

COYOTE CREEK ELEMENTARY
TO TRAILBLAZER ELEMENTARY
CONSOLIDATION

Traffic Impact Study

Project Number: 1124175

Prepared For: Douglas County
School District

March 21, 2025

DIBBLE



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Highlands Ranch, Colorado

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Prepared For: Douglas County School District
Planning and Construction
2808 Highway 85, Building B
Castle Rock, Colorado 80109

March 21, 2025



Nicholas J Westphal, PE
Project Manager

Dibble & Associates Consulting Engineers, Inc., dba Dibble





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EXECUTIVE SUMMARY

Douglas County School District is considering options for consolidating schools in Highlands Ranch, Colorado. One option being considered is moving Coyote Creek Elementary into Trailblazer Elementary. This traffic impact study addresses existing traffic patterns and potential traffic challenges at Trailblazer Elementary, while considering the anticipated increase in traffic caused by the school consolidation.

Trailblazer has a parking area on the southeast side of the building, which is connected to a two-lane pick-up and drop-off access drive. There is also another drop-off and pick-up drive on the west side of the building. Two pedestrian crosswalks are located to the south of the school crossing Hackberry Street, and another two to the west, crossing the same street. School bus service is provided for individuals within Trailblazer's attendance boundary but is restricted to individuals living more than one mile from the school. This bus service will be expanded for Coyote Creek students who qualify after relocating to Trailblazer.

The projected 2028-2029 combined enrollment is 1,211 students. These projected combined enrollment numbers are 138 percent more than the previous maximum Trailblazer enrollment. When the existing traffic is relocated to the new school, additional students will be eligible to take the bus. It is anticipated that about 1/3 of the Coyote Creek students will be newly eligible to take the bus to school. Students who currently walk to Coyote Creek are unlikely to walk to Trailblazer due to distance and crossing a major roadway, therefore, it is assumed that these students will now be driven to school and count as a new vehicular trip to Trailblazer. Taking the estimated street parking trips into account, the ingress/egress trips, pedestrians and bicyclists converted to vehicle trips, anticipated carpooling and the subtraction of new bus ridership, the resulting increase in trip demand for Trailblazer is about 314 trips during the morning peak hour and 290 trips during the afternoon peak hour.

Traffic will be increased with the additional enrollment, but additional bus service will be offered, limiting the impact of the increased enrollment. Consolidating school populations at Trailblazer would cause the school population to more than double its previous historical maximum enrollment. To address existing and potential future traffic challenges the following mitigation measures are recommended:

- Coordinate with Douglas County to modify signal timing at Highlands Ranch Parkway and Spring Hill Parkway. Douglas County has a robust signal timing program which optimizes timing for prevailing conditions.
- Coordinate with Douglas County to convert the Hackberry Street and Spring Hill Parkway intersection to a 4-way stop. This modification would increase traffic flow during school drop-off and pick-up but reduce flow during normal conditions. Douglas County follows MUTCD standards for determining the proper intersection traffic control and would not add pavement markings or signage unless warranted.
- Add pavement markings and signage on Hackberry Street at Spring Hill Parkway to create a shared eastbound through/left-turn lane and a dedicated eastbound right-turn lane. The existing pavement width should accommodate the layout. Douglas County follows MUTCD standards for determining the proper intersection traffic control and would not add pavement markings or signage unless warranted.

1. INTRODUCTION

1.1 Study Purpose and Scope

The purpose of this Traffic Impact Study (TIS) is to discuss the existing traffic patterns at Trailblazer Elementary (Trailblazer) and potential mitigation measures for current traffic and potential increased traffic due to increased enrollment caused by school consolidations. A potential school consolidation option includes having Coyote Creek Elementary (Coyote Creek) consolidate into Trailblazer.

The scope of this TIS includes assessing school driveways, nearby intersections, school parking lots, school drop-off and pick-up locations, traffic flow, bicycle and pedestrian facilities, and general traffic challenges at Trailblazer.

