Traffic Impact Study

Peach Ranch

Colorado Springs, Colorado

Prepared for:

Toll Brothers, Inc

Kimley»Horn

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

Peach Ranch

Colorado Springs, Colorado

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1.0 EXECUTIVE SUMMARY

Peach Ranch is proposed to be located southeast of the Research Parkway and Tutt Boulevard intersection in Colorado Springs, Colorado. Specifically, the project will be located on the northwest corner of the Williams Run Drive and Tutt Boulevard intersection. The project is proposed to include residential single-family homes. It is expected that the project will be completed in the next several years. Therefore, analysis was conducted for the 2028 short-term buildout horizon as well as the 2045 long-term twenty-year planning horizon.

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

- Research Parkway and Tutt Boulevard
- Cowpoke Road and Tutt Boulevard

In addition, the two proposed full movement access intersections along Tutt Boulevard were evaluated.

Regional access to the site will be provided by Powers Boulevard while primary access will be provided by Research Parkway and Woodmen Road. Direct access will be provided by two proposed full movement accesses along Tutt Boulevard. The south access along Tutt Boulevard is proposed to align with Williams Run Drive. As part of the project, Tutt Boulevard will be extended from east of Stony Creek Drive to north of Williams Run Drive and will provide through connectivity for the surrounding area.

Peach Ranch is expected to generate approximately 1,512 weekday daily trips, with 111 of these trips occurring during the morning peak hour and 150 of these trips occurring during the afternoon peak hour.

Based on the analysis presented in this report, Kimley-Horn believes Peach Ranch 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:

- With development of this project, Tutt Boulevard will be extended from east of Stony Creek Drive to north of Williams Run Drive and will provide through connectivity for the surrounding area. Tutt Boulevard currently provides two through lanes in each direction plus a center two-way left turn lane on the north limits of the project at Stony Creek Drive. Tutt Boulevard provides one through lane in each direction at the south limits of the project at Williams Run Drive. Tutt Boulevard is not anticipated to be a primary through corridor in the area when it is extended, and traffic volume projections do not warrant two through lanes in each direction. Therefore, it is recommended that the extended segment of Tutt Boulevard provide a three-lane roadway section with one through lane in each direction plus a center median designated for left turn movements at full movement intersections.

- With completion of the Peach Ranch project, two access intersections are proposed along Tutt Boulevard to serve the residential development. The north access intersection along Tutt Boulevard is proposed to provide access on the northeast and southwest sides of Tutt Boulevard. The south access is proposed to align with the existing east leg of Williams Run Drive at the intersection with Tutt Boulevard. It is recommended that R1-1 “STOP” signs be installed on the exiting approaches of the two project access intersections.

- Any onsite or offsite improvements should be incorporated into the Civil Drawings and conform to standards of the City of Colorado Springs and the Manual on Uniform Traffic Control Devices (MUTCD) – 11th Edition, 2023.

2.0 INTRODUCTION

Kimley-Horn has prepared this report to document the results of a Traffic Impact Study for Peach Ranch proposed to be located southeast of the Research Parkway and Tutt Boulevard intersection in Colorado Springs, Colorado. Specifically, the project will be located on the northwest corner of the Williams Run Drive and Tutt Boulevard intersection. A vicinity map illustrating the project development location is shown in **Figure 1**. Peach Ranch is proposed to include single-family housing. A conceptual site plan is attached in **Appendix A**. It is expected that the project will be completed in the next several years; therefore, analysis was conducted for the 2028 short-term buildout horizon as well as the 2045 long-term twenty-year planning horizon.

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

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FIGURE 1
PEACH RANCH
COLORADO SPRINGS, COLORADO
VICINITY MAP

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3.0 EXISTING AND FUTURE CONDITIONS

3.1 Existing Study Area

The existing site consists of vacant land. The site is surrounded by a mix of residential uses while single-family residences are located directly to the north and west of the site. Single family homes are currently under construction directly to the east of the site. The land directly south of the site is vacant while the extended area to the south includes commercial uses.

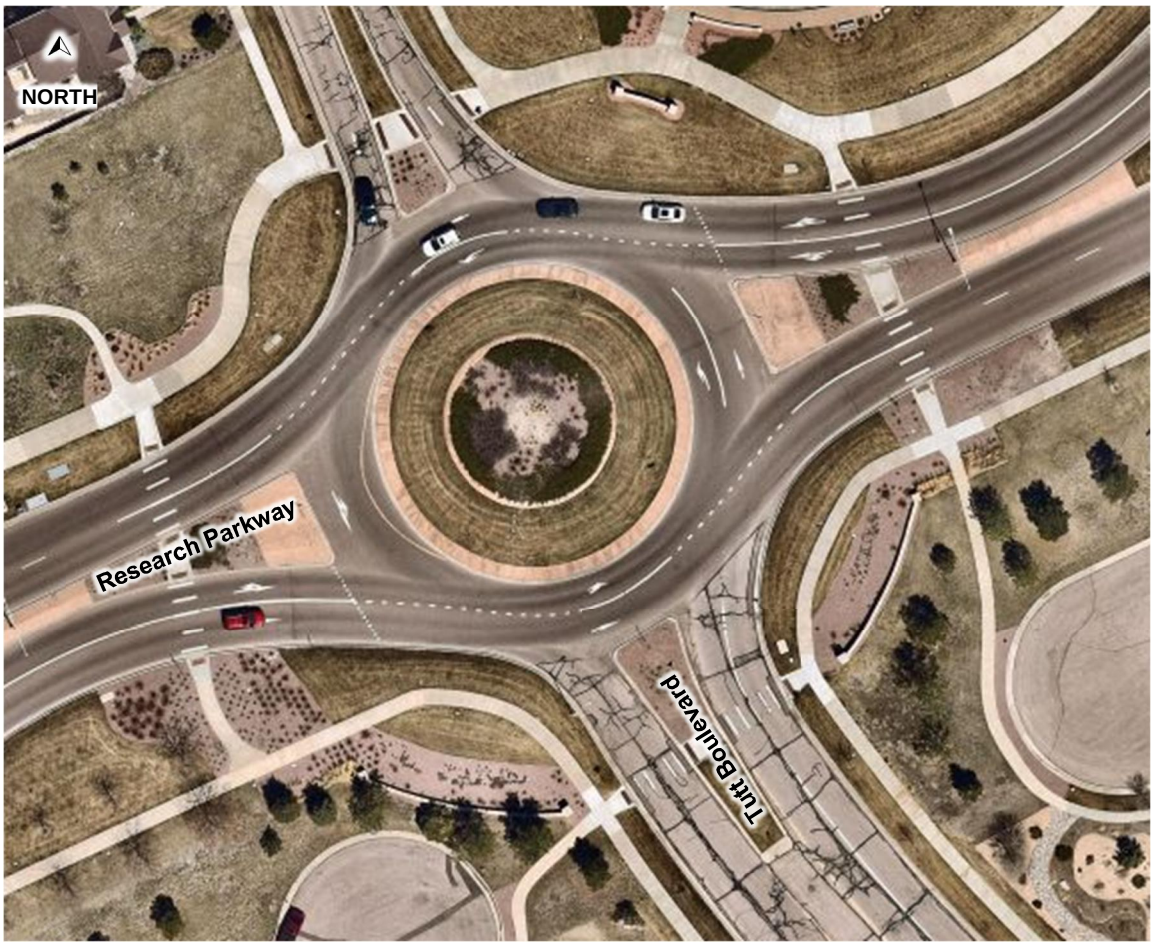
3.2 Existing Roadway Network

Research Parkway extends primarily east/west with two through lanes in each direction. The posted speed limit near the site is 35 miles per hour. The Metropolitan Area Planning Agency (MAPA) classifies Research Parkway as a “principal arterial.”

Tutt Boulevard primarily extends north/south in the surrounding area while the roadway extends southeast/northwest on the north and west side of the project with two through lanes in each direction and a posted speed limit 30 miles per hour. Tutt Boulevard terminates approximately 850 feet southeast of the Research Parkway and Tutt Boulevard intersection at the northwest limits of the project boundary and then resumes again in a north/south direction at the southeast limits of the project boundary. On the southeast side of the project, Tutt Boulevard becomes a north/south roadway with one through lane in each direction and a speed limit of 35 miles per hour in this segment. Tutt Boulevard provides two through lanes in each direction south of Cowpoke Road. MAPA classifies Tutt Boulevard as a “minor arterial” roadway. As part of the project, Tutt Boulevard will be constructed between to the two terminus points creating full through connectivity in the surrounding area.

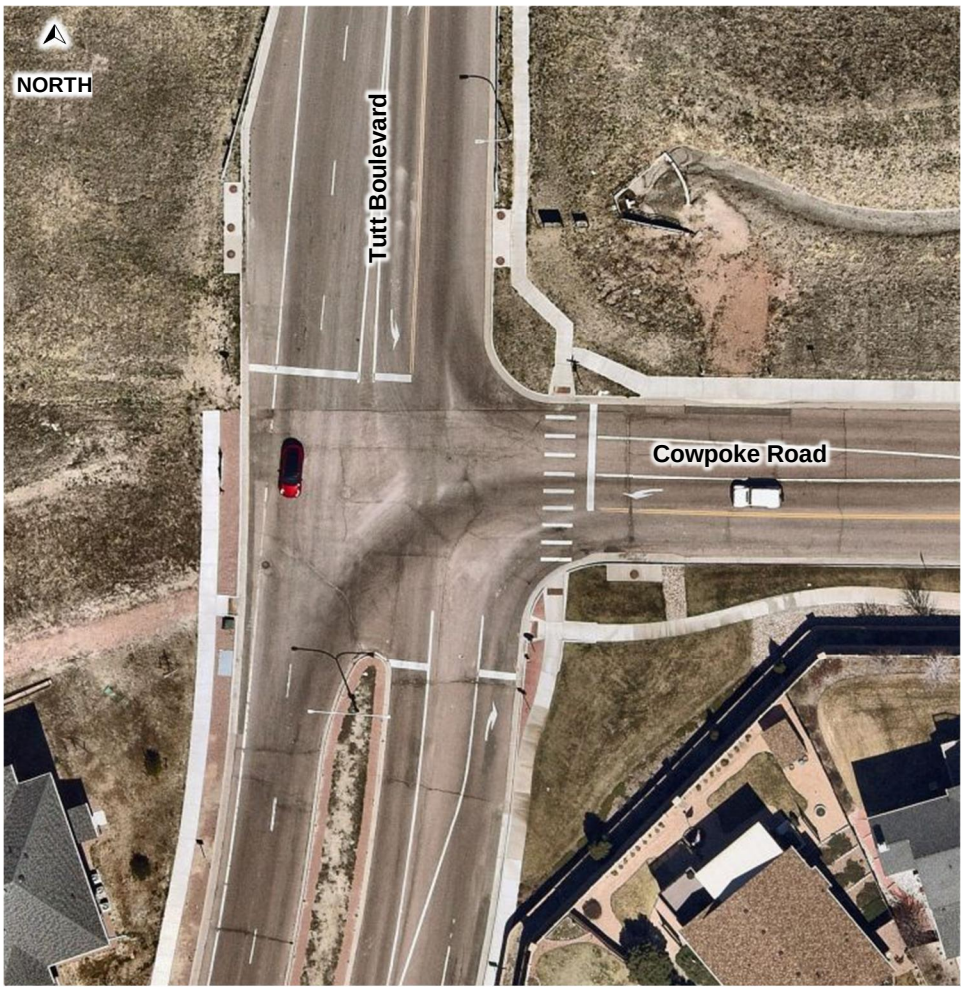
Cowpoke Road extends east/west with one through lane in each direction. The speed limit near the site is 35 miles per hour.

The roundabout intersection of Research Parkway and Tutt Boulevard operates with the east/west Research Parkway with two approach lanes in each direction. The northbound Tutt Boulevard has two approach lanes whereas the southbound Tutt Boulevard only provides one lane. An aerial photo of the existing intersection configuration is below (north is up - typical).



Research Parkway & Tutt Boulevard (#1)

The unsignalized ‘T’-intersection of Cowpoke Road and Tutt Boulevard operates with all-way stop control. The northbound approach provides a separate right turn lane and one through lane whereas the southbound approach provides two through lanes and one left turn lane on Tutt Boulevard. Of note, the northbound approach of Tutt Boulevard provides pavement that is 36 feet wide to accommodate a future through lane. The westbound approach on Cowpoke Road provides a separate left and right turn lane. An aerial photo of the existing intersection configuration is below.



Cowpoke Road and Tutt Boulevard (#2)

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

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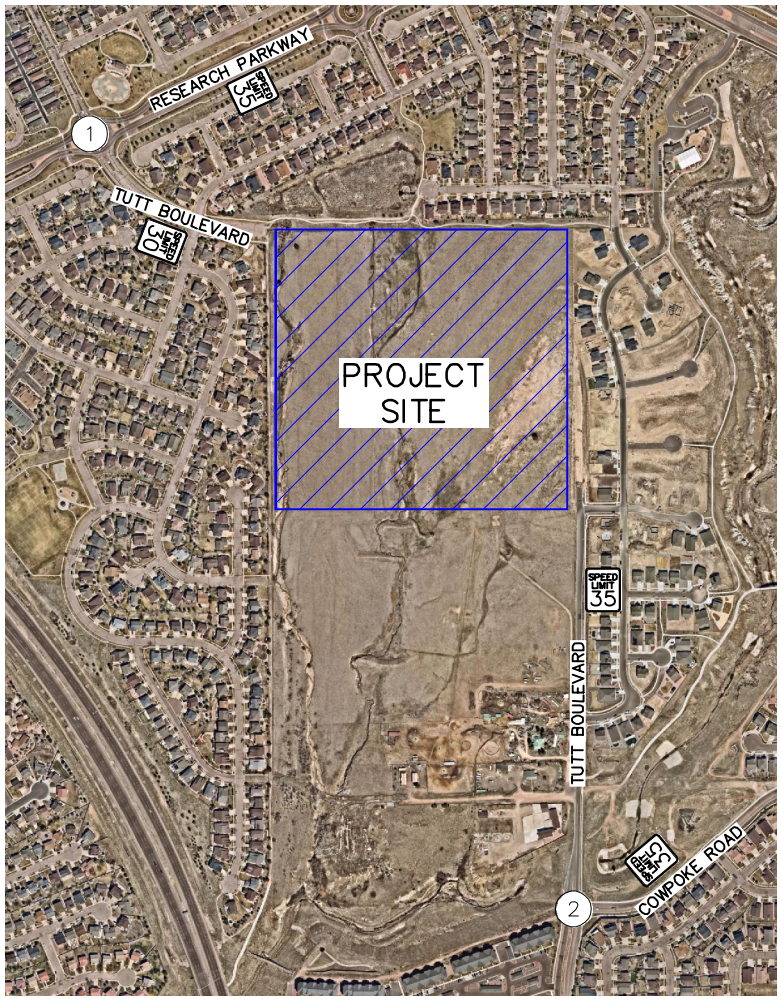

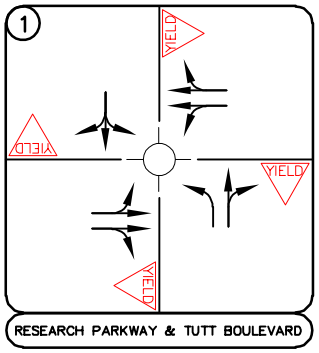

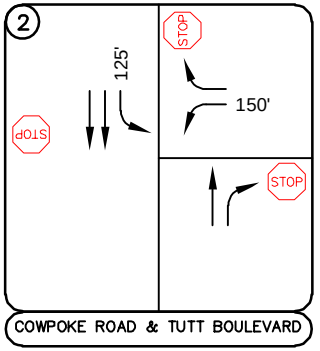

LEGEND

- X — Study Area Key Intersection
- Roundabout
- YIELD — Yield Controlled Approach
- STOP — Stop Controlled Approach
- SPEED LIMIT XX — Roadway Speed Limit
- 100' — Turn Lane Length (feet)

FIGURE 2
PEACH RANCH
COLORADO SPRINGS, COLORADO
EXISTING GEOMETRY AND CONTROL

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3.3 Existing Traffic Volumes

Existing turning movement counts were conducted at the study intersections on Wednesday, October 2, 2024 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. The existing intersection traffic volumes are shown in **Figure 3** with count sheets provided in **Appendix B**.

3.4 Unspecified Development Traffic Growth

According to information provided on the website for the Colorado Department of Transportation (CDOT), the 20-year growth factor along SH-21 (Powers Boulevard) in the vicinity of the site is 1.3. The 20-year growth factor equates to annual growth rate of 1.32 percent. Traffic information from the CDOT Online Transportation Information System (OTIS) website is included in **Appendix C**. This annual growth rate was used to estimate near-term 2028 and long-term 2045 traffic volume projections at the key intersections. Further, existing traffic patterns were rerouted to account for the future through connectivity of Tutt Boulevard. To provide a conservative analysis, the rerouted traffic volumes were not removed from any existing movements and conservatively added to future movements that will occur because of the extension of Tutt Boulevard. Tutt Boulevard is not anticipated to be a primary through corridor for extended travel; however, through volumes were added to Tutt Boulevard to account for the through connectivity. Background traffic volumes for 2028 and 2045 are shown in **Figures 4** and **5**, respectively.

