
## 2: Gartrell Rd & Dry Creek Rd

2040 Total PM

10/25/2023

											
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations											
Traffic Volume (vph)	153	16	101	151	12	78	163	682	145	70	702
Future Volume (vph)	153	16	101	151	12	78	163	682	145	70	702
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	Perm	NA
Protected Phases		4			8			2			6
Permitted Phases	4		4	8		8	2		2	6	
Detector Phase	4	4	4	8	8	8	2	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	5.0	5.0
Minimum Split (s)	23.5	23.5	23.5	23.5	23.5	23.5	24.0	24.0	24.0	24.0	24.0
Total Split (s)	35.0	35.0	35.0	35.0	35.0	35.0	85.0	85.0	85.0	85.0	85.0
Total Split (%)	29.2%	29.2%	29.2%	29.2%	29.2%	29.2%	70.8%	70.8%	70.8%	70.8%	70.8%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5	5.5	6.0	6.0	6.0	6.0	6.0
Lead/Lag											
Lead-Lag Optimize?											
Recall Mode	None	None	None	None	None	None	C-Max	C-Max	C-Max	C-Max	C-Max
Act Efect Green (s)	19.7	19.7	19.7	19.7	19.7	19.7	88.8	88.8	88.8	88.8	88.8
Actuated g/C Ratio	0.16	0.16	0.16	0.16	0.16	0.16	0.74	0.74	0.74	0.74	0.74
v/c Ratio	0.73	0.06	0.31	0.69	0.04	0.25	0.39	0.27	0.12	0.14	0.33
Control Delay	65.6	39.1	9.7	61.7	38.8	10.1	10.0	6.0	1.2	6.5	6.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	65.6	39.1	9.7	61.7	38.8	10.1	10.0	6.0	1.2	6.5	6.1
LOS	E	D	A	E	D	B	A	A	A	A	A
Approach Delay		43.1			43.8			5.9			6.2
Approach LOS		D			D			A			A
Intersection Summary											
Cycle Length: 120											
Actuated Cycle Length: 120											
Offset: 53.5 (45%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow											
Natural Cycle: 60											
Control Type: Actuated-Coordinated											
Maximum v/c Ratio: 0.73											
Intersection Signal Delay: 14.1											
Intersection LOS: B											
Intersection Capacity Utilization 61.5%											
ICU Level of Service B											
Analysis Period (min) 15											