1.2 Study Area

Trailblazer Elementary School is located at 9760 Hackberry Street in the western region of Highlands Ranch. This is near the intersection of Spring Hill Parkway and Hackberry Street. The parcel number for the property is 222908424021. A vicinity map showing the school's location is provided as **Figure 1**.



Figure 1 – Vicinity Map

The study area was determined through consultation with Douglas County School District (DCSD)) and Douglas County and potentially impacted intersections were identified. Each school access and adjacent streets are included in the TIS study area as well as the following intersections:

- Highlands Ranch Parkway at Westridge Village Parkway
- Highlands Ranch Parkway at Wildcat Reserve Parkway/Spring Hill Parkway

Neighborhood local and collector streets are analyzed for safety challenges, bicycle and pedestrian facilities, parking availability, and queueing lengths. Larger intersections at arterial streets are analyzed for the same items, but also for accident history and traffic signal warrant criteria if a traffic signal is not present.

1.3 School Description

Trailblazer

Trailblazer has a start time of 8:30 AM and an end time of 3:30 PM. The school is located in the neighborhood to the northwest of the intersection of Wildcat Reserve Parkway at Highlands Ranch Parkway. Trailblazer has a parking area on the southeast side of the building, which is connected to a two-lane pick-up and drop-off access drive. There is also another drop-off and pick-up drive on the west side of the building. Two pedestrian crosswalks are located to the south of the school crossing Hackberry Street, and another two to the west, crossing the same street. Trailblazer has a maximum Capacity of 800 students but the largest enrollment since 2013 is 508 students.

School bus service is provided for individuals within Trailblazer's attendance boundary but is restricted to individuals living more than one mile from the school. **Figure 2** depicts Trailblazer's local attendance boundary in grey with the orange circle representing the walking radius. As depicted, the entire local attendance boundary is within one mile, so no local bus service is provided. However, Trailblazer does serve a portion of the developing Sterling Ranch neighborhood to the southwest and one school bus route is provided from that neighborhood to Trailblazer. As of November 2024, 20 individuals are eligible to receive bus service, and 14 individuals have used the bus service which is a 70 percent rate.

Coyote Creek

Coyote Creek has a start time of 8:40 AM and an end time of 3:30 PM. The school is located in the neighborhood to the south of the intersection of Highlands Ranch Parkway at Wildcat Reserve Parkway. Coyote Creek has a maximum Capacity of 800 students but the largest enrollment since 2013 is 502 students.

School bus service is provided for individuals within Coyote Creek's attendance boundary but is restricted to individuals living more than one mile from the school. **Figure 3** depicts Coyote Creek's local attendance boundary in blue with the orange circle representing the walking radius. As depicted, the entire local attendance boundary is within one mile, so no local bus service is provided. However, Coyote Creek does serve a portion of the developing Sterling Ranch neighborhood to the southwest and three school bus routes are provided from that neighborhood to Coyote Creek. As of November 2024, 169 individuals are eligible to receive bus service, and 141 individuals have used the bus service which is an 83 percent rate. Many of the students attending Coyote Creek do not live within 1 mile of Trailblazer. Therefore, they would qualify for bus service to Trailblazer.