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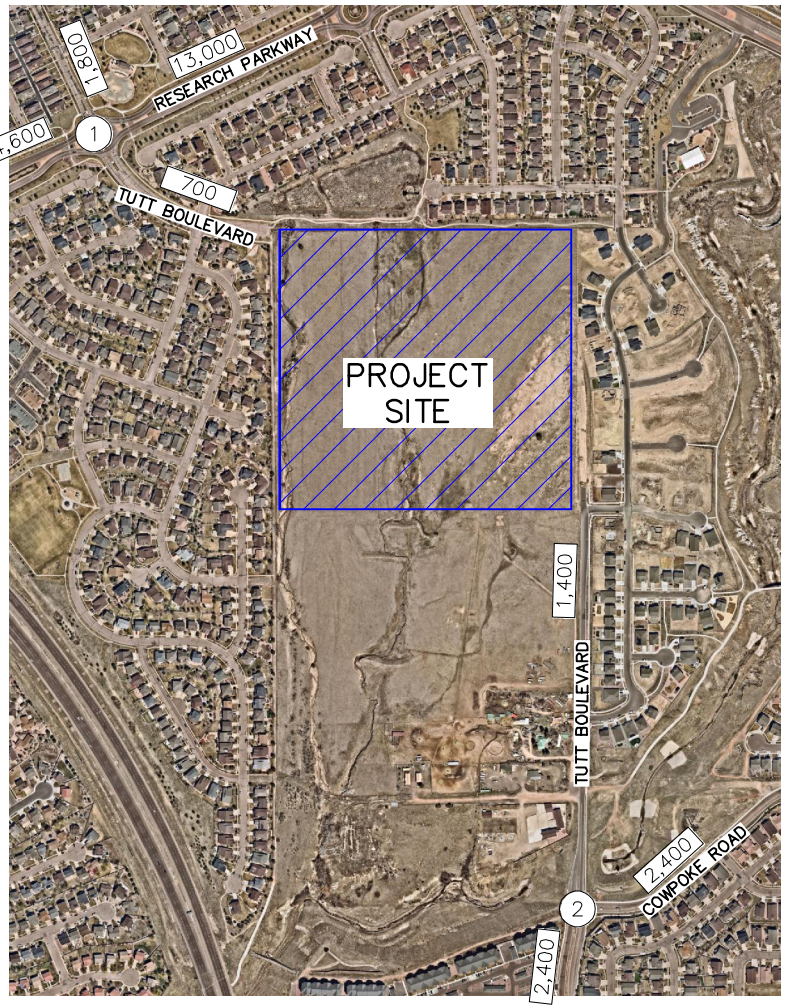
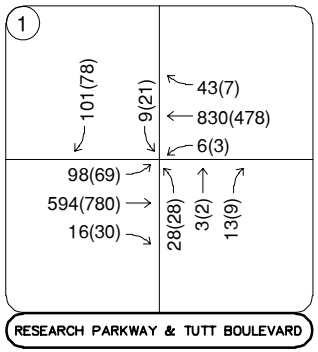
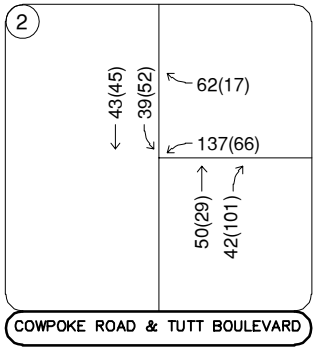




Wed, Oct 2, 2024
7:30 to 8:30AM
(5:00 to 6:00PM)



Wed, Oct 2, 2024
7:30 to 8:30AM
(4:45 to 5:45PM)

LEGEND

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

FIGURE 3
PEACH RANCH
COLORADO SPRINGS, COLORADO
2024 EXISTING TRAFFIC VOLUMES

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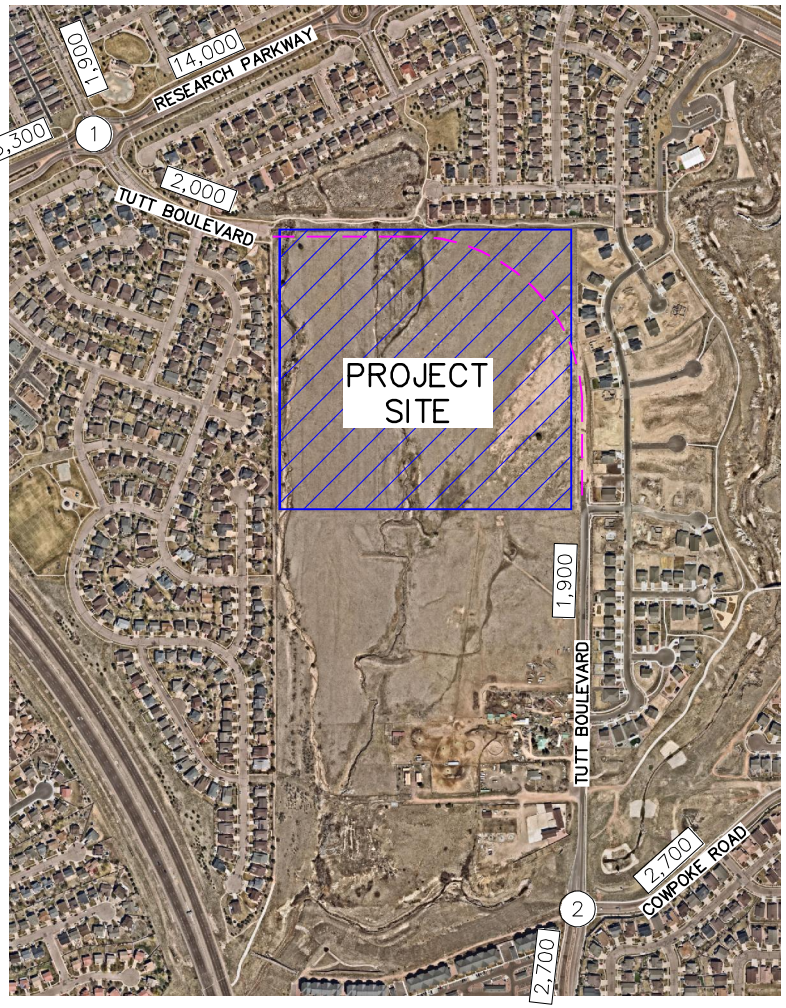

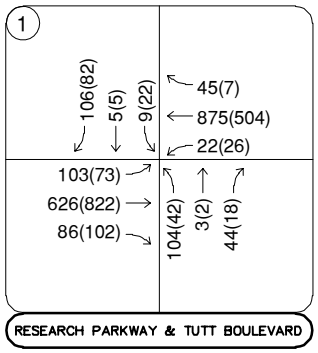

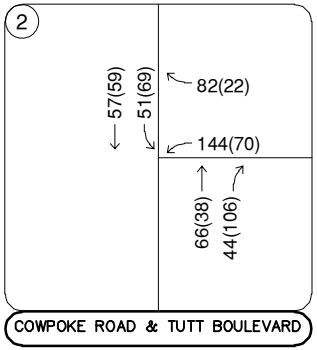

LEGEND

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

FIGURE 4
PEACH RANCH
COLORADO SPRINGS, COLORADO
2028 BACKGROUND TRAFFIC VOLUMES

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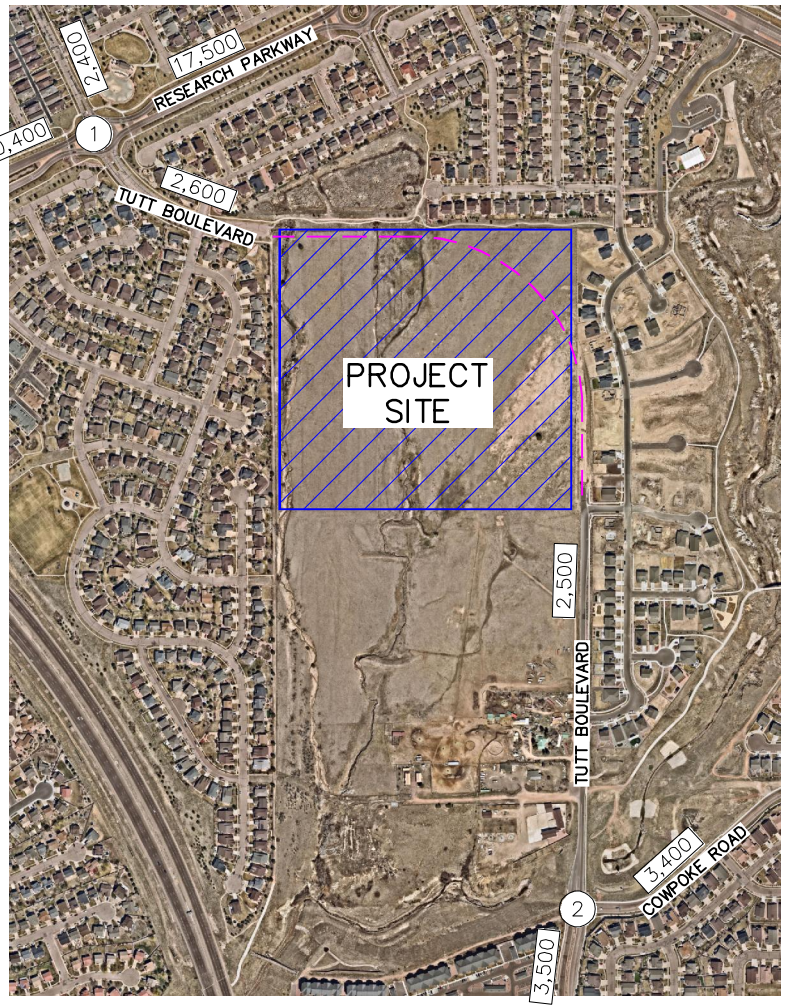

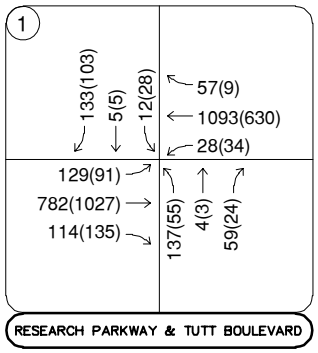

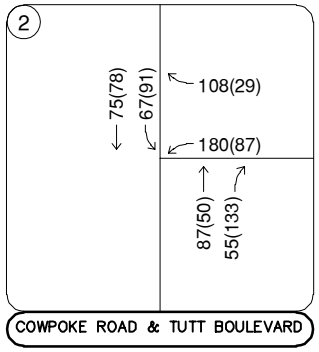

LEGEND

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

FIGURE 5
PEACH RANCH
COLORADO SPRINGS, COLORADO
2045 BACKGROUND TRAFFIC VOLUMES

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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*[1] 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 fitted curve equations that apply to Single-Family Detached Housing (ITE Land Use Code 210) for traffic associated with the development.

Peach Ranch is expected to generate approximately 1,512 weekday daily trips, with 111 of these trips occurring during the morning peak hour and 150 of these trips occurring during the afternoon peak hour. Calculations were based on the procedure and information provided in the ITE *Trip Generation Manual, 11th Edition – Volume 1: User's Guide and Handbook*, 2021. **Table 1** summarizes the estimated trip generation for the site. The trip generation worksheets are included in **Appendix D**.

Table 1 – Peach Ranch Traffic Generation

Land Use and Size	Weekday Vehicle Trips						
	Daily	AM Peak Hour			PM Peak Hour		
		In	Out	Total	In	Out	Total
Single-Family Detached Housing (ITE 210) – 155 Dwelling Units	1,512	28	83	111	95	55	150

4.2 Trip Distribution

Distribution of site traffic on the street system was based on the area street system characteristics, existing traffic patterns, surrounding employment, school, and attraction 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**.

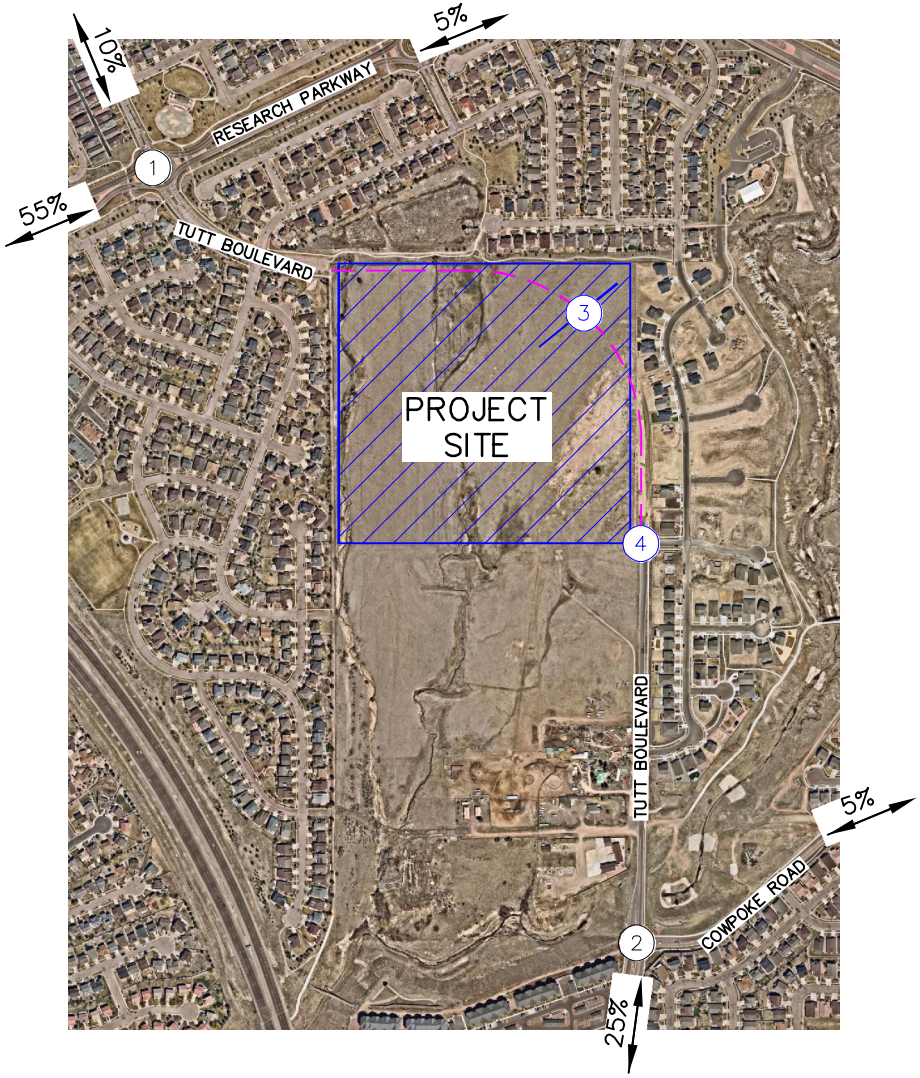
[1] Institute of Transportation Engineers, *Trip Generation Manual*, Eleventh Edition, Washington DC, 2021.

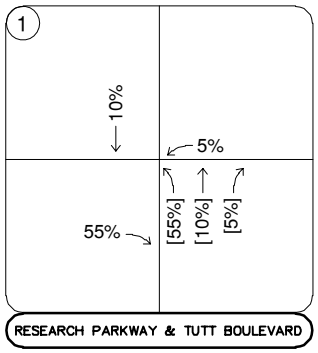
4.3 Traffic Assignment

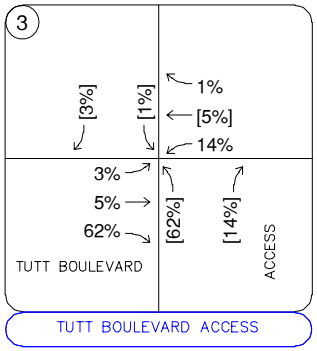
Peach Ranch traffic assignment was obtained by applying the project trip distribution to the estimated traffic generation of the development shown in **Table 1**. Traffic assignment is shown in **Figure 7.**

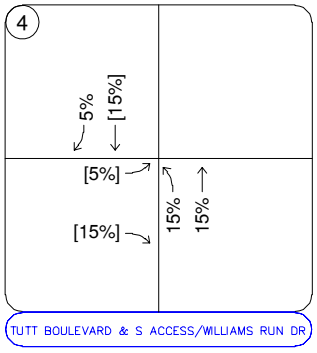
4.4 Total (Background Plus Project) Traffic

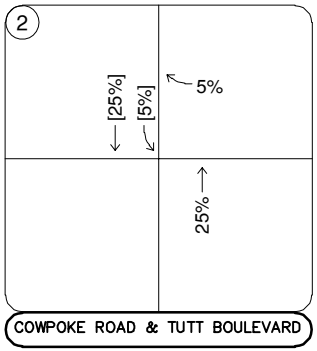
Site traffic volumes were added to the background volumes to represent estimated traffic conditions for the short-term 2028 buildout horizon and long-term 2045 twenty-year planning horizon. These total traffic volumes for the study area are illustrated for the 2028 and 2045 horizon years in **Figures 8** and **9**, respectively.











LEGEND

(X) Study Area Key Intersection

(X) Project Access Intersection

XX% External Trip Distribution Percentage

XX%[XX%] Entering[Exiting] Trip Distribution Percentage

FIGURE 6
PEACH RANCH
COLORADO SPRINGS, COLORADO
TRIP DISTRIBUTION

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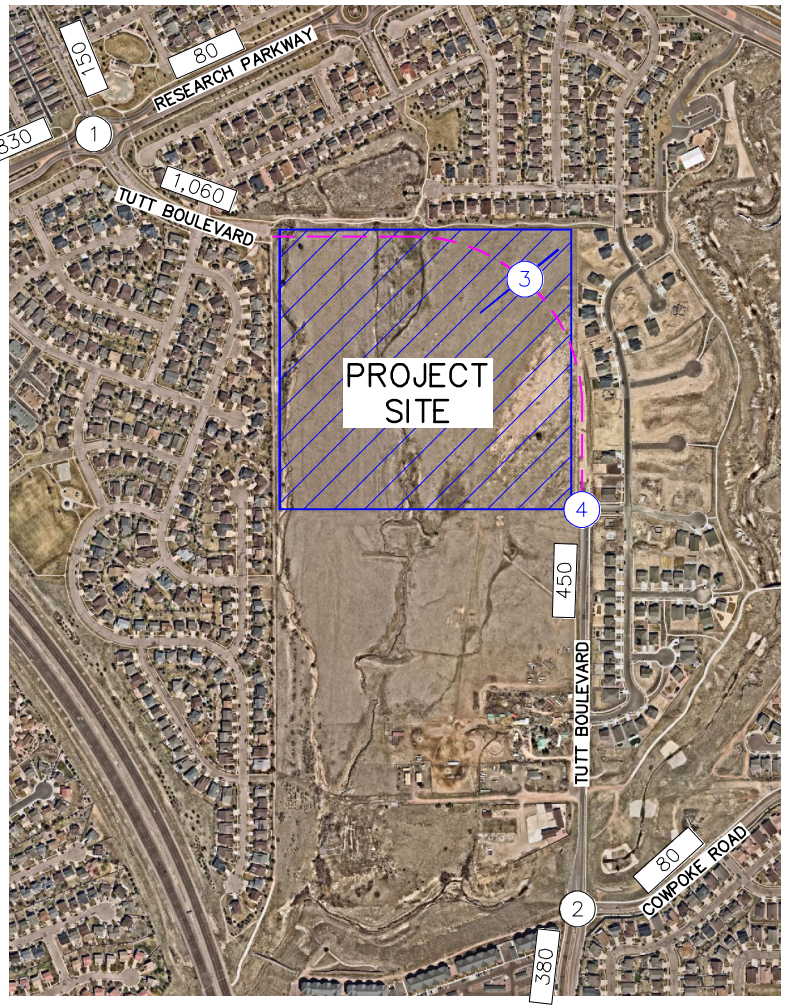

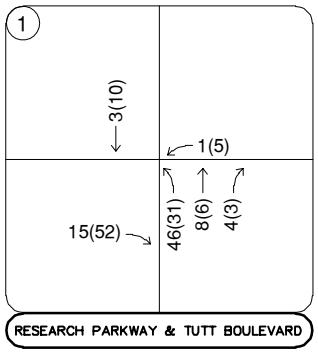

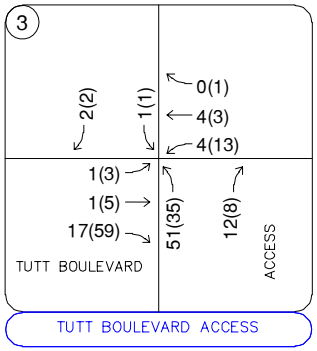

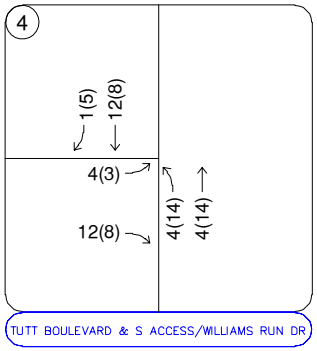

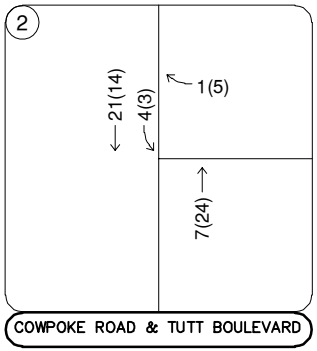

LEGEND

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 7
PEACH RANCH
COLORADO SPRINGS, COLORADO
TRAFFIC ASSIGNMENT

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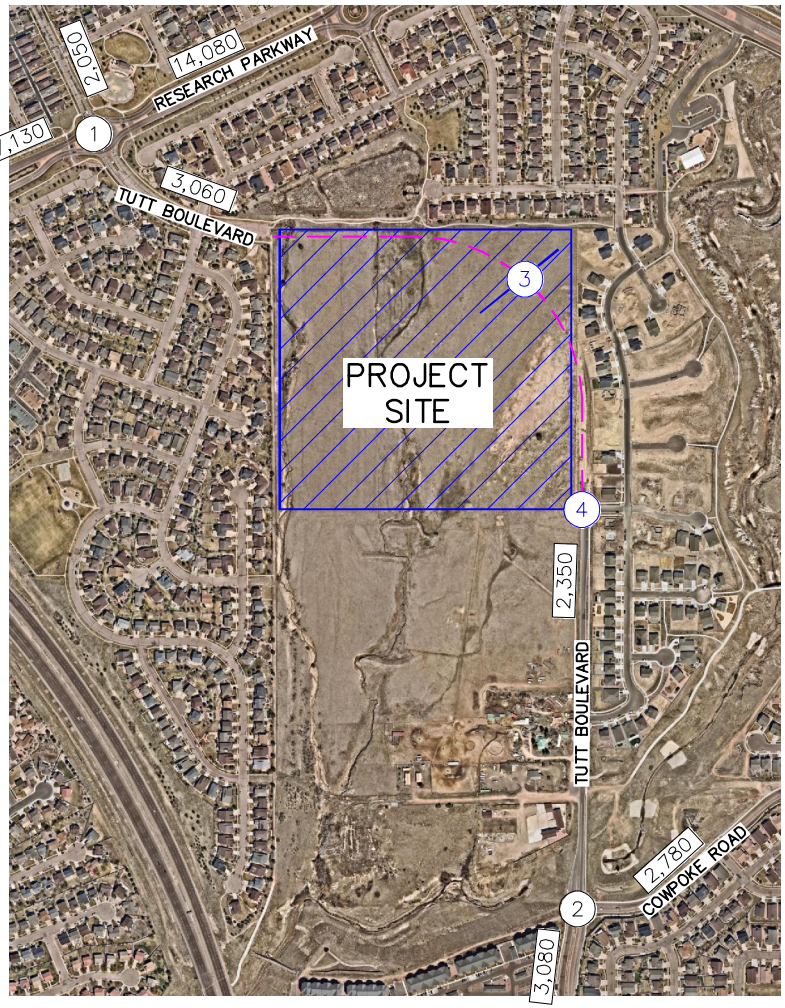