Splits and Phases: 2: Gartrell Rd & Dry Creek Rd



























# HCM 6th Signalized Intersection Summary

## 2: Gartrell Rd & Dry Creek Rd

2040 Total PM

10/25/2023




												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	153	16	101	151	12	78	163	682	145	70	702	106
Future Volume (veh/h)	153	16	101	151	12	78	163	682	145	70	702	106
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	1796	1796	1796	1870	1870	1870	1870	1870	1870	1856	1856	1856
Adj Flow Rate, veh/h	159	17	105	157	12	81	170	710	151	73	731	110
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	7	7	7	2	2	2	2	2	2	3	3	3
Cap, veh/h	244	274	232	243	285	242	501	2671	1191	499	2310	347
Arrive On Green	0.15	0.15	0.15	0.15	0.15	0.15	0.75	0.75	0.75	0.75	0.75	0.75
Sat Flow, veh/h	1252	1796	1522	1269	1870	1585	654	3554	1585	637	3073	462
Grp Volume(v), veh/h	159	17	105	157	12	81	170	710	151	73	419	422
Grp Sat Flow(s),veh/h/ln	1252	1796	1522	1269	1870	1585	654	1777	1585	637	1763	1772
Q Serve(g_s), s	14.9	1.0	7.5	14.5	0.7	5.5	13.7	7.4	3.1	4.8	9.3	9.3
Cycle Q Clear(g_c), s	15.6	1.0	7.5	15.5	0.7	5.5	23.0	7.4	3.1	12.3	9.3	9.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.26
Lane Grp Cap(c), veh/h	244	274	232	243	285	242	501	2671	1191	499	1325	1332
V/C Ratio(X)	0.65	0.06	0.45	0.65	0.04	0.33	0.34	0.27	0.13	0.15	0.32	0.32
Avail Cap(c_a), veh/h	361	442	374	362	460	390	501	2671	1191	499	1325	1332
HCM Platoon 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	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	50.0	43.5	46.3	50.1	43.4	45.4	8.6	4.6	4.1	6.5	4.9	4.9
Incr Delay (d2), s/veh	2.9	0.1	1.4	2.9	0.1	0.8	1.8	0.2	0.2	0.6	0.6	0.6
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	4.8	0.4	2.9	4.8	0.3	2.2	2.1	2.5	1.0	0.7	3.2	3.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	52.9	43.6	47.7	53.0	43.4	46.2	10.4	4.9	4.3	7.1	5.5	5.5
LnGrp LOS	D	D	D	D	D	D	B	A	A	A	A	A
Approach Vol, veh/h	281				250				1031		914	
Approach Delay, s/veh	50.4				50.3				5.7		5.6	
Approach LOS	D				D				A		A	
Timer - Assigned Phs	2			4			6			8		
Phs Duration (G+Y+Rc), s	96.2			23.8			96.2			23.8		
Change Period (Y+Rc), s	6.0			5.5			6.0			5.5		
Max Green Setting (Gmax), s	79.0			29.5			79.0			29.5		
Max Q Clear Time (g_c+I1), s	25.0			17.6			14.3			17.5		
Green Ext Time (p_c), s	9.0			0.8			7.7			0.6		
Intersection Summary												
HCM 6th Ctrl Delay	15.3											
HCM 6th LOS	B											

HCM 6th TWSC  
3: Hinsdale Ave & Access

2025 Total AM  
10/16/2023

Intersection

Int Delay, s/veh 2.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	43	0	31	72	1	31
Future Vol, veh/h	43	0	31	72	1	31
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	78	78	78	78	78	78
Heavy Vehicles, %	8	8	2	2	2	2
Mvmt Flow	55	0	40	92	1	40




Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	128	86	0
Stage 1	86	-	-
Stage 2	42	-	-
Critical Hdwy	6.48	6.28	-
Critical Hdwy Stg 1	5.48	-	-
Critical Hdwy Stg 2	5.48	-	-
Follow-up Hdwy	3.572	3.372	-
Pot Cap-1 Maneuver	852	956	-
Stage 1	922	-	-
Stage 2	965	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	851	956	-
Mov Cap-2 Maneuver	851	-	-
Stage 1	922	-	-
Stage 2	964	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.5	0	0.2
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	851	1453
HCM Lane V/C Ratio	-	-	0.065	0.001
HCM Control Delay (s)	-	-	9.5	7.5
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	0.2	0

HCM 6th TWSC  
3: Hinsdale Ave & Access




2025 Total PM  
10/16/2023

Intersection						
Int Delay, s/veh	3.1					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	44	3	11	76	6	14
Future Vol, veh/h	44	3	11	76	6	14
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	9	9
Mvmt Flow	51	3	13	87	7	16
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	87	57	0	0	100	0
Stage 1	57	-	-	-	-	-
Stage 2	30	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.19	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.281	-
Pot Cap-1 Maneuver	914	1009	-	-	1450	-
Stage 1	966	-	-	-	-	-
Stage 2	993	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	909	1009	-	-	1450	-
Mov Cap-2 Maneuver	909	-	-	-	-	-
Stage 1	966	-	-	-	-	-
Stage 2	988	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s	9.2	0		2.2		
HCM LOS	A					
Minor Lane/Major Mvmt	NBT	NBRWBLn1		SBL	SBT	
Capacity (veh/h)	-	- 915		1450	-	
HCM Lane V/C Ratio	-	- 0.059		0.005	-	
HCM Control Delay (s)	-	- 9.2		7.5	0	
HCM Lane LOS	-	- A		A	A	
HCM 95th %tile Q(veh)	-	- 0.2		0	-	