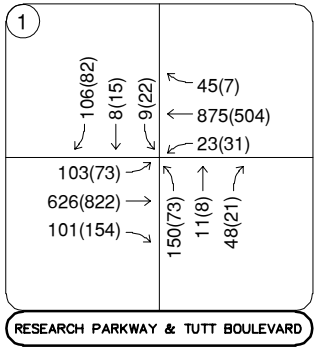

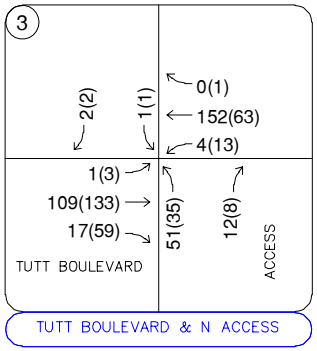

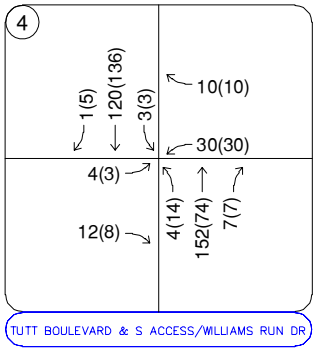

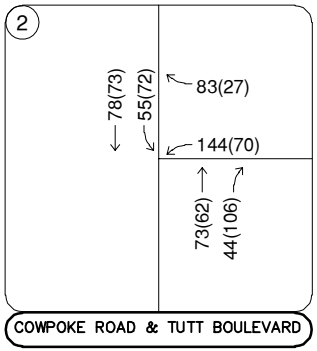

LEGEND

(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 8
PEACH RANCH
COLORADO SPRINGS, COLORADO
2028 TOTAL TRAFFIC VOLUMES

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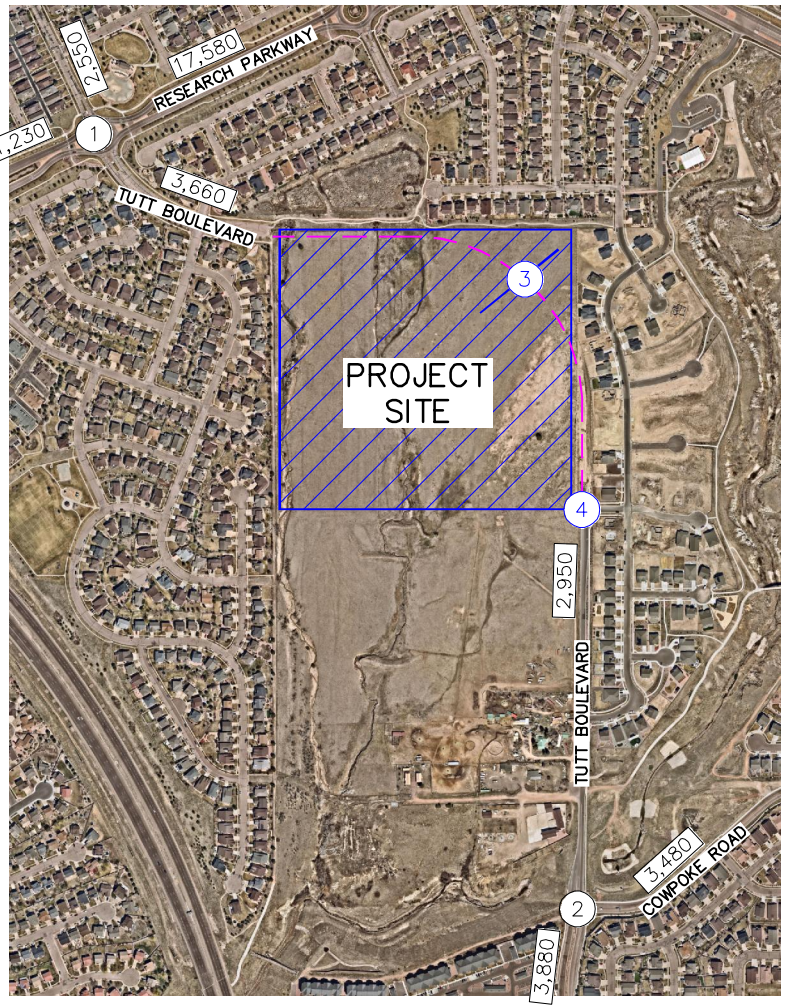

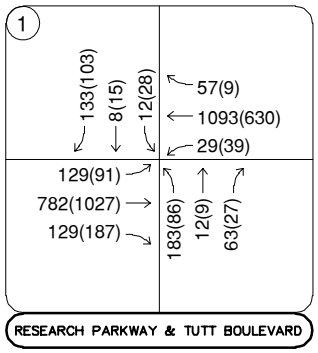

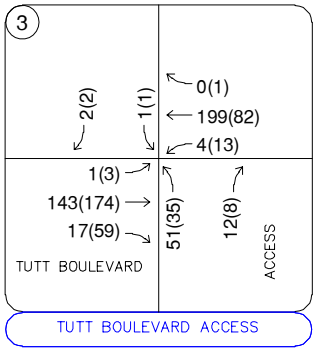

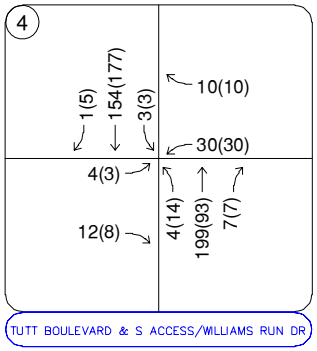

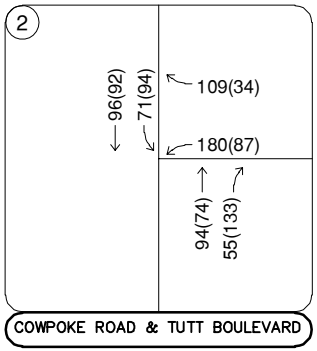

LEGEND

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

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FIGURE 9
PEACH RANCH
COLORADO SPRINGS, COLORADO
2045 TOTAL TRAFFIC VOLUMES

Kimley-Horn's analysis of traffic operations in the site vicinity was conducted to determine potential capacity deficiencies in the 2028 and 2045 development horizons at the identified key intersections. The acknowledged source for determining overall capacity is the *Highway Capacity Manual (HCM)*[2].

5.1 Analysis Methodology

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

Table 2 – Level of Service Definitions

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

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

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

[2] Transportation Research Board, *Highway Capacity Manual*, Sixth Edition, Washington DC, 2016.

5.2 Key Intersection Operational Analysis

Calculations for the operational level of service at the key intersections for the study area are provided in **Appendix E**. The existing year analysis is based on the lane geometry and intersection control shown in **Figure 2.** Existing peak hour factors were utilized in the analysis. The existing heavy vehicle percentages obtained from the turning movement counts were also used in each horizon year. Synchro traffic analysis software was used to analyze unsignalized key intersections for HCM level of service. Sidra traffic analysis software was used to evaluate the roundabout intersection of Research Parkway and Tutt Boulevard.

Research Parkway and Tutt Boulevard

The roundabout intersection of Research Parkway and Tutt Boulevard operates with the east/west Research Parkway with two approach lanes in each direction. The northbound Tutt Boulevard has two approach lanes whereas the southbound Tutt Boulevard only provides one lane. The intersection movements operate acceptably at LOS A during both peak hours under existing conditions. With project traffic, all movements are anticipated to continue operating LOS B or better throughout the 2045 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 3** provides the results of the LOS analysis conducted at this intersection.

Table 3 – Research Parkway & Tutt Boulevard LOS Results

Scenario	AM Peak Hour		PM Peak Hour	
	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
2024 Existing	**6.1**	**A**	**5.3**	**A**
Northbound Approach	5.9	A	7.0	A
Westbound Approach	7.0	A	4.8	A
Southbound Approach	8.9	A	5.6	A
Eastbound Approach	4.7	A	5.5	A
2028 Background	**7.3**	**A**	**6.1**	**A**
Northbound Approach	7.4	A	7.7	A
Westbound Approach	8.5	A	5.1	A
Southbound Approach	11.0	A	6.2	A
Eastbound Approach	5.4	A	6.5	A
2028 Total	**7.9**	**A**	**6.6**	**A**
Northbound Approach	8.4	A	8.5	A
Westbound Approach	9.3	A	5.4	A
Southbound Approach	11.9	B	6.7	A
Eastbound Approach	5.6	A	7.0	A
2045 Background	**10.1**	**B**	**7.6**	**A**
Northbound Approach	10.2	B	10.5	B
Westbound Approach	12.2	B	6.1	A

Scenario	AM Peak Hour		PM Peak Hour	
	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
Southbound Approach	18.3	C	8.0	A
Eastbound Approach	6.5	A	8.1	A
2045 Total	**11.2**	**B**	**8.2**	**A**
Northbound Approach	11.9	B	11.8	B
Westbound Approach	13.9	B	6.4	A
Southbound Approach	20.2	C	8.6	A
Eastbound Approach	6.6	A	8.8	A

Cowpoke Road and Tutt Boulevard

The unsignalized 'T'-intersection of Cowpoke Road and Tutt Boulevard operates with stop control in all directions. The intersection movements operate acceptably at LOS A 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 2045 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 – Cowpoke Road & Tutt Boulevard LOS Results

Scenario	AM Peak Hour		PM Peak Hour	
	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
2024 Existing	**7.9**	**A**	**8.1**	**A**
Westbound Approach	8.2	A	8.7	A
Northbound Approach	7.5	A	7.8	A
Southbound Approach	7.6	A	8.0	A
2028 Background	**9.0**	**A**	**8.3**	**A**
Westbound Approach	9.5	A	8.9	A
Northbound Approach	8.6	A	8.0	A
Southbound Approach	8.5	A	8.3	A
2028 Total	**9.0**	**A**	**8.4**	**A**
Westbound Approach	9.6	A	9.0	A
Northbound Approach	8.7	A	8.2	A
Southbound Approach	8.4	A	8.3	A
2045 Background	**9.8**	**A**	**8.8**	**A**
Westbound Approach	10.4	B	9.4	A
Northbound Approach	9.2	A	8.5	A
Southbound Approach	9.0	A	8.7	A
2045 Total	**9.9**	**A**	**8.9**	**A**
Westbound Approach	10.6	B	9.5	A
Northbound Approach	9.4	A	8.7	A
Southbound Approach	9.0	A	8.8	A

Project Access Intersections & Tutt Boulevard Extension

With development of this project, Tutt Boulevard will be extended from east of Stony Creek Drive to north of Williams Run Drive and will provide through connectivity for the surrounding area. Tutt Boulevard currently provides two through lanes in each direction plus a center two-way left turn lane on the north limits of the project at Stony Creek Drive. Tutt Boulevard provides one through lane in each direction at the south limits of the project at Williams Run Drive. Tutt Boulevard is not anticipated to be a primary through corridor in the area when it is extended, and traffic volume projections do not warrant two through lanes in each direction. Therefore, it is recommended that the extended segment of Tutt Boulevard provide a three-lane roadway section with one through lane in each direction plus a center median designated for left turn movements at full movement intersections.

With completion of the Peach Ranch project, two access intersections are proposed along Tutt Boulevard to serve the residential development. The north access intersection along Tutt Boulevard is proposed to provide access on the northeast and southwest sides of Tutt Boulevard. The south access is proposed to align with the existing east leg of Williams Run Drive at the intersection with Tutt Boulevard. It is recommended that R1-1 “STOP” signs be installed on the exiting approaches of the two project access intersections. **Table 5** provides the results of the level of service for the project access intersections. As shown in the table, the project access intersections are anticipated to have all movements operating with acceptable LOS B or better during the peak hours in both the buildout year 2028 and the 2045 long-term horizons.

Table 5 – Project Access Intersections Level of Service Results

Intersection	2028 Total				2045 Total			
	AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
	Delay (sec/ veh)	LOS	Delay (sec/ veh)	LOS	Delay (sec/ veh)	LOS	Delay (sec/ veh)	LOS
Tutt Blvd North Access	**2.1**	**A**	**1.9**	**A**	**1.9**	**A**	**1.7**	**A**
Eastbound Left	7.5	A	7.4	A	7.7	A	7.4	A
Westbound Left	7.5	A	7.7	A	7.6	A	7.8	A
Northbound Approach	10.9	B	10.6	B	11.7	B	11.2	B
Southbound Approach	9.6	A	9.2	A	10.1	B	9.4	A
Tutt Blvd South Access & Williams Run Drive	**1.8**	**A**	**2.2**	**A**	**1.6**	**A**	**1.9**	**A**
Eastbound Approach	9.5	A	9.5	A	9.8	A	9.8	A
Westbound Approach	10.7	B	10.3	B	11.5	B	10.8	B
Northbound Left	7.5	A	7.5	A	7.6	A	7.6	A
Southbound Left	7.6	A	7.4	A	7.7	A	7.4	A

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 95th percentile queue lengths. Results are shown in the following **Table 6** with calculations provided within the level of service operational sheets of **Appendix E**.

Table 6 – Turn Lane Queuing Analysis Results

Intersection Turn Lane	Existing Turn Lane Length (feet)	2028 Calculated Queue (feet)	2028 Recommended Length (feet)	2045 Calculated Queue (feet)	2045 Recommended Length (feet)
Cowpoke Rd & Tutt Blvd					
Southbound Left	125’	25’	125’	25’	125’
Westbound Left	150’	25’	150’	50’	150’
Tutt Blvd North Access					
Eastbound Left	DNE	25’	**TWLTL**	25’	TWLTL
Westbound Left	DNE	25’	**TWLTL**	25’	TWLTL
Tutt Blvd South Access & Williams Run Dr					
Northbound Left	DNE	25’	**TWLTL**	25’	TWLTL
Southbound Left	DNE	25’	**TWLTL**	25’	TWLTL

DNE = Does Not Exist; **Blue** Text = Recommendation; TWLTL = Two way left turn lane

Vehicle queues are anticipated to remain within the existing or recommended turn lane lengths throughout the 2045 horizon.

5.4 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 10**.

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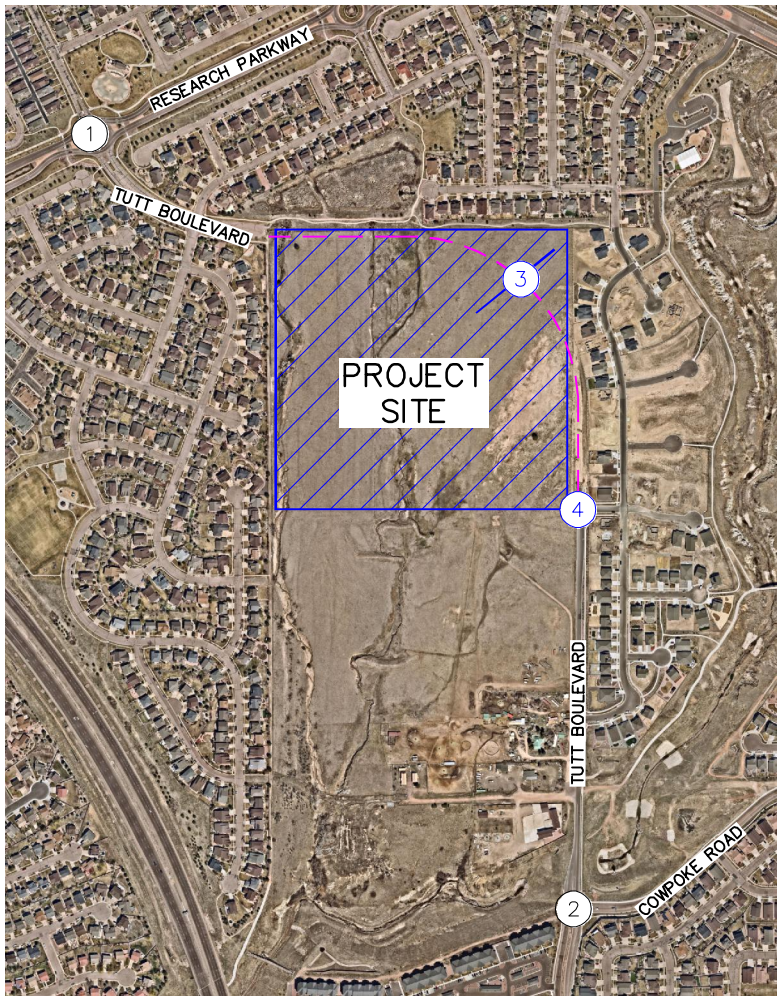
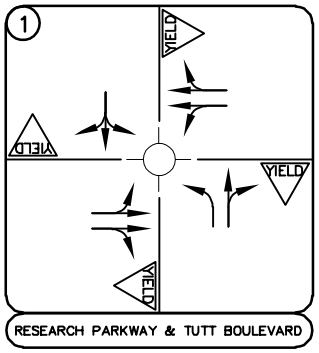
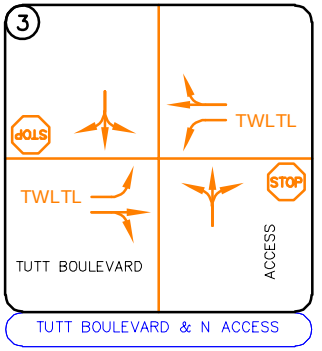
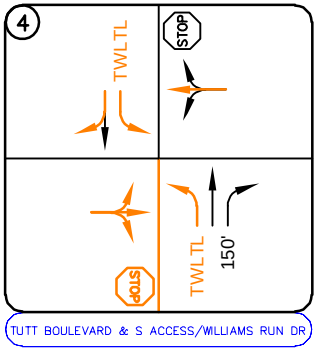
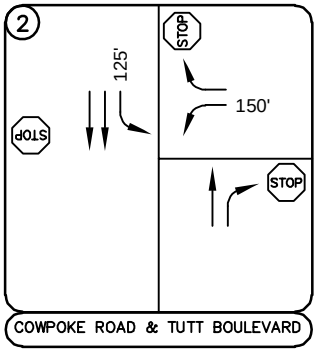










LEGEND

- Study Area Key Intersection
- Project Access Intersection
- Roundabout
- Yield Controlled Approach
- Stop Controlled Approach
- Improvement
- TWLTL — Two Way Left Turn Lane
- 100' Turn Lane Length (feet)

FIGURE 10
PEACH RANCH
COLORADO SPRINGS, COLORADO
RECOMMENDED GEOMETRY AND CONTROL

Kimley»Horn

6.0 CONCLUSIONS AND RECOMMENDATIONS

Based on the analysis presented in this report, Kimley-Horn believes Peach Ranch 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:

- With development of this project, Tutt Boulevard will be extended from east of Stony Creek Drive to north of Williams Run Drive and will provide through connectivity for the surrounding area. Tutt Boulevard currently provides two through lanes in each direction plus a center two-way left turn lane on the north limits of the project at Stony Creek Drive. Tutt Boulevard provides one through lane in each direction at the south limits of the project at Williams Run Drive. Tutt Boulevard is not anticipated to be a primary through corridor in the area when it is extended, and traffic volume projections do not warrant two through lanes in each direction. Therefore, it is recommended that the extended segment of Tutt Boulevard provide a three-lane roadway section with one through lane in each direction plus a center median designated for left turn movements at full movement intersections.