HCM 6th TWSC  
3: Hinsdale Ave & Access

2040 Total AM  
10/16/2023




Intersection						
Int Delay, s/veh	2.1					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	43	0	42	72	1	42
Future Vol, veh/h	43	0	42	72	1	42
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, %	8	8	2	2	2	2
Mvmt Flow	47	0	46	78	1	46
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	133	85	0	0	124	0
Stage 1	85	-	-	-	-	-
Stage 2	48	-	-	-	-	-
Critical Hdwy	6.48	6.28	-	-	4.12	-
Critical Hdwy Stg 1	5.48	-	-	-	-	-
Critical Hdwy Stg 2	5.48	-	-	-	-	-
Follow-up Hdwy	3.572	3.372	-	-	2.218	-
Pot Cap-1 Maneuver	847	958	-	-	1463	-
Stage 1	923	-	-	-	-	-
Stage 2	959	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	846	958	-	-	1463	-
Mov Cap-2 Maneuver	846	-	-	-	-	-
Stage 1	923	-	-	-	-	-
Stage 2	958	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s	9.5	0		0.2		
HCM LOS	A					
Minor Lane/Major Mvmt	NBT	NBRWBLn1		SBL	SBT	
Capacity (veh/h)	-	846		1463	-	
HCM Lane V/C Ratio	-	0.055		0.001	-	
HCM Control Delay (s)	-	9.5		7.5	0	
HCM Lane LOS	-	A		A	A	
HCM 95th %tile Q(veh)	-	0.2		0	-	

HCM 6th TWSC  
3: Hinsdale Ave & Access

2040 Total PM  
10/16/2023

Intersection

Int Delay, s/veh 3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	44	3	15	76	6	18
Future Vol, veh/h	44	3	15	76	6	18
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	9	9
Mvmt Flow	48	3	16	83	7	20

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	92	58	0
Stage 1	58	-	-
Stage 2	34	-	-
Critical Hdwy	6.42	6.22	-
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3.518	3.318	-
Pot Cap-1 Maneuver	908	1008	-
Stage 1	965	-	-
Stage 2	988	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	903	1008	-
Mov Cap-2 Maneuver	903	-	-
Stage 1	965	-	-
Stage 2	983	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.2	0	1.9
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	909	1451
HCM Lane V/C Ratio	-	-	0.056	0.004
HCM Control Delay (s)	-	-	9.2	7.5
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	0.2	0

Intersection						
Int Delay, s/veh	0.9					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		↗		↑↑	↑↑	
Traffic Vol, veh/h	0	89	0	469	752	55
Future Vol, veh/h	0	89	0	469	752	55
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	79	79	79	79	79	79
Heavy Vehicles, %	2	2	2	2	3	3
Mvmt Flow	0	113	0	594	952	70
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	-	511	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.94	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.32	-	-	-	-
Pot Cap-1 Maneuver	0	508	0	-	-	-
Stage 1	0	-	0	-	-	-
Stage 2	0	-	0	-	-	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	508	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	14.1	0		0		
HCM LOS	B					
Minor Lane/Major Mvmt	NBT EBLn1		SBT	SBR		
Capacity (veh/h)	- 508		-	-		
HCM Lane V/C Ratio	- 0.222		-	-		
HCM Control Delay (s)	- 14.1		-	-		
HCM Lane LOS	- B		-	-		
HCM 95th %tile Q(veh)	- 0.8		-	-		

Intersection						
Int Delay, s/veh	0.6					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		↗		↑↑	↑↑	
Traffic Vol, veh/h	0	77	0	697	596	47
Future Vol, veh/h	0	77	0	697	596	47
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	82	0	741	634	50
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	-	342	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.94	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.32	-	-	-	-
Pot Cap-1 Maneuver	0	654	0	-	-	-
Stage 1	0	-	0	-	-	-
Stage 2	0	-	0	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	654	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	11.3	0		0		
HCM LOS	B					
Minor Lane/Major Mvmt	NBT EBLn1		SBT	SBR		
Capacity (veh/h)	- 654		-	-		
HCM Lane V/C Ratio	- 0.125		-	-		
HCM Control Delay (s)	- 11.3		-	-		
HCM Lane LOS	- B		-	-		
HCM 95th %tile Q(veh)	- 0.4		-	-		

Intersection						
Int Delay, s/veh	0.7					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		↗		↑↑	↑↑	
Traffic Vol, veh/h	0	89	0	627	1020	61
Future Vol, veh/h	0	89	0	627	1020	61
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	3	3
Mvmt Flow	0	97	0	682	1109	66
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	-	588	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.94	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.32	-	-	-	-
Pot Cap-1 Maneuver	0	452	0	-	-	-
Stage 1	0	-	0	-	-	-
Stage 2	0	-	0	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	452	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	15.1	0		0		
HCM LOS	C					
Minor Lane/Major Mvmt	NBT EBLn1		SBT	SBR		
Capacity (veh/h)	- 452		-	-		
HCM Lane V/C Ratio	- 0.214		-	-		
HCM Control Delay (s)	- 15.1		-	-		
HCM Lane LOS	- C		-	-		
HCM 95th %tile Q(veh)	- 0.8		-	-		

Intersection						
Int Delay, s/veh	0.5					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		↗		↗↗	↗↗	
Traffic Vol, veh/h	0	77	0	935	807	55
Future Vol, veh/h	0	77	0	935	807	55
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	82	0	995	859	59
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	-	459	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.94	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.32	-	-	-	-
Pot Cap-1 Maneuver	0	549	0	-	-	-
Stage 1	0	-	0	-	-	-
Stage 2	0	-	0	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	549	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	12.7	0		0		
HCM LOS	B					
Minor Lane/Major Mvmt	NBT EBLn1		SBT	SBR		
Capacity (veh/h)	- 549		-	-		
HCM Lane V/C Ratio	- 0.149		-	-		
HCM Control Delay (s)	- 12.7		-	-		
HCM Lane LOS	- B		-	-		
HCM 95th %tile Q(veh)	- 0.5		-	-		

# APPENDIX D

## Queue Analysis Worksheets














## Queues

2025 Total AM

## 2: Gartrell Rd &amp; Dry Creek Rd

10/16/2023

											
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	179	25	86	125	23	65	138	323	125	79	942
v/c Ratio	0.74	0.08	0.25	0.51	0.07	0.19	0.37	0.13	0.11	0.11	0.38
Control Delay	64.2	38.2	9.4	50.5	38.1	10.1	10.9	5.8	1.4	6.5	6.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	64.2	38.2	9.4	50.5	38.1	10.1	10.9	5.8	1.4	6.5	6.8
Queue Length 50th (ft)	133	16	0	89	15	0	35	34	0	16	115
Queue Length 95th (ft)	172	34	31	123	32	28	80	57	15	37	166
Internal Link Dist (ft)		264			185			180			278
Turn Bay Length (ft)	175		225	125		125	175		200	125	
Base Capacity (vph)	412	555	532	419	566	526	376	2544	1172	744	2464
Starvation Cap Reductn	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
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.43	0.05	0.16	0.30	0.04	0.12	0.37	0.13	0.11	0.11	0.38
Intersection Summary											

## Queues

2025 Total PM

## 2: Gartrell Rd &amp; Dry Creek Rd

10/25/2023



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	124	17	79	157	13	81	133	524	151	73	627
v/c Ratio	0.56	0.06	0.28	0.68	0.04	0.27	0.24	0.20	0.12	0.12	0.25
Control Delay	54.7	38.9	23.6	61.2	38.4	21.1	7.3	5.6	1.3	6.2	5.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	54.7	38.9	23.6	61.2	38.4	21.1	7.3	5.6	1.3	6.2	5.8
Queue Length 50th (ft)	90	11	25	116	9	22	28	56	0	14	68
Queue Length 95th (ft)	141	30	64	175	25	62	70	100	21	38	121
Internal Link Dist (ft)		264			185			180			278
Turn Bay Length (ft)	175		225	125		125	175		200	125	
Base Capacity (vph)	903	1206	1038	944	1265	1090	562	2614	1208	624	2540
Starvation Cap Reductn	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
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.14	0.01	0.08	0.17	0.01	0.07	0.24	0.20	0.13	0.12	0.25