- With completion of the Peach Ranch project, two access intersections are proposed along Tutt Boulevard to serve the residential development. The north access intersection along Tutt Boulevard is proposed to provide access on the northeast and southwest sides of Tutt Boulevard. The south access is proposed to align with the existing east leg of Williams Run Drive at the intersection with Tutt Boulevard. It is recommended that R1-1 “STOP” signs be installed on the exiting approaches of the two project access intersections.

- Any onsite or offsite improvements should be incorporated into the Civil Drawings and conform to standards of the City of Colorado Springs and the Manual on Uniform Traffic Control Devices (MUTCD) – 11th Edition, 2023.

APPENDICES

APPENDIX A

Conceptual Site Plan

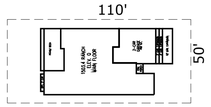
UNIT COUNT

SINGLE FAMILY #1 - 69 UNITS (44%)
SINGLE FAMILY #2- 86 UNITS (56%)

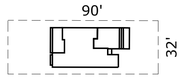
TOTAL UNITS - 155

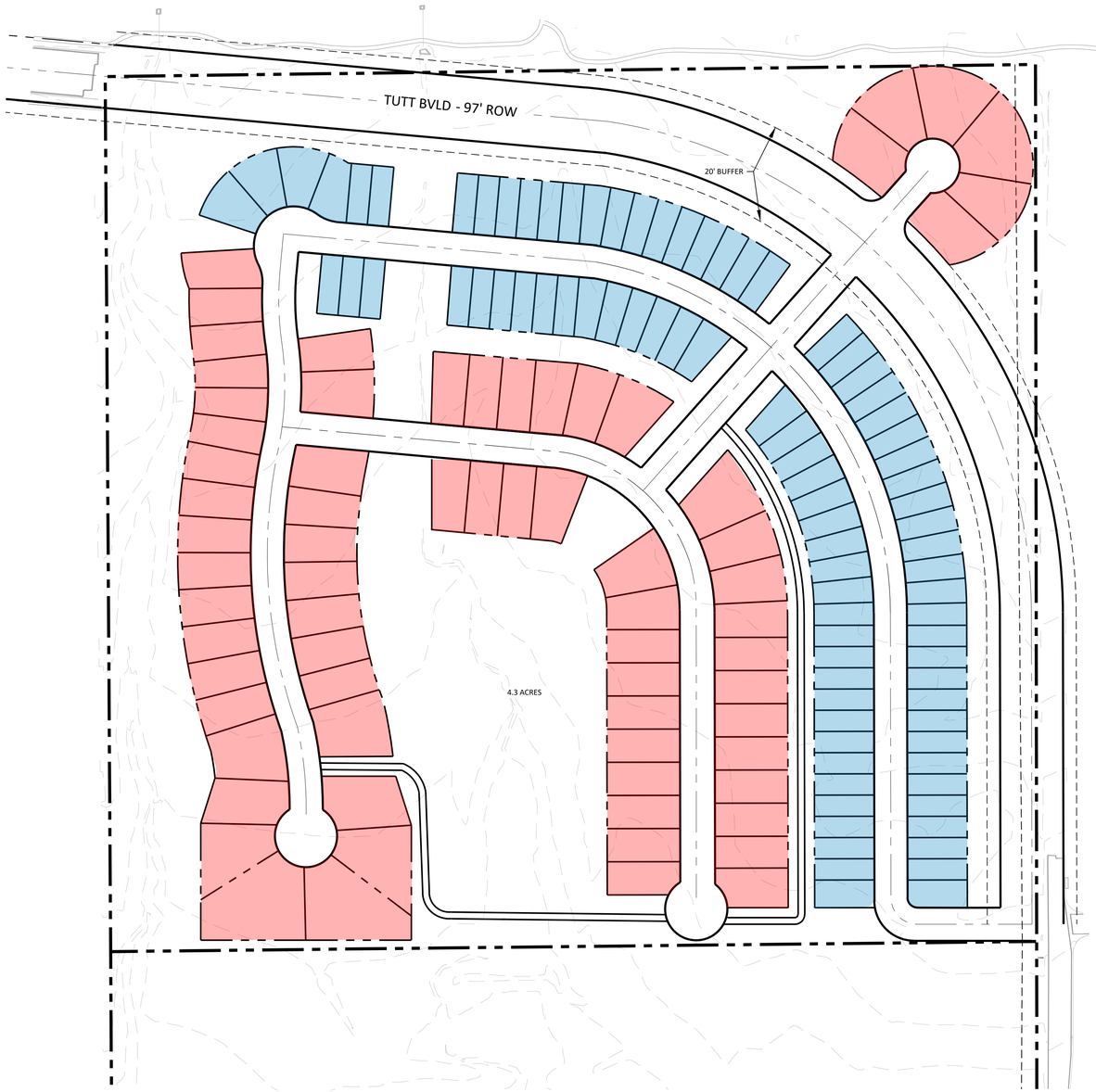
LOT TYPES

SINGLE FAMILY #1



SINGLE FAMILY #2





NORTH

0 50 100 200

SCALE: 1" = 100'

NES

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PLANNER / LANDSCAPE ARCHITECT

IN ASSOCIATION WITH

PEACOCK RANCH

CONCEPT PLAN

8254 CROWN LANE

PROJECT INFO

DATE: 08.13.2024
PROJECT MGR: C.LIEBER
PREPARED BY: J. SMITH

STAMP

ISSUE INFO

DATE:	BY:	DESCRIPTION:

ISSUE / REVISION

SHEET TITLE

CONCEPT PLAN

SHEET NUMBER

3

3 OF 3

PCAN FILE #

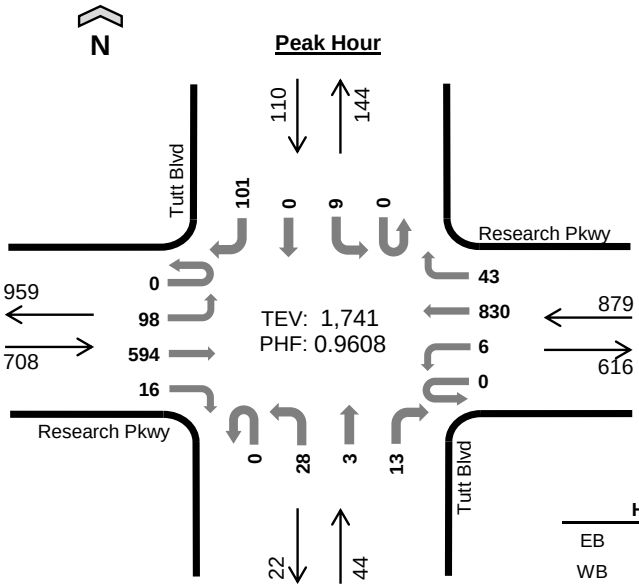
CPC #

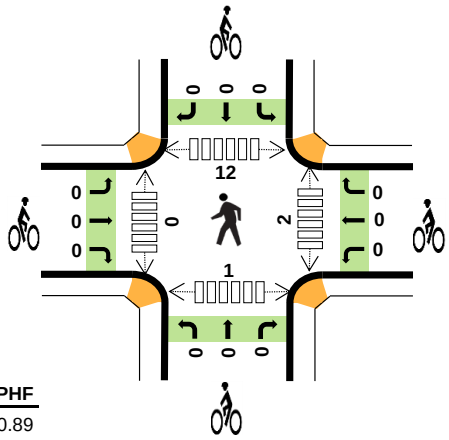
APPENDIX B

Intersection Count Sheets

Tutt Blvd
Research Pkwy

Date: 10/2/2024
Count Period: 7:00 AM to 9:00 AM
Peak Hour: 7:30 AM to 8:30 AM





	HV%	PHF
EB	4%	0.89
WB	2%	0.89
NB	9%	0.85
SB	2%	0.79
TOTAL	3%	0.96

Peak Hour Count Summaries

Peak Hour Interval Start		Research Pkwy Eastbound				Research Pkwy Westbound				Tutt Blvd Northbound				Tutt Blvd Southbound				15-min Total	Rolling Hour Total
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:30 AM		0	27	122	4	0	1	238	7	0	7	1	4	0	3	0	22	436	0
7:45 AM		0	23	157	2	0	2	170	15	0	7	1	5	0	2	0	33	417	0
8:00 AM		0	39	156	3	0	3	200	20	0	9	1	2	0	2	0	18	453	0
8:15 AM		0	9	159	7	0	0	222	1	0	5	0	2	0	2	0	28	435	1,741
Pk Hr	All	0	98	594	16	0	6	830	43	0	28	3	13	0	9	0	101	1,741	
	HV	0	2	21	8	0	1	11	2	0	4	0	0	0	1	0	1	51	
	HV%	-	2%	4%	50%	-	17%	1%	5%	-	14%	0%	0%	-	11%	-	1%	3%	

Note: For complete count summary (all intervals), see following pages.
*** Heavy Vehicle Classifications include FHWA Classes 4-13.*
*** Count Summaries 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	E	W	N	S	Total
7:30 AM	7	5	0	1	*13*	0	0	0	0	*0*	0	0	2	0	*2*
7:45 AM	5	6	2	0	*13*	0	0	0	0	*0*	0	0	3	0	*3*
8:00 AM	8	3	0	0	*11*	0	0	0	0	*0*	0	0	5	1	*6*
8:15 AM	11	0	2	1	*14*	0	0	0	0	*0*	2	0	2	0	*4*
Peak Hour	31	14	4	2	*51*	0	0	0	0	*0*	2	0	12	1	*15*

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Count Summaries - All Vehicles

Interval Start	Research Pkwy Eastbound				Research Pkwy Westbound				Tutt Blvd Northbound				Tutt Blvd Southbound				15-min Total	Rolling Hour Total
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM	0	11	43	0	0	1	182	11	0	13	2	2	0	4	0	25	294	0
7:15 AM	0	10	55	1	0	0	301	7	0	9	2	0	0	8	0	41	434	0
7:30 AM	**0**	**27**	**122**	**4**	**0**	**1**	**238**	**7**	**0**	**7**	**1**	**4**	**0**	**3**	**0**	**22**	**436**	**0**
7:45 AM	**0**	**23**	**157**	**2**	**0**	**2**	**170**	**15**	**0**	**7**	**1**	**5**	**0**	**2**	**0**	**33**	**417**	**1,581**
8:00 AM	**0**	**39**	**156**	**3**	**0**	**3**	**200**	**20**	**0**	**9**	**1**	**2**	**0**	**2**	**0**	**18**	**453**	**1,740**
8:15 AM	**0**	**9**	**159**	**7**	**0**	**0**	**222**	**1**	**0**	**5**	**0**	**2**	**0**	**2**	**0**	**28**	**435**	**1,741**
8:30 AM	0	8	113	4	0	1	182	1	0	3	1	0	0	1	0	19	333	1,638
8:45 AM	0	5	87	2	0	0	150	2	1	5	0	1	0	1	1	13	268	1,489
Count Total	0	132	892	23	0	8	1,645	64	1	58	8	16	0	23	1	199	3,070	
Pk Hr All	**0**	**98**	**594**	**16**	**0**	**6**	**830**	**43**	**0**	**28**	**3**	**13**	**0**	**9**	**0**	**101**	**1,741**	
Pk Hr HV	**0**	**2**	**21**	**8**	**0**	**1**	**11**	**2**	**0**	**4**	**0**	**0**	**0**	**1**	**0**	**1**	**51**	
Pk Hr HV%	**-**	**2%**	**4%**	**50%**	**-**	**17%**	**1%**	**5%**	**-**	**14%**	**0%**	**0%**	**-**	**11%**	**-**	**1%**	**3%**	

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	E	W	N	S	Total
7:00 AM	1	4	1	0	*6*	0	0	0	0	*0*	3	0	3	0	*6*
7:15 AM	3	3	0	0	*6*	0	0	0	0	*0*	0	0	2	1	*3*
7:30 AM	**7**	**5**	**0**	**1**	**13**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**2**
7:45 AM	**5**	**6**	**2**	**0**	**13**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**3**	**0**	**3**
8:00 AM	**8**	**3**	**0**	**0**	**11**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**5**	**1**	**6**
8:15 AM	**11**	**0**	**2**	**1**	**14**	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**2**	**0**	**4**
8:30 AM	6	3	2	2	*13*	0	2	0	0	*2*	2	0	2	3	*7*
8:45 AM	3	1	0	0	*4*	0	1	0	0	*1*	0	0	0	2	*2*
Count Total	44	25	7	4	*80*	0	3	0	0	*3*	7	0	19	7	*33*
Peak Hour	**31**	**14**	**4**	**2**	***51***	**0**	**0**	**0**	**0**	***0***	**2**	**0**	**12**	**1**	**15**

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Count Summaries - Heavy Vehicles

Interval Start	Research Pkwy				Research Pkwy				Tutt Blvd				Tutt Blvd				15-min Total	Rolling Hour Total
	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	1	0	0	1	2	1	0	0	0	1	0	0	0	0	6	0
7:15 AM	0	0	3	0	0	0	3	0	0	0	0	0	0	0	0	0	6	0
7:30 AM	**0**	**1**	**5**	**1**	**0**	**0**	**5**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**13**	**0**
7:45 AM	**0**	**0**	**5**	**0**	**0**	**0**	**4**	**2**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**13**	**38**
8:00 AM	**0**	**1**	**5**	**2**	**0**	**1**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**11**	**43**
8:15 AM	**0**	**0**	**6**	**5**	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**1**	**14**	**51**
8:30 AM	0	0	3	3	0	0	3	0	0	2	0	0	0	0	0	2	13	51
8:45 AM	0	0	2	1	0	0	1	0	0	0	0	0	0	0	0	0	4	42
Count Total	0	2	30	12	0	2	20	3	0	6	0	1	0	1	0	3	80	
Pk Hr Heavy	**0**	**2**	**21**	**8**	**0**	**1**	**11**	**2**	**0**	**4**	**0**	**0**	**0**	**1**	**0**	**1**	**51**	

Count Summaries - Bikes

Interval Start	Research Pkwy				Research Pkwy				Tutt Blvd				Tutt Blvd				15-min Total	Rolling Hour Total
	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	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	0	0	0	0
7:30 AM	**0**	**0**	**0**	**0**	**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**	**0**	**0**	**0**	**0**
8:00 AM	**0**	**0**	**0**	**0**	**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**	**0**	**0**	**0**	**0**
8:30 AM	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	2	2
8:45 AM	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	3
Count Total	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	3	
Pk Hr Bike	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	

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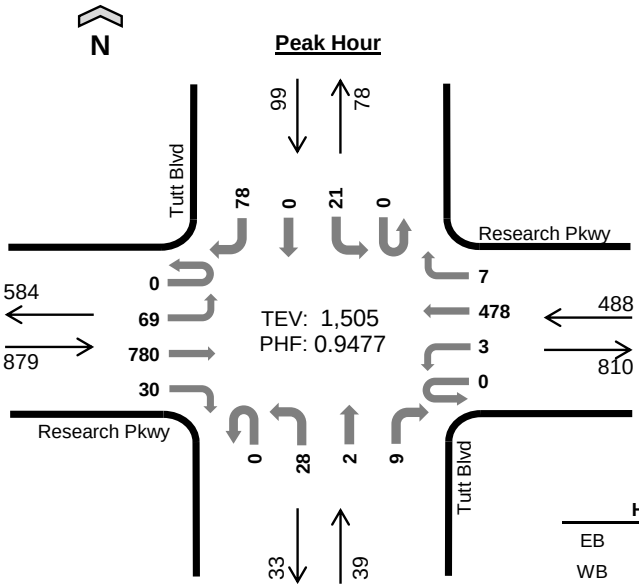
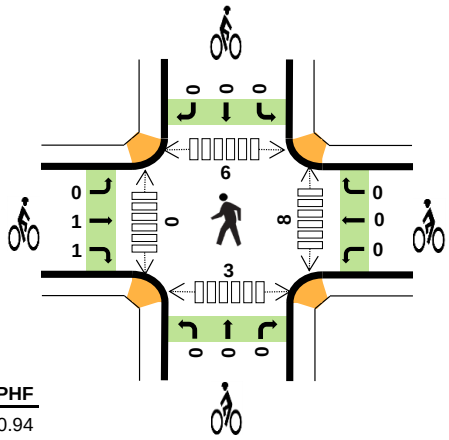
Tutt Blvd
Research Pkwy

Date: 10/2/2024
Count Period: 4:00 PM to 6:00 PM
Peak Hour: 5:00 PM to 6:00 PM





	HV%	PHF
EB	1%	0.94
WB	1%	0.88
NB	21%	0.81
SB	0%	0.92
TOTAL	1%	0.95

Peak Hour Count Summaries

Peak Hour Interval Start		Research Pkwy Eastbound				Research Pkwy Westbound				Tutt Blvd Northbound				Tutt Blvd Southbound				15-min Total	Rolling Hour Total
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
5:00 PM		0	13	215	7	0	3	117	1	0	10	0	0	0	4	0	19	389	0
5:15 PM		0	17	198	9	0	0	133	5	0	6	0	2	0	7	0	20	397	0
5:30 PM		0	23	159	4	0	0	125	0	0	5	0	4	0	4	0	20	344	0
5:45 PM		0	16	208	10	0	0	103	1	0	7	2	3	0	6	0	19	375	1,505
Pk Hr	All	0	69	780	30	0	3	478	7	0	28	2	9	0	21	0	78	1,505	
	HV	0	0	2	3	0	0	5	0	0	4	0	4	0	0	0	0	18	
	HV%	-	0%	0%	10%	-	0%	1%	0%	-	14%	0%	44%	-	0%	-	0%	1%	

Note: For complete count summary (all intervals), see following pages.
*** Heavy Vehicle Classifications include FHWA Classes 4-13.*
*** Count Summaries 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	E	W	N	S	Total
5:00 PM	1	1	3	0	*5*	0	0	0	0	*0*	2	0	1	0	*3*
5:15 PM	2	1	1	0	*4*	1	0	0	0	*1*	0	0	2	0	*2*
5:30 PM	2	2	2	0	*6*	1	0	0	0	*1*	4	0	1	0	*5*
5:45 PM	0	1	2	0	*3*	0	0	0	0	*0*	2	0	2	3	*7*
Peak Hour	5	5	8	0	*18*	2	0	0	0	*2*	8	0	6	3	*17*

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Count Summaries - All Vehicles

Interval Start	Research Pkwy				Research Pkwy				Tutt Blvd				Tutt Blvd				15-min Total	Rolling Hour Total
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	19	137	3	0	0	125	0	0	5	1	0	0	1	0	15	306	0
4:15 PM	0	19	167	5	0	0	104	2	0	3	0	2	0	4	0	11	317	0
4:30 PM	0	17	150	3	0	3	157	5	0	5	0	0	0	2	0	17	359	0
4:45 PM	0	17	161	10	0	2	105	8	0	6	0	0	0	2	0	17	328	1,310
5:00 PM	**0**	**13**	**215**	**7**	**0**	**3**	**117**	**1**	**0**	**10**	**0**	**0**	**0**	**4**	**0**	**19**	**389**	**1,393**
5:15 PM	**0**	**17**	**198**	**9**	**0**	**0**	**133**	**5**	**0**	**6**	**0**	**2**	**0**	**7**	**0**	**20**	**397**	**1,473**
5:30 PM	**0**	**23**	**159**	**4**	**0**	**0**	**125**	**0**	**0**	**5**	**0**	**4**	**0**	**4**	**0**	**20**	**344**	**1,458**
5:45 PM	**0**	**16**	**208**	**10**	**0**	**0**	**103**	**1**	**0**	**7**	**2**	**3**	**0**	**6**	**0**	**19**	**375**	**1,505**
Count Total	0	141	1,395	51	0	8	969	22	0	47	3	11	0	30	0	138	2,815	
Pk Hr All	**0**	**69**	**780**	**30**	**0**	**3**	**478**	**7**	**0**	**28**	**2**	**9**	**0**	**21**	**0**	**78**	**1,505**	
Pk Hr HV	**0**	**0**	**2**	**3**	**0**	**0**	**5**	**0**	**0**	**4**	**0**	**4**	**0**	**0**	**0**	**0**	**18**	
Pk Hr HV%	**-**	**0%**	**0%**	**10%**	**-**	**0%**	**1%**	**0%**	**-**	**14%**	**0%**	**44%**	**-**	**0%**	**-**	**0%**	**1%**	