## Intersection Summary

## Queues

2040 Total AM

## 2: Gartrell Rd &amp; Dry Creek Rd

10/16/2023



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	202	22	101	110	21	58	153	387	110	70	1112
v/c Ratio	0.77	0.06	0.26	0.41	0.06	0.16	0.52	0.16	0.10	0.10	0.46
Control Delay	63.5	36.2	8.5	45.1	36.1	9.8	18.2	6.6	1.7	7.3	8.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	63.5	36.2	8.5	45.1	36.1	9.8	18.2	6.6	1.7	7.3	8.4
Queue Length 50th (ft)	149	14	0	75	13	0	49	45	0	15	160
Queue Length 95th (ft)	215	34	43	120	33	33	149	82	21	40	264
Internal Link Dist (ft)		264			185			180			278
Turn Bay Length (ft)	175		225	125		125	175		200	125	
Base Capacity (vph)	413	555	542	420	566	521	292	2486	1144	684	2409
Starvation Cap Reductn	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
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.49	0.04	0.19	0.26	0.04	0.11	0.52	0.16	0.10	0.10	0.46












## Intersection Summary

## Queues

2040 Total PM

## 2: Gartrell Rd &amp; Dry Creek Rd

10/25/2023

											
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	159	17	105	157	13	81	170	710	151	73	841
v/c Ratio	0.73	0.06	0.31	0.69	0.04	0.25	0.39	0.27	0.12	0.14	0.33
Control Delay	65.6	39.1	9.7	61.7	38.8	10.1	10.0	6.0	1.2	6.5	6.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	65.6	39.1	9.7	61.7	38.8	10.1	10.0	6.0	1.2	6.5	6.1
Queue Length 50th (ft)	118	11	0	116	9	0	42	81	0	14	97
Queue Length 95th (ft)	180	30	45	175	25	40	107	138	21	39	165
Internal Link Dist (ft)		264			185			180			278
Turn Bay Length (ft)	175		225	125		125	175		200	125	
Base Capacity (vph)	326	436	450	341	457	450	440	2617	1210	507	2548
Starvation Cap Reductn	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
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.49	0.04	0.23	0.46	0.03	0.18	0.39	0.27	0.12	0.14	0.33
Intersection Summary											