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	E	W	N	S	Total
4:00 PM	1	3	1	0	*5*	0	0	0	0	*0*	0	0	1	0	*1*
4:15 PM	2	7	0	0	*9*	0	0	0	0	*0*	0	0	0	1	*1*
4:30 PM	4	3	0	1	*8*	0	0	1	0	*1*	0	0	4	0	*4*
4:45 PM	0	1	1	0	*2*	0	0	0	0	*0*	2	0	1	2	*5*
5:00 PM	**1**	**1**	**3**	**0**	**5**	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**1**	**0**	**3**
5:15 PM	**2**	**1**	**1**	**0**	**4**	**1**	**0**	**0**	**0**	**1**	**0**	**0**	**2**	**0**	**2**
5:30 PM	**2**	**2**	**2**	**0**	**6**	**1**	**0**	**0**	**0**	**1**	**4**	**0**	**1**	**0**	**5**
5:45 PM	**0**	**1**	**2**	**0**	**3**	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**2**	**3**	**7**
Count Total	12	19	10	1	*42*	2	0	1	0	*3*	10	0	12	6	*28*
Peak Hour	**5**	**5**	**8**	**0**	***18***	**2**	**0**	**0**	**0**	***2***	**8**	**0**	**6**	**3**	**17**

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Count Summaries - Heavy Vehicles

Interval Start	Research Pkwy				Research Pkwy				Tutt Blvd				Tutt Blvd				15-min Total	Rolling Hour Total
	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	1	0	0	0	3	0	0	1	0	0	0	0	0	0	5	0
4:15 PM	0	0	1	1	0	0	7	0	0	0	0	0	0	0	0	0	9	0
4:30 PM	0	0	4	0	0	0	3	0	0	0	0	0	0	0	0	1	8	0
4:45 PM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	2	24
5:00 PM	**0**	**0**	**0**	**1**	**0**	**0**	**1**	**0**	**0**	**3**	**0**	**0**	**0**	**0**	**0**	**0**	**5**	**24**
5:15 PM	**0**	**0**	**0**	**2**	**0**	**0**	**1**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**4**	**19**
5:30 PM	**0**	**0**	**2**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**6**	**17**
5:45 PM	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**3**	**18**
Count Total	0	0	8	4	0	0	19	0	0	6	0	4	0	0	0	1	42	
Pk Hr Heavy	**0**	**0**	**2**	**3**	**0**	**0**	**5**	**0**	**0**	**4**	**0**	**4**	**0**	**0**	**0**	**0**	**18**	

Count Summaries - Bikes

Interval Start	Research Pkwy				Research Pkwy				Tutt Blvd				Tutt Blvd				15-min Total	Rolling Hour Total
	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	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
5:00 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**
5:15 PM	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**2**
5:30 PM	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**2**
5:45 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**
Count Total	0	0	1	1	0	0	0	0	0	1	0	0	0	0	0	0	3	
Pk Hr Bike	**0**	**0**	**1**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	

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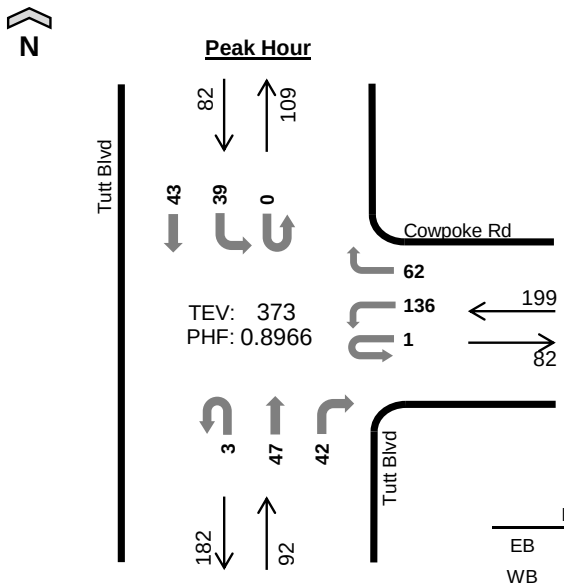
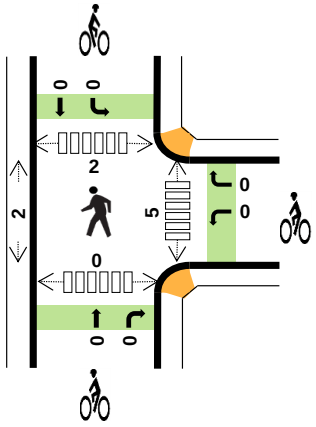
Tutt Blvd
Cowpoke Rd

Date: 10/2/2024
Count Period: 7:00 AM to 9:00 AM
Peak Hour: 7:30 AM to 8:30 AM





	HV%	PHF
EB	--	--
WB	3%	0.80
NB	4%	0.85
SB	4%	0.73
TOTAL	3%	0.90

Peak Hour Count Summaries

Peak Hour Interval Start		n/a				Cowpoke Rd				Tutt Blvd				Tutt Blvd				15-min Total	Rolling Hour Total
		Eastbound				Westbound				Northbound				Southbound					
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:30 AM		**0**	**0**	**0**	**0**	**0**	**43**	**0**	**19**	**1**	**0**	**11**	**15**	**0**	**2**	**13**	**0**	**104**	**0**
7:45 AM		**0**	**0**	**0**	**0**	**0**	**38**	**0**	**19**	**2**	**0**	**11**	**10**	**0**	**13**	**7**	**0**	**100**	**0**
8:00 AM		**0**	**0**	**0**	**0**	**1**	**28**	**0**	**18**	**0**	**0**	**17**	**7**	**0**	**8**	**11**	**0**	**90**	**0**
8:15 AM		**0**	**0**	**0**	**0**	**0**	**27**	**0**	**6**	**0**	**0**	**8**	**10**	**0**	**16**	**12**	**0**	**79**	**373**
Pk Hr	All	**0**	**0**	**0**	**0**	**1**	**136**	**0**	**62**	**3**	**0**	**47**	**42**	**0**	**39**	**43**	**0**	**373**	
	HV	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**3**	**0**	**0**	**2**	**2**	**0**	**2**	**1**	**0**	**12**	
	HV%	-	-	-	-	**0%**	**1%**	-	**5%**	**0%**	-	**4%**	**5%**	-	**5%**	**2%**	-	**3%**	

Note: For complete count summary (all intervals), see following pages.
*** Heavy Vehicle Classifications include FHWA Classes 4-13.*
*** Count Summaries 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	E	W	N	S	Total
7:30 AM	**0**	**2**	**2**	**1**	***5***	**0**	**0**	**0**	**0**	***0***	**2**	**0**	**0**	**0**	***2***
7:45 AM	**0**	**3**	**1**	**2**	***6***	**0**	**0**	**0**	**0**	***0***	**2**	**2**	**2**	**0**	***6***
8:00 AM	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	***0***
8:15 AM	**0**	**0**	**1**	**0**	***1***	**0**	**0**	**0**	**0**	***0***	**1**	**0**	**0**	**0**	***1***
Peak Hour	**0**	**5**	**4**	**3**	***12***	**0**	**0**	**0**	**0**	***0***	**5**	**2**	**2**	**0**	***9***

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Count Summaries - All Vehicles

Interval Start	n/a				Cowpoke Rd				Tutt Blvd				Tutt Blvd				15-min Total	Rolling Hour Total
	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	25	0	11	0	0	7	10	0	2	10	0	65	0
7:15 AM	0	0	0	0	0	33	0	13	0	0	10	10	0	1	7	0	74	0
7:30 AM	**0**	**0**	**0**	**0**	**0**	**43**	**0**	**19**	**1**	**0**	**11**	**15**	**0**	**2**	**13**	**0**	**104**	**0**
7:45 AM	**0**	**0**	**0**	**0**	**0**	**38**	**0**	**19**	**2**	**0**	**11**	**10**	**0**	**13**	**7**	**0**	**100**	**343**
8:00 AM	**0**	**0**	**0**	**0**	**1**	**28**	**0**	**18**	**0**	**0**	**17**	**7**	**0**	**8**	**11**	**0**	**90**	**368**
8:15 AM	**0**	**0**	**0**	**0**	**0**	**27**	**0**	**6**	**0**	**0**	**8**	**10**	**0**	**16**	**12**	**0**	**79**	**373**
8:30 AM	0	0	0	0	0	21	0	13	0	0	9	7	0	5	4	0	59	328
8:45 AM	0	0	0	0	0	9	0	4	2	0	3	15	0	2	7	0	42	270
Count Total	0	0	0	0	1	224	0	103	5	0	76	84	0	49	71	0	613	
Pk Hr All	**0**	**0**	**0**	**0**	**1**	**136**	**0**	**62**	**3**	**0**	**47**	**42**	**0**	**39**	**43**	**0**	**373**	
Pk Hr HV	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**3**	**0**	**0**	**2**	**2**	**0**	**2**	**1**	**0**	**12**	
Pk Hr HV%	**-**	**-**	**-**	**-**	**0%**	**1%**	**-**	**5%**	**0%**	**-**	**4%**	**5%**	**-**	**5%**	**2%**	**-**	**3%**	

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	E	W	N	S	Total
7:00 AM	0	1	1	0	*2*	0	0	0	0	*0*	0	1	0	0	*1*
7:15 AM	0	1	0	0	*1*	0	1	0	0	*1*	7	0	0	8	*15*
7:30 AM	**0**	**2**	**2**	**1**	**5**	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**2**
7:45 AM	**0**	**3**	**1**	**2**	**6**	**0**	**0**	**0**	**0**	**0**	**2**	**2**	**2**	**0**	**6**
8:00 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
8:15 AM	**0**	**0**	**1**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**1**
8:30 AM	0	2	0	1	*3*	0	0	0	0	*0*	0	1	1	0	*2*
8:45 AM	0	0	1	0	*1*	0	0	0	0	*0*	2	0	0	0	*2*
Count Total	0	9	6	4	*19*	0	1	0	0	*1*	14	4	3	8	*29*
Peak Hour	**0**	**5**	**4**	**3**	***12***	**0**	**0**	**0**	**0**	***0***	**5**	**2**	**2**	**0**	**9**

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Count Summaries - Heavy Vehicles

Interval Start	n/a				Cowpoke Rd				Tutt Blvd				Tutt Blvd				15-min Total	Rolling Hour Total
	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	1	0	0	0	0	0	1	0	0	0	0	2	0
7:15 AM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0
7:30 AM	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**1**	**0**	**0**	**1**	**1**	**0**	**0**	**1**	**0**	**5**	**0**
7:45 AM	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**2**	**0**	**0**	**1**	**0**	**0**	**2**	**0**	**0**	**6**	**14**
8:00 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**12**
8:15 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**1**	**12**
8:30 AM	0	0	0	0	0	1	0	1	0	0	0	0	0	0	1	0	3	10
8:45 AM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	5
Count Total	0	0	0	0	0	5	0	4	0	0	3	3	0	2	2	0	19	
Pk Hr Heavy	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**3**	**0**	**0**	**2**	**2**	**0**	**2**	**1**	**0**	**12**	

Count Summaries - Bikes

Interval Start	n/a				Cowpoke Rd				Tutt Blvd				Tutt Blvd				15-min Total	Rolling Hour Total
	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	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0
7:30 AM	**0**	**0**	**0**	**0**	**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**	**0**	**0**	**0**	**1**
8:00 AM	**0**	**0**	**0**	**0**	**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**	**0**	**0**	**0**	**0**	**0**
8:30 AM	0	0	0	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	0	0	0
Count Total	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	
Pk Hr Bike	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	

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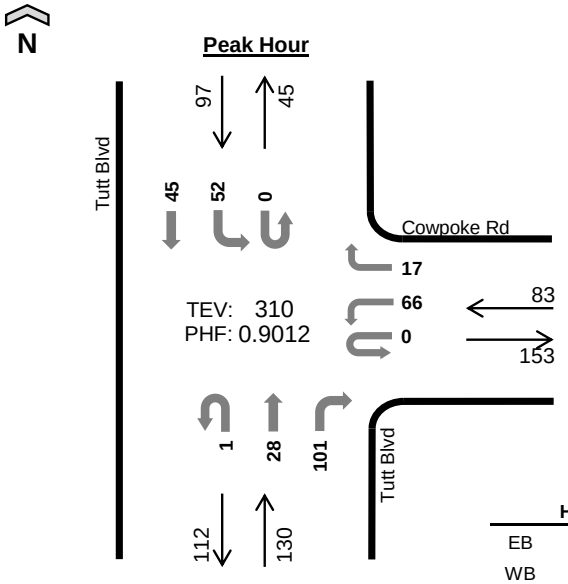
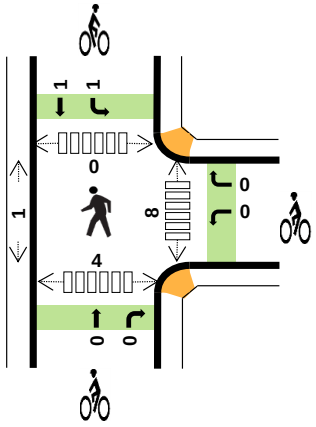
Tutt Blvd
Cowpoke Rd

Date: 10/2/2024
Count Period: 4:00 PM to 6:00 PM
Peak Hour: 4:45 PM to 5:45 PM





	HV%	PHF
EB	--	--
WB	0%	0.80
NB	0%	0.88
SB	3%	0.87
TOTAL	1%	0.90

Peak Hour Count Summaries

Peak Hour Interval Start		n/a				Cowpoke Rd				Tutt Blvd				Tutt Blvd				15-min Total	Rolling Hour Total
		Eastbound				Westbound				Northbound				Southbound					
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:45 PM		0	0	0	0	0	13	0	5	0	0	4	24	0	10	10	0	66	0
5:00 PM		0	0	0	0	0	18	0	1	0	0	9	28	0	16	8	0	80	0
5:15 PM		0	0	0	0	0	13	0	7	0	0	5	25	0	17	11	0	78	0
5:30 PM		0	0	0	0	0	22	0	4	1	0	10	24	0	9	16	0	86	310
Pk Hr	All	0	0	0	0	0	66	0	17	1	0	28	101	0	52	45	0	310	
	HV	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	0	3	
	HV%	-	-	-	-	-	0%	-	0%	0%	-	0%	0%	-	4%	2%	-	1%	

Note: For complete count summary (all intervals), see following pages.
*** Heavy Vehicle Classifications include FHWA Classes 4-13.*
*** Count Summaries 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	E	W	N	S	Total
4:45 PM	0	0	0	1	*1*	0	0	0	0	*0*	2	0	0	0	*2*
5:00 PM	0	0	0	1	*1*	0	0	0	0	*0*	2	0	0	0	*2*
5:15 PM	0	0	0	1	*1*	0	0	0	0	*0*	2	0	0	2	*4*
5:30 PM	0	0	0	0	*0*	0	0	0	2	*2*	2	1	0	2	*5*
Peak Hour	0	0	0	3	*3*	0	0	0	2	*2*	8	1	0	4	*13*

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Count Summaries - All Vehicles

Interval Start	n/a				Cowpoke Rd				Tutt Blvd				Tutt Blvd				15-min Total	Rolling Hour Total
	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	17	0	0	1	0	6	30	0	21	10	0	85	0
4:15 PM	0	0	0	0	0	20	0	4	1	0	9	19	0	10	16	0	79	0
4:30 PM	0	0	0	0	0	20	0	5	0	0	7	18	0	11	9	0	70	0
4:45 PM	**0**	**0**	**0**	**0**	**0**	**13**	**0**	**5**	**0**	**0**	**4**	**24**	**0**	**10**	**10**	**0**	**66**	**300**
5:00 PM	**0**	**0**	**0**	**0**	**0**	**18**	**0**	**1**	**0**	**0**	**9**	**28**	**0**	**16**	**8**	**0**	**80**	**295**
5:15 PM	**0**	**0**	**0**	**0**	**0**	**13**	**0**	**7**	**0**	**0**	**5**	**25**	**0**	**17**	**11**	**0**	**78**	**294**
5:30 PM	**0**	**0**	**0**	**0**	**0**	**22**	**0**	**4**	**1**	**0**	**10**	**24**	**0**	**9**	**16**	**0**	**86**	**310**
5:45 PM	0	0	0	0	0	14	0	0	0	0	6	13	0	8	10	0	51	295
Count Total	0	0	0	0	0	137	0	26	3	0	56	181	0	102	90	0	595	
Pk Hr All	**0**	**0**	**0**	**0**	**0**	**66**	**0**	**17**	**1**	**0**	**28**	**101**	**0**	**52**	**45**	**0**	**310**	
Pk Hr HV	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**1**	**0**	**3**	
Pk Hr HV%	**-**	**-**	**-**	**-**	**-**	**0%**	**-**	**0%**	**0%**	**-**	**0%**	**0%**	**-**	**4%**	**2%**	**-**	**1%**	

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	E	W	N	S	Total
4:00 PM	0	2	0	2	*4*	0	0	0	0	*0*	2	0	0	2	*4*
4:15 PM	0	0	0	0	*0*	0	0	0	0	*0*	1	1	1	0	*3*
4:30 PM	0	2	0	1	*3*	0	1	0	0	*1*	0	0	0	0	*0*
4:45 PM	**0**	**0**	**0**	**1**	**1**	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**2**
5:00 PM	**0**	**0**	**0**	**1**	**1**	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**2**
5:15 PM	**0**	**0**	**0**	**1**	**1**	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**0**	**2**	**4**
5:30 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**2**	**2**	**1**	**0**	**2**	**5**
5:45 PM	0	0	0	0	*0*	0	0	0	0	*0*	4	0	0	3	*7*
Count Total	0	4	0	6	*10*	0	1	0	2	*3*	15	2	1	9	*27*
Peak Hour	**0**	**0**	**0**	**3**	***3***	**0**	**0**	**0**	**2**	***2***	**8**	**1**	**0**	**4**	**13**

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Count Summaries - Heavy Vehicles

Interval Start	n/a				Cowpoke Rd				Tutt Blvd				Tutt Blvd				15-min Total	Rolling Hour Total
	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	0	0	0	2	0	0	4	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	1	0	1	0	0	0	0	0	0	1	0	3	0
4:45 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**1**	**8**
5:00 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**1**	**5**
5:15 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**1**	**6**
5:30 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**3**
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
Count Total	0	0	0	0	0	3	0	1	0	0	0	0	0	4	2	0	10	
Pk Hr Heavy	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**1**	**0**	**3**	

Count Summaries - Bikes

Interval Start	n/a				Cowpoke Rd				Tutt Blvd				Tutt Blvd				15-min Total	Rolling Hour Total
	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	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0
4:45 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**
5:00 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**
5:15 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**
5:30 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**1**	**0**	**2**	**2**
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
Count Total	0	0	0	0	0	0	0	1	0	0	0	0	0	1	1	0	3	
Pk Hr Bike	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**1**	**0**	**2**	

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APPENDIX C

Future Traffic Projections

ROUTE	REFPT	ENDREFPT	LENGTH	UPDATEYR	AADT	AADTYR	COUNTYEAR	YR20FACTOR	DHV	DD	LOCATION
021B	149	151.646	2.561	2023	57000	2023	2020	1.3	8	54	ON POWERS BLVD N/O WOODMEN RD COLORADO SPRINGS

CDOT Traffic Projections: Peach Ranch

Location	# of Years	Growth Factor	Annual Growth
On Powers Blvd N/o Woodmen Rd	20	1.3	1.32%

APPENDIX D

Trip Generation Worksheets

Kimley»Horn

Project	Peach Ranch				
Subject	Trip Generation for Single-Family Detached Housing				
Designed by	IY	*Date*	October 30, 2024	*Job No.*	096761004
Checked by		*Date*		*Sheet No.*	of

TRIP GENERATION MANUAL TECHNIQUES

ITE Trip Generation Manual 11th Edition, Fitted Curve Equations

Land Use Code - Single-Family Detached Housing (210)

Independent Variable - Dwelling Units (X)

X = 155
T = Average Vehicle Trip Ends

Peak Hour of Adjacent Street Traffic, One Hour Between 7 and 9 a.m. (200 Series Page 220)

Directional Distribution: 25% ent. 75% exit.