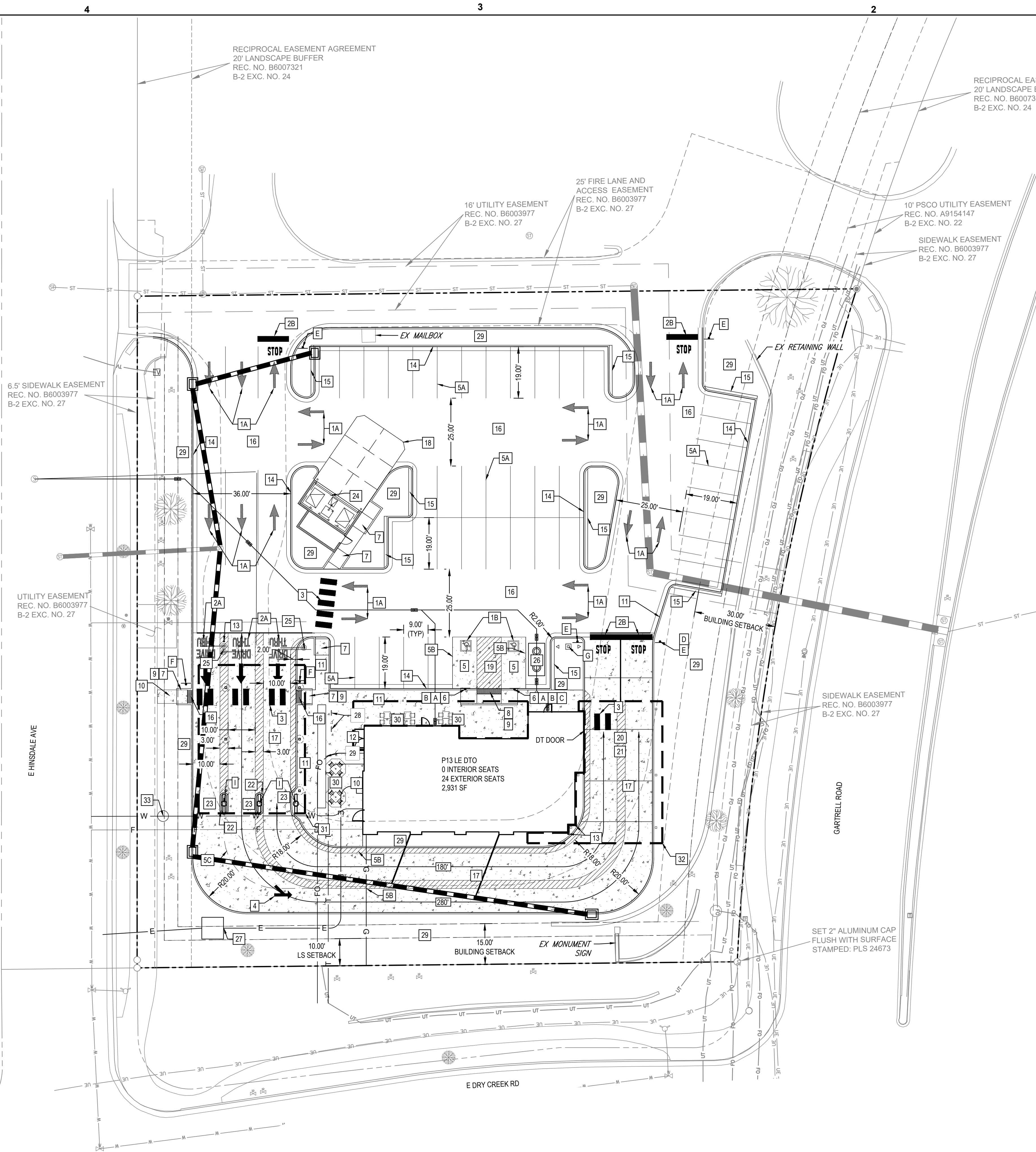
# APPENDIX E

## Conceptual Site Plan





Know what's below.  
Call before you dig.