Ln(T) = 0.91 Ln(X) + 0.12
Ln(T) = 0.91 * Ln(155) + 0.12

T = 111 Average Vehicle Trip Ends
28 entering 83 exiting

28 + 83 = 111

Peak Hour of Adjacent Street Traffic, One Hour Between 4 and 6 p.m. (200 Series Page 221)

Directional Distribution: 63% ent. 37% exit.

Ln(T) = 0.94 Ln(X) + 0.27
Ln(T) = 0.94 * Ln(155) + 0.27

T = 150 Average Vehicle Trip Ends
95 entering 55 exiting

95 + 55 = 150

Weekday (200 Series Page 219)

Directional Distribution: 50% entering, 50% exiting

Ln(T) = 0.92 Ln(X) + 2.68
Ln(T) = 0.92 * Ln(155) + 2.68

T = 1512 Average Vehicle Trip Ends
756 entering 756 exiting

756 + 756 = 1512

APPENDIX E

Intersection Analysis Worksheets

MOVEMENT SUMMARY

Site: 1 [2024 Existing AM (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

2024 Existing AM
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] ft	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed mph
South: Tutt Blvd															
3	L2	All MCs	30	3.0	30	3.0	0.050	5.8	LOS A	0.2	4.1	0.54	0.50	0.54	30.8
8	T1	All MCs	3	3.0	3	3.0	0.050	5.8	LOS A	0.2	4.1	0.54	0.50	0.54	31.3
18	R2	All MCs	14	3.0	14	3.0	0.023	6.1	LOS A	0.1	1.9	0.56	0.48	0.56	33.0
Approach			48	3.0	48	3.0	0.050	5.9	LOS A	0.2	4.1	0.55	0.49	0.55	31.4
East: Research Pkwy															
1	L2	All MCs	7	3.0	7	3.0	0.405	7.2	LOS A	2.2	56.9	0.38	0.19	0.38	32.2
6	T1	All MCs	902	3.0	902	3.0	0.405	7.0	LOS A	2.2	56.9	0.37	0.19	0.37	32.9
16	R2	All MCs	47	3.0	47	3.0	0.405	6.9	LOS A	2.2	55.5	0.36	0.18	0.36	32.7
Approach			955	3.0	955	3.0	0.405	7.0	LOS A	2.2	56.9	0.37	0.19	0.37	32.9
North: Tutt Blvd															
7	L2	All MCs	10	3.0	10	3.0	0.210	8.9	LOS A	0.7	17.9	0.63	0.62	0.63	31.2
4	T1	All MCs	1	3.0	1	3.0	0.210	8.9	LOS A	0.7	17.9	0.63	0.62	0.63	31.8
14	R2	All MCs	110	3.0	110	3.0	0.210	8.9	LOS A	0.7	17.9	0.63	0.62	0.63	31.6
Approach			121	3.0	121	3.0	0.210	8.9	LOS A	0.7	17.9	0.63	0.62	0.63	31.6
West: Research Pkwy															
5	L2	All MCs	107	3.0	107	3.0	0.284	4.7	LOS A	1.5	37.6	0.10	0.02	0.10	32.7
2	T1	All MCs	646	3.0	646	3.0	0.284	4.7	LOS A	1.5	37.6	0.10	0.02	0.10	33.7
12	R2	All MCs	17	3.0	17	3.0	0.284	4.7	LOS A	1.5	37.6	0.10	0.02	0.10	33.8
Approach			770	3.0	770	3.0	0.284	4.7	LOS A	1.5	37.6	0.10	0.02	0.10	33.6
All Vehicles			1893	3.0	1893	3.0	0.405	6.1	LOS A	2.2	56.9	0.28	0.15	0.28	33.0

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).
Roundabout Capacity Model: US HCM 6.
Delay Model: HCM Delay Formula (Stopline Delay: Geometric Delay is not included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: Siegloch M1 implied by US HCM 6 Roundabout Capacity Model.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 1 [2024 Existing PM (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

2024 Existing PM
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] ft	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed mph
South: Tutt Blvd															
3	L2	All MCs	30	3.0	30	3.0	0.057	6.9	LOS A	0.2	4.5	0.59	0.58	0.59	30.2
8	T1	All MCs	2	3.0	2	3.0	0.057	6.9	LOS A	0.2	4.5	0.59	0.58	0.59	30.8
18	R2	All MCs	10	3.0	10	3.0	0.019	7.2	LOS A	0.1	1.5	0.60	0.54	0.60	32.4
Approach			42	3.0	42	3.0	0.057	7.0	LOS A	0.2	4.5	0.59	0.57	0.59	30.7
East: Research Pkwy															
1	L2	All MCs	3	3.0	3	3.0	0.218	4.9	LOS A	1.0	24.7	0.26	0.12	0.26	33.3
6	T1	All MCs	520	3.0	520	3.0	0.218	4.8	LOS A	1.0	24.7	0.25	0.12	0.25	34.0
16	R2	All MCs	8	3.0	8	3.0	0.218	4.7	LOS A	0.9	24.0	0.25	0.11	0.25	33.8
Approach			530	3.0	530	3.0	0.218	4.8	LOS A	1.0	24.7	0.25	0.12	0.25	34.0
North: Tutt Blvd															
7	L2	All MCs	23	3.0	23	3.0	0.131	5.6	LOS A	0.5	11.9	0.51	0.42	0.51	32.4
4	T1	All MCs	1	3.0	1	3.0	0.131	5.6	LOS A	0.5	11.9	0.51	0.42	0.51	33.0
14	R2	All MCs	85	3.0	85	3.0	0.131	5.6	LOS A	0.5	11.9	0.51	0.42	0.51	32.8
Approach			109	3.0	109	3.0	0.131	5.6	LOS A	0.5	11.9	0.51	0.42	0.51	32.7
West: Research Pkwy															
5	L2	All MCs	75	3.0	75	3.0	0.356	5.5	LOS A	2.0	52.0	0.14	0.04	0.14	32.6
2	T1	All MCs	848	3.0	848	3.0	0.356	5.5	LOS A	2.0	52.0	0.14	0.04	0.14	33.5
12	R2	All MCs	33	3.0	33	3.0	0.356	5.5	LOS A	2.0	52.0	0.14	0.04	0.14	33.4
Approach			955	3.0	955	3.0	0.356	5.5	LOS A	2.0	52.0	0.14	0.04	0.14	33.4
All Vehicles			1637	3.0	1637	3.0	0.356	5.3	LOS A	2.0	52.0	0.22	0.10	0.22	33.5

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).
Roundabout Capacity Model: US HCM 6.
Delay Model: HCM Delay Formula (Stopline Delay: Geometric Delay is not included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: Siegloch M1 implied by US HCM 6 Roundabout Capacity Model.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 1 [2028 BG AM (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

2028 BG AM
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] ft	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed mph
South: Tutt Blvd															
3	L2	All MCs	113	3.0	113	3.0	0.177	7.5	LOS A	0.6	15.5	0.59	0.55	0.59	29.9
8	T1	All MCs	3	3.0	3	3.0	0.177	7.5	LOS A	0.6	15.5	0.59	0.55	0.59	30.5
18	R2	All MCs	48	3.0	48	3.0	0.081	7.0	LOS A	0.3	6.8	0.58	0.55	0.58	32.5
Approach			164	3.0	164	3.0	0.177	7.4	LOS A	0.6	15.5	0.59	0.55	0.59	30.6
East: Research Pkwy															
1	L2	All MCs	24	3.0	24	3.0	0.472	8.7	LOS A	2.7	68.2	0.51	0.31	0.51	31.4
6	T1	All MCs	951	3.0	951	3.0	0.472	8.5	LOS A	2.7	68.2	0.50	0.30	0.50	32.2
16	R2	All MCs	49	3.0	49	3.0	0.472	8.3	LOS A	2.6	66.9	0.49	0.30	0.49	32.0
Approach			1024	3.0	1024	3.0	0.472	8.5	LOS A	2.7	68.2	0.50	0.30	0.50	32.2
North: Tutt Blvd															
7	L2	All MCs	10	3.0	10	3.0	0.261	11.0	LOS B	0.9	22.4	0.68	0.69	0.72	30.3
4	T1	All MCs	5	3.0	5	3.0	0.261	11.0	LOS B	0.9	22.4	0.68	0.69	0.72	30.9
14	R2	All MCs	115	3.0	115	3.0	0.261	11.0	LOS B	0.9	22.4	0.68	0.69	0.72	30.7
Approach			130	3.0	130	3.0	0.261	11.0	LOS B	0.9	22.4	0.68	0.69	0.72	30.7
West: Research Pkwy															
5	L2	All MCs	112	3.0	112	3.0	0.333	5.4	LOS A	1.8	46.9	0.17	0.05	0.17	32.4
2	T1	All MCs	680	3.0	680	3.0	0.333	5.4	LOS A	1.8	46.9	0.17	0.05	0.17	33.4
12	R2	All MCs	93	3.0	93	3.0	0.333	5.4	LOS A	1.8	46.9	0.17	0.05	0.17	33.4
Approach			886	3.0	886	3.0	0.333	5.4	LOS A	1.8	46.9	0.17	0.05	0.17	33.2
All Vehicles			2204	3.0	2204	3.0	0.472	7.3	LOS A	2.7	68.2	0.39	0.24	0.39	32.4

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).
Roundabout Capacity Model: US HCM 6.
Delay Model: HCM Delay Formula (Stopline Delay: Geometric Delay is not included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: Siegloch M1 implied by US HCM 6 Roundabout Capacity Model.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 1 [2028 BG PM (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

2028 BG PM
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] ft	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed mph
South: Tutt Blvd															
3	L2	All MCs	46	3.0	46	3.0	0.088	7.7	LOS A	0.3	7.0	0.61	0.60	0.61	29.9
8	T1	All MCs	2	3.0	2	3.0	0.088	7.7	LOS A	0.3	7.0	0.61	0.60	0.61	30.4
18	R2	All MCs	20	3.0	20	3.0	0.040	7.9	LOS A	0.1	3.2	0.62	0.61	0.62	32.1
Approach			67	3.0	67	3.0	0.088	7.7	LOS A	0.3	7.0	0.61	0.61	0.61	30.5
East: Research Pkwy															
1	L2	All MCs	28	3.0	28	3.0	0.244	5.3	LOS A	1.1	28.3	0.29	0.14	0.29	32.9
6	T1	All MCs	548	3.0	548	3.0	0.244	5.1	LOS A	1.1	28.3	0.28	0.14	0.28	33.7
16	R2	All MCs	8	3.0	8	3.0	0.244	5.0	LOS A	1.1	27.6	0.28	0.13	0.28	33.6
Approach			584	3.0	584	3.0	0.244	5.1	LOS A	1.1	28.3	0.29	0.14	0.29	33.7
North: Tutt Blvd															
7	L2	All MCs	24	3.0	24	3.0	0.153	6.2	LOS A	0.5	13.7	0.54	0.46	0.54	32.1
4	T1	All MCs	5	3.0	5	3.0	0.153	6.2	LOS A	0.5	13.7	0.54	0.46	0.54	32.8
14	R2	All MCs	89	3.0	89	3.0	0.153	6.2	LOS A	0.5	13.7	0.54	0.46	0.54	32.5
Approach			118	3.0	118	3.0	0.153	6.2	LOS A	0.5	13.7	0.54	0.46	0.54	32.5
West: Research Pkwy															
5	L2	All MCs	79	3.0	79	3.0	0.415	6.5	LOS A	2.5	65.1	0.24	0.09	0.24	32.2
2	T1	All MCs	893	3.0	893	3.0	0.415	6.5	LOS A	2.5	65.1	0.24	0.09	0.24	33.0
12	R2	All MCs	111	3.0	111	3.0	0.415	6.5	LOS A	2.5	65.1	0.24	0.09	0.24	32.9
Approach			1084	3.0	1084	3.0	0.415	6.5	LOS A	2.5	65.1	0.24	0.09	0.24	32.9
All Vehicles			1853	3.0	1853	3.0	0.415	6.1	LOS A	2.5	65.1	0.29	0.15	0.29	33.0

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).
Roundabout Capacity Model: US HCM 6.
Delay Model: HCM Delay Formula (Stopline Delay: Geometric Delay is not included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: Siegloch M1 implied by US HCM 6 Roundabout Capacity Model.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 1 [2028 Total AM (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

2028 Total AM
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] ft	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed mph
South: Tutt Blvd															
3	L2	All MCs	163	3.0	163	3.0	0.267	8.8	LOS A	1.0	24.5	0.62	0.58	0.62	29.5
8	T1	All MCs	12	3.0	12	3.0	0.267	8.8	LOS A	1.0	24.5	0.62	0.58	0.62	30.1
18	R2	All MCs	52	3.0	52	3.0	0.088	7.1	LOS A	0.3	7.5	0.59	0.56	0.59	32.5
Approach			227	3.0	227	3.0	0.267	8.4	LOS A	1.0	24.5	0.62	0.58	0.62	30.2
East: Research Pkwy															
1	L2	All MCs	25	3.0	25	3.0	0.500	9.6	LOS A	3.2	81.6	0.57	0.41	0.64	31.1
6	T1	All MCs	951	3.0	951	3.0	0.500	9.3	LOS A	3.2	81.6	0.56	0.40	0.62	31.8
16	R2	All MCs	49	3.0	49	3.0	0.500	9.1	LOS A	3.0	77.5	0.55	0.38	0.59	31.7
Approach			1025	3.0	1025	3.0	0.500	9.3	LOS A	3.2	81.6	0.56	0.40	0.62	31.8
North: Tutt Blvd															
7	L2	All MCs	10	3.0	10	3.0	0.281	11.9	LOS B	1.0	24.5	0.70	0.73	0.79	30.0
4	T1	All MCs	9	3.0	9	3.0	0.281	11.9	LOS B	1.0	24.5	0.70	0.73	0.79	30.5
14	R2	All MCs	115	3.0	115	3.0	0.281	11.9	LOS B	1.0	24.5	0.70	0.73	0.79	30.3
Approach			134	3.0	134	3.0	0.281	11.9	LOS B	1.0	24.5	0.70	0.73	0.79	30.3
West: Research Pkwy															
5	L2	All MCs	112	3.0	112	3.0	0.341	5.6	LOS A	1.9	48.3	0.19	0.06	0.19	32.4
2	T1	All MCs	680	3.0	680	3.0	0.341	5.6	LOS A	1.9	48.3	0.19	0.06	0.19	33.3
12	R2	All MCs	110	3.0	110	3.0	0.341	5.6	LOS A	1.9	48.3	0.19	0.06	0.19	33.3
Approach			902	3.0	902	3.0	0.341	5.6	LOS A	1.9	48.3	0.19	0.06	0.19	33.2
All Vehicles			2288	3.0	2288	3.0	0.500	7.9	LOS A	3.2	81.6	0.43	0.30	0.46	32.0

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).
Roundabout Capacity Model: US HCM 6.
Delay Model: HCM Delay Formula (Stopline Delay: Geometric Delay is not included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: Siegloch M1 implied by US HCM 6 Roundabout Capacity Model.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 1 [2028 Total PM (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

2028 Total PM
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] ft	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed mph
South: Tutt Blvd															
3	L2	All MCs	79	3.0	79	3.0	0.162	8.7	LOS A	0.5	13.3	0.63	0.62	0.63	29.7
8	T1	All MCs	9	3.0	9	3.0	0.162	8.7	LOS A	0.5	13.3	0.63	0.62	0.63	30.2
18	R2	All MCs	23	3.0	23	3.0	0.047	8.0	LOS A	0.1	3.8	0.62	0.62	0.62	32.1
Approach			111	3.0	111	3.0	0.162	8.5	LOS A	0.5	13.3	0.63	0.62	0.63	30.1
East: Research Pkwy															
1	L2	All MCs	34	3.0	34	3.0	0.256	5.6	LOS A	1.2	29.6	0.34	0.19	0.34	32.7
6	T1	All MCs	548	3.0	548	3.0	0.256	5.4	LOS A	1.2	29.6	0.33	0.18	0.33	33.5
16	R2	All MCs	8	3.0	8	3.0	0.256	5.3	LOS A	1.1	28.9	0.32	0.18	0.32	33.5
Approach			589	3.0	589	3.0	0.256	5.4	LOS A	1.2	29.6	0.33	0.18	0.33	33.5
North: Tutt Blvd															
7	L2	All MCs	24	3.0	24	3.0	0.173	6.7	LOS A	0.6	15.6	0.55	0.49	0.55	32.0
4	T1	All MCs	16	3.0	16	3.0	0.173	6.7	LOS A	0.6	15.6	0.55	0.49	0.55	32.6
14	R2	All MCs	89	3.0	89	3.0	0.173	6.7	LOS A	0.6	15.6	0.55	0.49	0.55	32.4
Approach			129	3.0	129	3.0	0.173	6.7	LOS A	0.6	15.6	0.55	0.49	0.55	32.3
West: Research Pkwy															
5	L2	All MCs	79	3.0	79	3.0	0.444	7.0	LOS A	2.8	71.9	0.29	0.11	0.29	32.0
2	T1	All MCs	893	3.0	893	3.0	0.444	7.0	LOS A	2.8	71.9	0.29	0.11	0.29	32.7
12	R2	All MCs	167	3.0	167	3.0	0.444	7.0	LOS A	2.8	71.9	0.29	0.11	0.29	32.6
Approach			1140	3.0	1140	3.0	0.444	7.0	LOS A	2.8	71.9	0.29	0.11	0.29	32.7
All Vehicles			1970	3.0	1970	3.0	0.444	6.6	LOS A	2.8	71.9	0.34	0.19	0.34	32.7

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).
Roundabout Capacity Model: US HCM 6.
Delay Model: HCM Delay Formula (Stopline Delay: Geometric Delay is not included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: Siegloch M1 implied by US HCM 6 Roundabout Capacity Model.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 1 [2045 BG AM (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