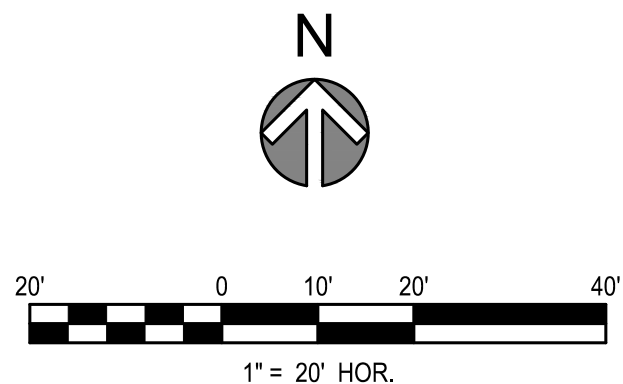
SITE PLAN DESIGN NOTES & KEY PLAN

- 1A DIRECTIONAL ARROW
- 1B PAINTED HANDICAP PARKING SYMBOL
- 2A DRIVE-THRU GRAPHICS
- 2B STOP BAR GRAPHIC
- 3 CROSSWALK MARKINGS
- 4 MULTI-LANE DIRECTIONAL GRAPHICS
- 5 STANDARD OR HANDICAP PARKING STALL PER CODE
- 5A 4" SOLID WHITE STRIPING
- 5B 4" SOLID YELLOW STRIPING
- 5C 4" SKIP DASH YELLOW STRIPING
- 6 BOLLARD MOUNTED SIGN
- 7 RETURNED CURB HANDICAP RAMP
- 8 SIDEWALK ACCESSIBLE RAMP
- 9 DETECTABLE WARNING DEVICE
- 10 CONCRETE SIDEWALK
- 11 CONCRETE SIDEWALK w/ CURB & GUTTER
- 12 ENTRY DOOR FROST SLAB DETAIL
- 13 CONCRETE BOLLARD
- 14 CONCRETE CURB & GUTTER
- 15 LANDSCAPE & IRRIGATION PROTECTOR
- 16 TYPICAL HMAC PAVEMENT SECTION
- 17 CONCRETE PAVEMENT DRIVE-THRU LANE
- 18 CONCRETE APRON AT TRASH ENCLOSURE
- 19 CONCRETE PAVEMENT SECTIONS
- 20 DRIVE-THRU PLAN - FLUSH WITH FFE
- 21 DRIVE-THRU ISOMETRIC
- 22 DRIVE-THRU ORDER POINT ISLAND
- 23 MENU BOARD LOOP DETECTION SYSTEM
- 24 SCREENED REFUSE ENCLOSURE (REFER TO ARCH PLANS FOR ADDITIONAL DETAILS)
- 25 DRIVE-THRU CLEARANCE BAR (REFER TO SIGNAGE PACKAGE)
- 26 GREASE TRAP
- 27 PROPOSED TRANSFORMER
- 28 BIKE RACK
- 29 LANDSCAPED AREA
- 30 TYPICAL LOCATION FOR OUTDOOR TABLES
- 31 FREE-STANDING ORDER POINT CANOPY
- 32 FREE-STANDING OUTSIDE MEAL DELIVERY CANOPY
- 33 WATER METER

SIGN LEGEND

- \*\* CONTRACTOR TO REFER TO THE SIGNAGE PACKAGE FOR PLACEMENT AND SPECIFICATIONS OF ALL SIGNS \*\*
- A HANDICAP PARKING SIGN (SEE SIGNAGE PACKAGE) R7-8; 12" X 18" (TYP.)
  - B HANDICAP PARKING FINE SIGN (SEE SIGNAGE PACKAGE) 6" X 12" (TYP.)
  - C "VAN ACCESSIBLE" SIGN (SEE SIGNAGE PACKAGE) R7-8P; 6" X 12" (TYP.)
  - D "DO NOT ENTER" SIGN (SEE SIGNAGE PACKAGE) R5-1; 24" X 24" (TYP.)
  - E STOP SIGN (SEE SIGNAGE PACKAGE) R1-1; 30" X 30" (TYP.)
  - F CFA PEDESTRIAN CROSSING SIGN (SEE SIGNAGE PACKAGE)
  - G FLAG POLE (SEE SIGNAGE PACKAGE)
  - H CFA MONUMENT OR PYLON SIGN
  - I DIGITAL DRIVE-THRU MENU BOARDS

SITE DATA	
PARKING FORMULA:	4 SPACES / 1000 GROSS FLOOR AREA
REQUIRED PARKING SPACES:	41(2,625 S.F. / 1000) = 11
PROVIDED PARKING SPACES:	43
BLDG S.F.:	2,625 S.F.
PARCEL AREA:	1.35 A.C.
REQUIRED BIKE SPACES:	2 (1 SPACE FOR EVERY 25 PARKING SPACES)
PROVIDED BIKE SPACES:	4
PARKING STALL SIZE:	9' X 19'
ACCESS AISLE WIDTH:	25'



PRELIMINARY SITE PLAN

**CHICK-FIL-A**  
**GARTRELL**  
7495 S GARTRELL RD  
AURORA, CO 80016

**FSR#5537**

BUILDING TYPE / SIZE: P12 LS LRG  
RELEASE: V.X.YY.MM

REVISION SCHEDULE		
NO.	DATE	DESCRIPTION

CONSULTANT PROJECT #	65121567
PRINTED FOR	REVIEW
DATE	7/17/2023
DRAWN BY	ITR/LDV

SHEET  
C2.0 SITE PLAN

SHEET NUMBER