2045 BG AM
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] ft	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed mph
South: Tutt Blvd															
3	L2	All MCs	149	3.0	149	3.0	0.283	10.6	LOS B	1.0	25.6	0.66	0.68	0.73	28.8
8	T1	All MCs	4	3.0	4	3.0	0.283	10.6	LOS B	1.0	25.6	0.66	0.68	0.73	29.3
18	R2	All MCs	64	3.0	64	3.0	0.132	9.2	LOS A	0.4	11.0	0.65	0.65	0.65	31.5
Approach			217	3.0	217	3.0	0.283	10.2	LOS B	1.0	25.6	0.66	0.67	0.71	29.5
East: Research Pkwy															
1	L2	All MCs	30	3.0	30	3.0	0.628	12.5	LOS B	6.8	175.0	0.69	0.61	1.01	29.9
6	T1	All MCs	1188	3.0	1188	3.0	0.628	12.2	LOS B	6.8	175.0	0.67	0.60	0.99	30.6
16	R2	All MCs	62	3.0	62	3.0	0.628	11.9	LOS B	6.8	173.9	0.66	0.58	0.97	30.5
Approach			1280	3.0	1280	3.0	0.628	12.2	LOS B	6.8	175.0	0.67	0.60	0.99	30.6
North: Tutt Blvd															
7	L2	All MCs	13	3.0	13	3.0	0.427	18.3	LOS C	1.6	39.8	0.80	0.87	1.07	27.6
4	T1	All MCs	5	3.0	5	3.0	0.427	18.3	LOS C	1.6	39.8	0.80	0.87	1.07	28.1
14	R2	All MCs	145	3.0	145	3.0	0.427	18.3	LOS C	1.6	39.8	0.80	0.87	1.07	27.9
Approach			163	3.0	163	3.0	0.427	18.3	LOS C	1.6	39.8	0.80	0.87	1.07	27.9
West: Research Pkwy															
5	L2	All MCs	140	3.0	140	3.0	0.423	6.5	LOS A	2.6	67.7	0.22	0.08	0.22	31.9
2	T1	All MCs	850	3.0	850	3.0	0.423	6.5	LOS A	2.6	67.7	0.22	0.08	0.22	32.8
12	R2	All MCs	124	3.0	124	3.0	0.423	6.5	LOS A	2.6	67.7	0.22	0.08	0.22	32.9
Approach			1114	3.0	1114	3.0	0.423	6.5	LOS A	2.6	67.7	0.22	0.08	0.22	32.7
All Vehicles			2775	3.0	2775	3.0	0.628	10.1	LOS B	6.8	175.0	0.50	0.41	0.67	31.1

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).
Roundabout Capacity Model: US HCM 6.
Delay Model: HCM Delay Formula (Stopline Delay: Geometric Delay is not included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: Siegloch M1 implied by US HCM 6 Roundabout Capacity Model.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 1 [2045 BG PM (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

2045 BG PM
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] ft	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed mph
South: Tutt Blvd															
3	L2	All MCs	60	3.0	60	3.0	0.147	10.5	LOS B	0.4	11.3	0.70	0.70	0.70	28.9
8	T1	All MCs	3	3.0	3	3.0	0.147	10.5	LOS B	0.4	11.3	0.70	0.70	0.70	29.4
18	R2	All MCs	26	3.0	26	3.0	0.069	10.5	LOS B	0.2	5.3	0.71	0.71	0.71	30.9
Approach			89	3.0	89	3.0	0.147	10.5	LOS B	0.4	11.3	0.70	0.70	0.70	29.4
East: Research Pkwy															
1	L2	All MCs	37	3.0	37	3.0	0.317	6.2	LOS A	1.5	39.3	0.36	0.20	0.36	32.4
6	T1	All MCs	685	3.0	685	3.0	0.317	6.1	LOS A	1.5	39.3	0.35	0.19	0.35	33.3
16	R2	All MCs	10	3.0	10	3.0	0.317	5.9	LOS A	1.5	38.3	0.34	0.18	0.34	33.2
Approach			732	3.0	732	3.0	0.317	6.1	LOS A	1.5	39.3	0.35	0.19	0.35	33.2
North: Tutt Blvd															
7	L2	All MCs	30	3.0	30	3.0	0.221	8.0	LOS A	0.8	19.9	0.60	0.56	0.60	31.3
4	T1	All MCs	5	3.0	5	3.0	0.221	8.0	LOS A	0.8	19.9	0.60	0.56	0.60	31.9
14	R2	All MCs	112	3.0	112	3.0	0.221	8.0	LOS A	0.8	19.9	0.60	0.56	0.60	31.7
Approach			148	3.0	148	3.0	0.221	8.0	LOS A	0.8	19.9	0.60	0.56	0.60	31.6
West: Research Pkwy															
5	L2	All MCs	99	3.0	99	3.0	0.530	8.1	LOS A	3.9	99.5	0.33	0.13	0.33	31.5
2	T1	All MCs	1116	3.0	1116	3.0	0.530	8.1	LOS A	3.9	99.5	0.33	0.13	0.33	32.2
12	R2	All MCs	147	3.0	147	3.0	0.530	8.1	LOS A	3.9	99.5	0.33	0.13	0.33	32.1
Approach			1362	3.0	1362	3.0	0.530	8.1	LOS A	3.9	99.5	0.33	0.13	0.33	32.1
All Vehicles			2330	3.0	2330	3.0	0.530	7.6	LOS A	3.9	99.5	0.37	0.20	0.37	32.3

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).
Roundabout Capacity Model: US HCM 6.
Delay Model: HCM Delay Formula (Stopline Delay: Geometric Delay is not included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: Siegloch M1 implied by US HCM 6 Roundabout Capacity Model.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 1 [2045 Total AM (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

2045 Total AM
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] ft	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed mph
South: Tutt Blvd															
3	L2	All MCs	199	3.0	199	3.0	0.391	12.7	LOS B	1.6	41.6	0.70	0.77	0.94	28.1
8	T1	All MCs	13	3.0	13	3.0	0.391	12.7	LOS B	1.6	41.6	0.70	0.77	0.94	28.6
18	R2	All MCs	68	3.0	68	3.0	0.141	9.3	LOS A	0.5	11.7	0.65	0.65	0.65	31.4
Approach			280	3.0	280	3.0	0.391	11.9	LOS B	1.6	41.6	0.69	0.74	0.87	28.9
East: Research Pkwy															
1	L2	All MCs	32	3.0	32	3.0	0.665	14.3	LOS B	7.8	199.5	0.75	0.75	1.24	29.2
6	T1	All MCs	1188	3.0	1188	3.0	0.665	13.9	LOS B	7.9	201.4	0.74	0.73	1.22	29.9
16	R2	All MCs	62	3.0	62	3.0	0.665	13.5	LOS B	7.9	201.4	0.73	0.72	1.20	29.8
Approach			1282	3.0	1282	3.0	0.665	13.9	LOS B	7.9	201.4	0.74	0.73	1.22	29.9
North: Tutt Blvd															
7	L2	All MCs	13	3.0	13	3.0	0.458	20.2	LOS C	1.7	42.7	0.82	0.90	1.12	27.0
4	T1	All MCs	9	3.0	9	3.0	0.458	20.2	LOS C	1.7	42.7	0.82	0.90	1.12	27.4
14	R2	All MCs	145	3.0	145	3.0	0.458	20.2	LOS C	1.7	42.7	0.82	0.90	1.12	27.3
Approach			166	3.0	166	3.0	0.458	20.2	LOS C	1.7	42.7	0.82	0.90	1.12	27.3
West: Research Pkwy															
5	L2	All MCs	140	3.0	140	3.0	0.431	6.6	LOS A	2.7	69.6	0.24	0.08	0.24	31.9
2	T1	All MCs	850	3.0	850	3.0	0.431	6.6	LOS A	2.7	69.6	0.24	0.08	0.24	32.8
12	R2	All MCs	140	3.0	140	3.0	0.431	6.6	LOS A	2.7	69.6	0.24	0.08	0.24	32.8
Approach			1130	3.0	1130	3.0	0.431	6.6	LOS A	2.7	69.6	0.24	0.08	0.24	32.7
All Vehicles			2859	3.0	2859	3.0	0.665	11.2	LOS B	7.9	201.4	0.54	0.49	0.79	30.6

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Roundabout LOS Method: Same as Sign Control.
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LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).
Roundabout Capacity Model: US HCM 6.
Delay Model: HCM Delay Formula (Stopline Delay: Geometric Delay is not included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: Siegloch M1 implied by US HCM 6 Roundabout Capacity Model.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 1 [2045 Total PM (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

2045 Total PM
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] ft	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed mph
South: Tutt Blvd															
3	L2	All MCs	93	3.0	93	3.0	0.240	12.2	LOS B	0.8	19.5	0.72	0.73	0.75	28.4
8	T1	All MCs	10	3.0	10	3.0	0.240	12.2	LOS B	0.8	19.5	0.72	0.73	0.75	28.9
18	R2	All MCs	29	3.0	29	3.0	0.077	10.6	LOS B	0.2	6.0	0.71	0.71	0.71	30.9
Approach			133	3.0	133	3.0	0.240	11.8	LOS B	0.8	19.5	0.72	0.73	0.74	28.9
East: Research Pkwy															
1	L2	All MCs	42	3.0	42	3.0	0.331	6.6	LOS A	1.6	41.0	0.41	0.24	0.41	32.2
6	T1	All MCs	685	3.0	685	3.0	0.331	6.4	LOS A	1.6	41.0	0.40	0.23	0.40	33.1
16	R2	All MCs	10	3.0	10	3.0	0.331	6.3	LOS A	1.6	40.1	0.39	0.22	0.39	33.0
Approach			737	3.0	737	3.0	0.331	6.4	LOS A	1.6	41.0	0.40	0.23	0.40	33.0
North: Tutt Blvd															
7	L2	All MCs	30	3.0	30	3.0	0.246	8.6	LOS A	0.9	22.2	0.62	0.58	0.62	31.1
4	T1	All MCs	16	3.0	16	3.0	0.246	8.6	LOS A	0.9	22.2	0.62	0.58	0.62	31.7
14	R2	All MCs	112	3.0	112	3.0	0.246	8.6	LOS A	0.9	22.2	0.62	0.58	0.62	31.5
Approach			159	3.0	159	3.0	0.246	8.6	LOS A	0.9	22.2	0.62	0.58	0.62	31.4
West: Research Pkwy															
5	L2	All MCs	99	3.0	99	3.0	0.561	8.8	LOS A	4.3	109.6	0.39	0.17	0.39	31.2
2	T1	All MCs	1116	3.0	1116	3.0	0.561	8.8	LOS A	4.3	109.6	0.39	0.17	0.39	31.9
12	R2	All MCs	203	3.0	203	3.0	0.561	8.8	LOS A	4.3	109.6	0.39	0.17	0.39	31.8
Approach			1418	3.0	1418	3.0	0.561	8.8	LOS A	4.3	109.6	0.39	0.17	0.39	31.8
All Vehicles			2447	3.0	2447	3.0	0.561	8.2	LOS A	4.3	109.6	0.43	0.24	0.43	32.0

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).
Roundabout Capacity Model: US HCM 6.
Delay Model: HCM Delay Formula (Stopline Delay: Geometric Delay is not included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: Siegloch M1 implied by US HCM 6 Roundabout Capacity Model.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

Intersection	
Intersection Delay, s/veh	7.9
Intersection LOS	A

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	69	31	25	21	20	22
Future Vol, veh/h	69	31	25	21	20	22
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles, %	3	3	4	4	4	4
Mvmt Flow	77	34	28	23	22	24
Number of Lanes	1	1	1	1	1	2

Approach	WB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	3	2
Conflicting Approach Left	NB		WB
Conflicting Lanes Left	2	0	2
Conflicting Approach Right	SB	WB	
Conflicting Lanes Right	3	2	0
HCM Control Delay, s/veh	8.2	7.5	7.6
HCM LOS	A	A	A

Lane	NBLn1	NBLn2	WBLn1	WBLn2	SBLn1	SBLn2	SBLn3
Vol Left, %	0%	0%	100%	0%	100%	0%	0%
Vol Thru, %	100%	0%	0%	0%	0%	100%	100%
Vol Right, %	0%	100%	0%	100%	0%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	25	21	69	31	20	11	11
LT Vol	0	0	69	0	20	0	0
Through Vol	25	0	0	0	0	11	11
RT Vol	0	21	0	31	0	0	0
Lane Flow Rate	28	23	77	34	22	12	12
Geometry Grp	6	6	6	6	6	6	6
Degree of Util (X)	0.038	0.028	0.111	0.039	0.034	0.017	0.011
Departure Headway (Hd)	4.981	4.278	5.228	4.028	5.486	4.985	3.211
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	723	841	679	877	656	722	1120
Service Time	2.685	1.983	3.008	1.808	3.189	2.688	0.914
HCM Lane V/C Ratio	0.039	0.027	0.113	0.039	0.034	0.017	0.011
HCM Control Delay, s/veh	7.9	7.1	8.7	7	8.4	7.8	5.9
HCM Lane LOS	A	A	A	A	A	A	A
HCM 95th-tile Q	0.1	0.1	0.4	0.1	0.1	0.1	0

Intersection	
Intersection Delay, s/veh	8.1
Intersection LOS	A

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	66	17	29	101	52	45
Future Vol, veh/h	66	17	29	101	52	45
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles, %	2	2	2	2	3	3
Mvmt Flow	73	19	32	112	58	50
Number of Lanes	1	1	1	1	1	2

Approach	WB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	3	2
Conflicting Approach Left	NB		WB
Conflicting Lanes Left	2	0	2
Conflicting Approach Right	SB	WB	
Conflicting Lanes Right	3	2	0
HCM Control Delay, s/veh	8.7	7.8	8
HCM LOS	A	A	A

Lane	NBLn1	NBLn2	WBLn1	WBLn2	SBLn1	SBLn2	SBLn3
Vol Left, %	0%	0%	100%	0%	100%	0%	0%
Vol Thru, %	100%	0%	0%	0%	0%	100%	100%
Vol Right, %	0%	100%	0%	100%	0%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	29	101	66	17	52	23	23
LT Vol	0	0	66	0	52	0	0
Through Vol	29	0	0	0	0	23	23
RT Vol	0	101	0	17	0	0	0
Lane Flow Rate	32	112	73	19	58	25	25
Geometry Grp	6	6	6	6	6	6	6
Degree of Util (X)	0.045	0.135	0.115	0.023	0.09	0.035	0.023
Departure Headway (Hd)	5.036	4.334	5.653	4.453	5.599	5.097	3.34
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	713	829	635	804	641	704	1072
Service Time	2.752	2.05	3.378	2.177	3.32	2.818	1.06
HCM Lane V/C Ratio	0.045	0.135	0.115	0.024	0.09	0.036	0.023
HCM Control Delay, s/veh	8	7.7	9.1	7.3	8.9	8	6.1
HCM Lane LOS	A	A	A	A	A	A	A
HCM 95th-tile Q	0.1	0.5	0.4	0.1	0.3	0.1	0.1

Intersection	
Intersection Delay, s/veh	9
Intersection LOS	A

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	144	82	66	44	51	57
Future Vol, veh/h	144	82	66	44	51	57
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles, %	3	3	4	4	4	4
Mvmt Flow	160	91	73	49	57	63
Number of Lanes	1	1	1	1	1	2

Approach	WB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	3	2
Conflicting Approach Left	NB		WB
Conflicting Lanes Left	2	0	2
Conflicting Approach Right	SB	WB	
Conflicting Lanes Right	3	2	0
HCM Control Delay, s/veh	9.5	8.6	8.5
HCM LOS	A	A	A

Lane	NBLn1	NBLn2	WBLn1	WBLn2	SBLn1	SBLn2	SBLn3
Vol Left, %	0%	0%	100%	0%	100%	0%	0%
Vol Thru, %	100%	0%	0%	0%	0%	100%	100%
Vol Right, %	0%	100%	0%	100%	0%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	66	44	144	82	51	29	29
LT Vol	0	0	144	0	51	0	0
Through Vol	66	0	0	0	0	29	29
RT Vol	0	44	0	82	0	0	0
Lane Flow Rate	73	49	160	91	57	32	32
Geometry Grp	6	6	6	6	6	6	6
Degree of Util (X)	0.113	0.066	0.253	0.114	0.095	0.049	0.033
Departure Headway (Hd)	5.55	4.844	5.701	4.501	6.049	5.545	3.764
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	644	737	629	794	591	644	945
Service Time	3.298	2.591	3.444	2.244	3.798	3.294	1.512
HCM Lane V/C Ratio	0.113	0.066	0.254	0.115	0.096	0.05	0.034
HCM Control Delay, s/veh	9	7.9	10.4	7.8	9.4	8.6	6.6
HCM Lane LOS	A	A	B	A	A	A	A
HCM 95th-tile Q	0.4	0.2	1	0.4	0.3	0.2	0.1

Intersection	
Intersection Delay, s/veh	8.3
Intersection LOS	A

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	70	22	38	106	69	59
Future Vol, veh/h	70	22	38	106	69	59
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles, %	2	2	2	2	3	3
Mvmt Flow	78	24	42	118	77	66
Number of Lanes	1	1	1	1	1	2

Approach	WB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	3	2
Conflicting Approach Left	NB		WB
Conflicting Lanes Left	2	0	2
Conflicting Approach Right	SB	WB	
Conflicting Lanes Right	3	2	0
HCM Control Delay, s/veh	8.9	8	8.3
HCM LOS	A	A	A

Lane	NBLn1	NBLn2	WBLn1	WBLn2	SBLn1	SBLn2	SBLn3
Vol Left, %	0%	0%	100%	0%	100%	0%	0%
Vol Thru, %	100%	0%	0%	0%	0%	100%	100%
Vol Right, %	0%	100%	0%	100%	0%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	38	106	70	22	69	30	30
LT Vol	0	0	70	0	69	0	0
Through Vol	38	0	0	0	0	30	30
RT Vol	0	106	0	22	0	0	0
Lane Flow Rate	42	118	78	24	77	33	33
Geometry Grp	6	6	6	6	6	6	6
Degree of Util (X)	0.06	0.145	0.125	0.031	0.121	0.047	0.031
Departure Headway (Hd)	5.138	4.435	5.785	4.584	5.668	5.166	3.407
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	698	809	620	780	633	694	1049
Service Time	2.863	2.16	3.518	2.318	3.394	2.892	1.133
HCM Lane V/C Ratio	0.06	0.146	0.126	0.031	0.122	0.048	0.031
HCM Control Delay, s/veh	8.2	7.9	9.3	7.5	9.2	8.1	6.2
HCM Lane LOS	A	A	A	A	A	A	A
HCM 95th-tile Q	0.2	0.5	0.4	0.1	0.4	0.1	0.1

Intersection	
Intersection Delay, s/veh	9
Intersection LOS	A

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	144	83	73	44	55	78
Future Vol, veh/h	144	83	73	44	55	78
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles, %	3	3	4	4	4	4
Mvmt Flow	160	92	81	49	61	87
Number of Lanes	1	1	1	1	1	2

Approach	WB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	3	2
Conflicting Approach Left	NB		WB
Conflicting Lanes Left	2	0	2
Conflicting Approach Right	SB	WB	
Conflicting Lanes Right	3	2	0
HCM Control Delay, s/veh	9.6	8.7	8.4
HCM LOS	A	A	A

Lane	NBLn1	NBLn2	WBLn1	WBLn2	SBLn1	SBLn2	SBLn3
Vol Left, %	0%	0%	100%	0%	100%	0%	0%
Vol Thru, %	100%	0%	0%	0%	0%	100%	100%
Vol Right, %	0%	100%	0%	100%	0%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	73	44	144	83	55	39	39
LT Vol	0	0	144	0	55	0	0
Through Vol	73	0	0	0	0	39	39
RT Vol	0	44	0	83	0	0	0
Lane Flow Rate	81	49	160	92	61	43	43
Geometry Grp	6	6	6	6	6	6	6
Degree of Util (X)	0.126	0.067	0.257	0.118	0.103	0.067	0.046
Departure Headway (Hd)	5.612	4.905	5.79	4.589	6.08	5.576	3.794
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	637	726	619	777	588	640	936
Service Time	3.368	2.662	3.541	2.34	3.834	3.33	1.547
HCM Lane V/C Ratio	0.127	0.067	0.258	0.118	0.104	0.067	0.046
HCM Control Delay, s/veh	9.2	8	10.5	8	9.5	8.7	6.7
HCM Lane LOS	A	A	B	A	A	A	A
HCM 95th-tile Q	0.4	0.2	1	0.4	0.3	0.2	0.1

Intersection	
Intersection Delay, s/veh	8.4
Intersection LOS	A

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	70	27	62	106	72	73
Future Vol, veh/h	70	27	62	106	72	73
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles, %	2	2	2	2	3	3
Mvmt Flow	78	30	69	118	80	81
Number of Lanes	1	1	1	1	1	2

Approach	WB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	3	2
Conflicting Approach Left	NB		WB
Conflicting Lanes Left	2	0	2
Conflicting Approach Right	SB	WB	
Conflicting Lanes Right	3	2	0
HCM Control Delay, s/veh	9	8.2	8.3
HCM LOS	A	A	A

Lane	NBLn1	NBLn2	WBLn1	WBLn2	SBLn1	SBLn2	SBLn3
Vol Left, %	0%	0%	100%	0%	100%	0%	0%
Vol Thru, %	100%	0%	0%	0%	0%	100%	100%
Vol Right, %	0%	100%	0%	100%	0%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	62	106	70	27	72	37	37
LT Vol	0	0	70	0	72	0	0
Through Vol	62	0	0	0	0	37	37
RT Vol	0	106	0	27	0	0	0
Lane Flow Rate	69	118	78	30	80	41	41
Geometry Grp	6	6	6	6	6	6	6
Degree of Util (X)	0.099	0.147	0.127	0.039	0.128	0.059	0.039
Departure Headway (Hd)	5.19	4.487	5.896	4.695	5.74	5.238	3.479
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	690	799	607	760	625	684	1026
Service Time	2.922	2.218	3.64	2.439	3.472	2.97	1.211
HCM Lane V/C Ratio	0.1	0.148	0.129	0.039	0.128	0.06	0.04
HCM Control Delay, s/veh	8.5	8	9.5	7.6	9.3	8.3	6.4
HCM Lane LOS	A	A	A	A	A	A	A
HCM 95th-tile Q	0.3	0.5	0.4	0.1	0.4	0.2	0.1

Intersection	
Intersection Delay, s/veh	9.8
Intersection LOS	A

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	180	108	87	55	67	75
Future Vol, veh/h	180	108	87	55	67	75
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles, %	3	3	4	4	4	4
Mvmt Flow	200	120	97	61	74	83
Number of Lanes	1	1	1	1	1	2

Approach	WB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	3	2
Conflicting Approach Left	NB		WB
Conflicting Lanes Left	2	0	2
Conflicting Approach Right	SB	WB	
Conflicting Lanes Right	3	2	0
HCM Control Delay, s/veh	10.4	9.2	9
HCM LOS	B	A	A

Lane	NBLn1	NBLn2	WBLn1	WBLn2	SBLn1	SBLn2	SBLn3
Vol Left, %	0%	0%	100%	0%	100%	0%	0%
Vol Thru, %	100%	0%	0%	0%	0%	100%	100%
Vol Right, %	0%	100%	0%	100%	0%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	87	55	180	108	67	38	38
LT Vol	0	0	180	0	67	0	0
Through Vol	87	0	0	0	0	38	38
RT Vol	0	55	0	108	0	0	0
Lane Flow Rate	97	61	200	120	74	42	42
Geometry Grp	6	6	6	6	6	6	6
Degree of Util (X)	0.157	0.087	0.329	0.157	0.131	0.067	0.047
Departure Headway (Hd)	5.843	5.135	5.913	4.712	6.337	5.832	4.047
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	609	691	604	754	562	609	872
Service Time	3.625	2.916	3.687	2.486	4.12	3.615	1.829
HCM Lane V/C Ratio	0.159	0.088	0.331	0.159	0.132	0.069	0.048
HCM Control Delay, s/veh	9.7	8.4	11.6	8.4	10.1	9	7
HCM Lane LOS	A	A	B	A	B	A	A
HCM 95th-tile Q	0.6	0.3	1.4	0.6	0.4	0.2	0.1

Intersection	
Intersection Delay, s/veh	8.8
Intersection LOS	A

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	87	29	50	133	91	78
Future Vol, veh/h	87	29	50	133	91	78
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles, %	2	2	2	2	3	3
Mvmt Flow	97	32	56	148	101	87
Number of Lanes	1	1	1	1	1	2

Approach	WB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	3	2
Conflicting Approach Left	NB		WB
Conflicting Lanes Left	2	0	2
Conflicting Approach Right	SB	WB	
Conflicting Lanes Right	3	2	0
HCM Control Delay, s/veh	9.4	8.5	8.7
HCM LOS	A	A	A

Lane	NBLn1	NBLn2	WBLn1	WBLn2	SBLn1	SBLn2	SBLn3
Vol Left, %	0%	0%	100%	0%	100%	0%	0%
Vol Thru, %	100%	0%	0%	0%	0%	100%	100%
Vol Right, %	0%	100%	0%	100%	0%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	50	133	87	29	91	39	39
LT Vol	0	0	87	0	91	0	0
Through Vol	50	0	0	0	0	39	39
RT Vol	0	133	0	29	0	0	0
Lane Flow Rate	56	148	97	32	101	43	43
Geometry Grp	6	6	6	6	6	6	6
Degree of Util (X)	0.082	0.19	0.162	0.043	0.164	0.064	0.043
Departure Headway (Hd)	5.324	4.62	6.016	4.815	5.846	5.343	3.583
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	671	774	594	740	613	668	992
Service Time	3.069	2.365	3.77	2.569	3.594	3.092	1.331
HCM Lane V/C Ratio	0.083	0.191	0.163	0.043	0.165	0.064	0.043
HCM Control Delay, s/veh	8.5	8.5	9.9	7.8	9.7	8.5	6.5
HCM Lane LOS	A	A	A	A	A	A	A
HCM 95th-tile Q	0.3	0.7	0.6	0.1	0.6	0.2	0.1

Intersection	
Intersection Delay, s/veh	9.9
Intersection LOS	A

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	180	109	94	55	71	96
Future Vol, veh/h	180	109	94	55	71	96
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles, %	3	3	4	4	4	4
Mvmt Flow	200	121	104	61	79	107
Number of Lanes	1	1	1	1	1	2

Approach	WB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	3	2
Conflicting Approach Left	NB		WB
Conflicting Lanes Left	2	0	2
Conflicting Approach Right	SB	WB	
Conflicting Lanes Right	3	2	0
HCM Control Delay, s/veh	10.6	9.4	9
HCM LOS	B	A	A

Lane	NBLn1	NBLn2	WBLn1	WBLn2	SBLn1	SBLn2	SBLn3
Vol Left, %	0%	0%	100%	0%	100%	0%	0%
Vol Thru, %	100%	0%	0%	0%	0%	100%	100%
Vol Right, %	0%	100%	0%	100%	0%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	94	55	180	109	71	48	48
LT Vol	0	0	180	0	71	0	0
Through Vol	94	0	0	0	0	48	48
RT Vol	0	55	0	109	0	0	0
Lane Flow Rate	104	61	200	121	79	53	53
Geometry Grp	6	6	6	6	6	6	6
Degree of Util (X)	0.171	0.088	0.334	0.162	0.14	0.087	0.06
Departure Headway (Hd)	5.906	5.198	6.004	4.803	6.369	5.864	4.078
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	602	681	594	739	559	605	865
Service Time	3.702	2.993	3.787	2.586	4.161	3.656	1.869
HCM Lane V/C Ratio	0.173	0.09	0.337	0.164	0.141	0.088	0.061
HCM Control Delay, s/veh	9.9	8.5	11.8	8.5	10.2	9.2	7.1
HCM Lane LOS	A	A	B	A	B	A	A
HCM 95th-tile Q	0.6	0.3	1.5	0.6	0.5	0.3	0.2

Intersection	
Intersection Delay, s/veh	8.9
Intersection LOS	A

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	87	34	74	133	94	92
Future Vol, veh/h	87	34	74	133	94	92
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles, %	2	2	2	2	3	3
Mvmt Flow	97	38	82	148	104	102
Number of Lanes	1	1	1	1	1	2

Approach	WB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	3	2
Conflicting Approach Left	NB		WB
Conflicting Lanes Left	2	0	2
Conflicting Approach Right	SB	WB	
Conflicting Lanes Right	3	2	0
HCM Control Delay, s/veh	9.5	8.7	8.8
HCM LOS	A	A	A

Lane	NBLn1	NBLn2	WBLn1	WBLn2	SBLn1	SBLn2	SBLn3
Vol Left, %	0%	0%	100%	0%	100%	0%	0%
Vol Thru, %	100%	0%	0%	0%	0%	100%	100%
Vol Right, %	0%	100%	0%	100%	0%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	74	133	87	34	94	46	46
LT Vol	0	0	87	0	94	0	0
Through Vol	74	0	0	0	0	46	46
RT Vol	0	133	0	34	0	0	0
Lane Flow Rate	82	148	97	38	104	51	51
Geometry Grp	6	6	6	6	6	6	6
Degree of Util (X)	0.123	0.192	0.165	0.052	0.172	0.077	0.052
Departure Headway (Hd)	5.381	4.677	6.13	4.928	5.921	5.418	3.657
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	664	764	583	722	604	658	970
Service Time	3.134	2.43	3.895	2.693	3.678	3.175	1.413
HCM Lane V/C Ratio	0.123	0.194	0.166	0.053	0.172	0.078	0.053
HCM Control Delay, s/veh	8.9	8.6	10.1	8	9.9	8.6	6.6
HCM Lane LOS	A	A	B	A	A	A	A
HCM 95th-tile Q	0.4	0.7	0.6	0.2	0.6	0.2	0.2

Intersection	
Int Delay, s/veh	2.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	109	17	4	152	0	51	0	12	1	0	2
Future Vol, veh/h	1	109	17	4	152	0	51	0	12	1	0	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	100	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	4	2	2	4	2	2	2	2	2	2	2
Mvmt Flow	1	118	18	4	165	0	55	0	13	1	0	2

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	165	0	0	137	0	0	304	304	128	295	313	165
Stage 1	-	-	-	-	-	-	130	130	-	174	174	-
Stage 2	-	-	-	-	-	-	174	174	-	121	139	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1413	-	-	1447	-	-	649	609	922	658	602	879
Stage 1	-	-	-	-	-	-	874	789	-	828	755	-
Stage 2	-	-	-	-	-	-	828	755	-	884	781	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1413	-	-	1447	-	-	644	607	922	646	600	879
Mov Cap-2 Maneuver	-	-	-	-	-	-	644	607	-	646	600	-
Stage 1	-	-	-	-	-	-	873	788	-	825	753	-
Stage 2	-	-	-	-	-	-	823	753	-	870	781	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	0.06	0.19	10.85	9.61
HCM LOS			B	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	684	1413	-	-	1447	-	-	785
HCM Lane V/C Ratio	0.1	0.001	-	-	0.003	-	-	0.004
HCM Control Delay (s/veh)	10.9	7.5	-	-	7.5	-	-	9.6
HCM Lane LOS	B	A	-	-	A	-	-	A
HCM 95th %tile Q(veh)	0.3	0	-	-	0	-	-	0

Intersection	
Int Delay, s/veh	1.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	3	133	59	13	63	1	35	0	8	1	0	2
Future Vol, veh/h	3	133	59	13	63	1	35	0	8	1	0	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	100	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	3	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	3	145	64	14	68	1	38	0	9	1	0	2

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	70	0	0	209	0	0	280	281	177	248	313	69
Stage 1	-	-	-	-	-	-	183	183	-	97	97	-
Stage 2	-	-	-	-	-	-	97	98	-	151	215	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1531	-	-	1362	-	-	672	627	866	705	603	994
Stage 1	-	-	-	-	-	-	819	748	-	909	814	-
Stage 2	-	-	-	-	-	-	910	814	-	851	725	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1531	-	-	1362	-	-	663	620	866	689	595	994
Mov Cap-2 Maneuver	-	-	-	-	-	-	663	620	-	689	595	-
Stage 1	-	-	-	-	-	-	817	747	-	900	806	-
Stage 2	-	-	-	-	-	-	898	806	-	841	723	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	0.11	1.3	10.57	9.17
HCM LOS			B	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	693	1531	-	-	1362	-	-	866
HCM Lane V/C Ratio	0.067	0.002	-	-	0.01	-	-	0.004
HCM Control Delay (s/veh)	10.6	7.4	-	-	7.7	-	-	9.2
HCM Lane LOS	B	A	-	-	A	-	-	A
HCM 95th %tile Q(veh)	0.2	0	-	-	0	-	-	0

Intersection	
Int Delay, s/veh	1.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	143	17	4	199	0	51	0	12	1	0	2
Future Vol, veh/h	1	143	17	4	199	0	51	0	12	1	0	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	100	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	4	2	2	4	2	2	2	2	2	2	2
Mvmt Flow	1	155	18	4	216	0	55	0	13	1	0	2

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	216	0	0	174	0	0	392	392	165	383	401	216
Stage 1	-	-	-	-	-	-	167	167	-	225	225	-
Stage 2	-	-	-	-	-	-	225	225	-	158	176	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1353	-	-	1403	-	-	567	544	880	575	538	824
Stage 1	-	-	-	-	-	-	835	760	-	778	718	-
Stage 2	-	-	-	-	-	-	778	718	-	845	753	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1353	-	-	1403	-	-	564	542	880	565	535	824
Mov Cap-2 Maneuver	-	-	-	-	-	-	564	542	-	565	535	-
Stage 1	-	-	-	-	-	-	834	760	-	775	715	-
Stage 2	-	-	-	-	-	-	773	715	-	831	753	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	0.05	0.15	11.71	10.06
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	605	1353	-	-	1403	-	-	714
HCM Lane V/C Ratio	0.113	0.001	-	-	0.003	-	-	0.005
HCM Control Delay (s/veh)	11.7	7.7	-	-	7.6	-	-	10.1
HCM Lane LOS	B	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	0.4	0	-	-	0	-	-	0

Intersection	
Int Delay, s/veh	1.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	3	174	59	13	82	1	35	0	8	1	0	2
Future Vol, veh/h	3	174	59	13	82	1	35	0	8	1	0	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	100	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	3	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	3	189	64	14	89	1	38	0	9	1	0	2

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	90	0	0	253	0	0	345	346	221	314	378	90
Stage 1	-	-	-	-	-	-	228	228	-	118	118	-
Stage 2	-	-	-	-	-	-	117	118	-	196	260	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1505	-	-	1312	-	-	609	577	818	639	554	968
Stage 1	-	-	-	-	-	-	775	716	-	887	798	-
Stage 2	-	-	-	-	-	-	887	798	-	806	693	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1505	-	-	1312	-	-	600	570	818	624	547	968
Mov Cap-2 Maneuver	-	-	-	-	-	-	600	570	-	624	547	-
Stage 1	-	-	-	-	-	-	773	714	-	877	789	-
Stage 2	-	-	-	-	-	-	876	789	-	796	692	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	0.09	1.05	11.16	9.42
HCM LOS			B	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	631	1505	-	-	1312	-	-	818
HCM Lane V/C Ratio	0.074	0.002	-	-	0.011	-	-	0.004
HCM Control Delay (s/veh)	11.2	7.4	-	-	7.8	-	-	9.4
HCM Lane LOS	B	A	-	-	A	-	-	A
HCM 95th %tile Q(veh)	0.2	0	-	-	0	-	-	0

Intersection	
Int Delay, s/veh	1.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	4	0	12	30	0	10	4	152	7	3	120	1
Future Vol, veh/h	4	0	12	30	0	10	4	152	7	3	120	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	100	-	150	100	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	4	2	2	4	2
Mvmt Flow	4	0	13	33	0	11	4	165	8	3	130	1

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	311	319	131	311	312	165	132	0	0	173	0	0
Stage 1	138	138	-	174	174	-	-	-	-	-	-	-
Stage 2	174	182	-	137	138	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	641	598	919	642	603	879	1454	-	-	1404	-	-
Stage 1	866	783	-	828	755	-	-	-	-	-	-	-
Stage 2	828	749	-	866	782	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	630	594	919	629	600	879	1454	-	-	1404	-	-
Mov Cap-2 Maneuver	630	594	-	629	600	-	-	-	-	-	-	-
Stage 1	864	781	-	825	753	-	-	-	-	-	-	-
Stage 2	815	747	-	852	781	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	9.46	10.68	0.18	0.18
HCM LOS	A	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1454	-	-	824	677	1404	-	-
HCM Lane V/C Ratio	0.003	-	-	0.021	0.064	0.002	-	-
HCM Control Delay (s/veh)	7.5	-	-	9.5	10.7	7.6	-	-
HCM Lane LOS	A	-	-	A	B	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0.2	0	-	-

Intersection	
Int Delay, s/veh	2.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	3	0	8	30	0	10	14	74	7	3	136	5
Future Vol, veh/h	3	0	8	30	0	10	14	74	7	3	136	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	100	-	150	100	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	3	3	2
Mvmt Flow	3	0	9	33	0	11	15	80	8	3	148	5

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	268	276	151	265	271	80	153	0	0	88	0	0
Stage 1	157	157	-	111	111	-	-	-	-	-	-	-
Stage 2	111	118	-	154	160	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.13	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.227	-	-
Pot Cap-1 Maneuver	685	632	896	687	636	980	1427	-	-	1501	-	-
Stage 1	845	768	-	894	804	-	-	-	-	-	-	-
Stage 2	894	798	-	848	766	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	668	624	896	672	628	980	1427	-	-	1501	-	-
Mov Cap-2 Maneuver	668	624	-	672	628	-	-	-	-	-	-	-
Stage 1	843	766	-	885	795	-	-	-	-	-	-	-
Stage 2	875	789	-	838	764	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	9.46	10.25	1.11	0.15
HCM LOS	A	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1427	-	-	820	729	1501	-	-
HCM Lane V/C Ratio	0.011	-	-	0.015	0.06	0.002	-	-
HCM Control Delay (s/veh)	7.5	-	-	9.5	10.2	7.4	-	-
HCM Lane LOS	A	-	-	A	B	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0	0.2	0	-	-

Intersection	
Int Delay, s/veh	1.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	4	0	12	30	0	10	4	199	7	3	154	1
Future Vol, veh/h	4	0	12	30	0	10	4	199	7	3	154	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	100	-	150	100	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	4	2	2	4	2
Mvmt Flow	4	0	13	33	0	11	4	216	8	3	167	1

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	399	407	168	399	400	216	168	0	0	224	0	0
Stage 1	174	174	-	225	225	-	-	-	-	-	-	-
Stage 2	225	233	-	174	175	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	561	533	876	561	538	824	1409	-	-	1345	-	-
Stage 1	827	755	-	778	718	-	-	-	-	-	-	-
Stage 2	778	712	-	828	754	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	550	530	876	550	535	824	1409	-	-	1345	-	-
Mov Cap-2 Maneuver	550	530	-	550	535	-	-	-	-	-	-	-
Stage 1	825	753	-	775	715	-	-	-	-	-	-	-
Stage 2	765	710	-	814	752	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	9.83	11.47	0.14	0.15
HCM LOS	A	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1409	-	-	763	600	1345	-	-
HCM Lane V/C Ratio	0.003	-	-	0.023	0.072	0.002	-	-
HCM Control Delay (s/veh)	7.6	-	-	9.8	11.5	7.7	-	-
HCM Lane LOS	A	-	-	A	B	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0.2	0	-	-

Intersection	
Int Delay, s/veh	1.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	3	0	8	30	0	10	14	93	7	3	177	5
Future Vol, veh/h	3	0	8	30	0	10	14	93	7	3	177	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	100	-	150	100	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	3	3	2
Mvmt Flow	3	0	9	33	0	11	15	101	8	3	192	5

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	333	341	195	330	336	101	198	0	0	109	0	0
Stage 1	202	202	-	132	132	-	-	-	-	-	-	-
Stage 2	132	139	-	199	204	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.13	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.227	-	-
Pot Cap-1 Maneuver	620	581	846	623	585	954	1375	-	-	1476	-	-
Stage 1	800	734	-	872	787	-	-	-	-	-	-	-
Stage 2	872	781	-	803	732	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	605	573	846	608	577	954	1375	-	-	1476	-	-
Mov Cap-2 Maneuver	605	573	-	608	577	-	-	-	-	-	-	-
Stage 1	798	733	-	862	779	-	-	-	-	-	-	-
Stage 2	853	773	-	793	731	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	9.79	10.76	0.94	0.12
HCM LOS	A	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1375	-	-	763	669	1476	-	-
HCM Lane V/C Ratio	0.011	-	-	0.016	0.065	0.002	-	-
HCM Control Delay (s/veh)	7.6	-	-	9.8	10.8	7.4	-	-
HCM Lane LOS	A	-	-	A	B	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0	0.2	0	-	-