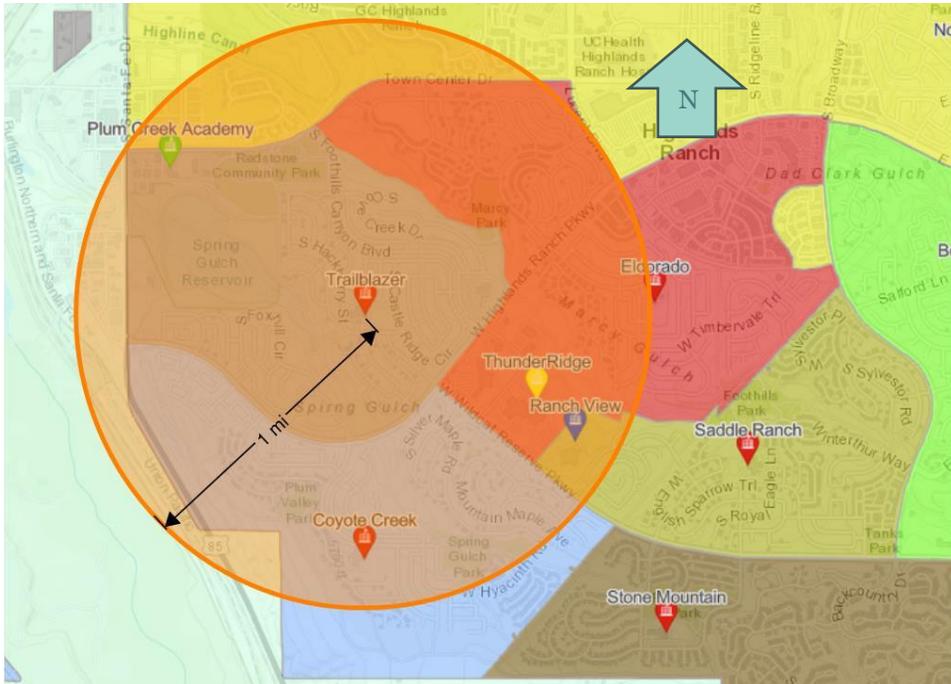


Figure 2 – Trailblazer Bus Service Map

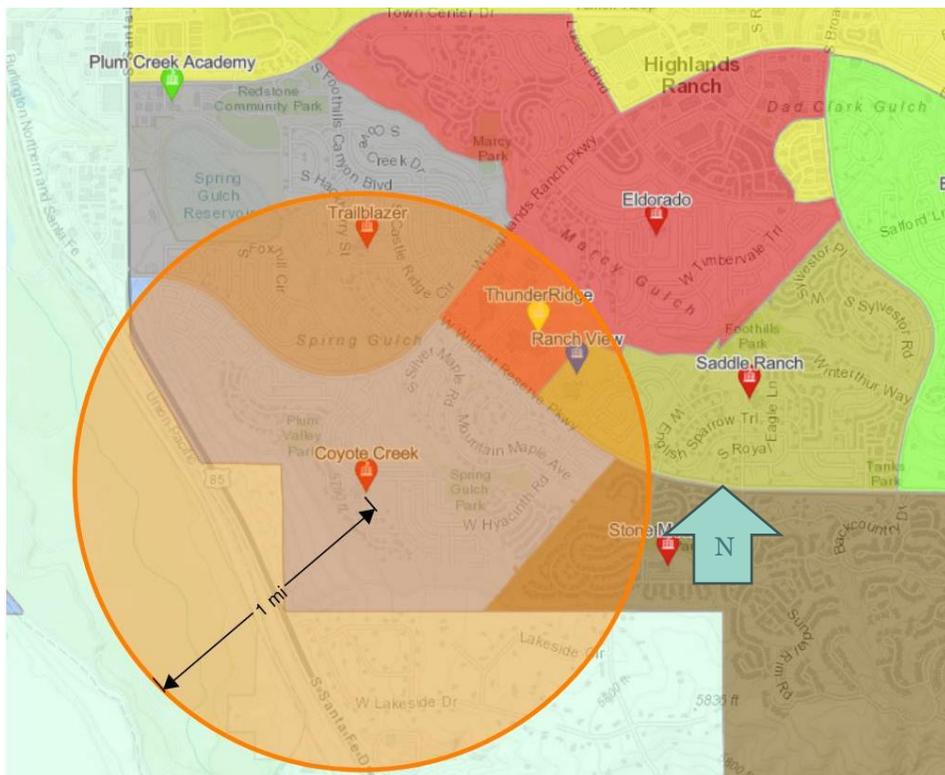


Figure 3 – Coyote Creek Bus Service Map

2. EXISTING CONDITIONS

2.1 Site Observation

A site observation was performed at Trailblazer on November 19, 2024. Field notes from the site observation are included in **Appendix A**. The morning site observation was conducted from 7:45 AM through 9:15 AM and the afternoon site observation was conducted from 2:45 PM through 4:00 PM. Key observations included:

- Increased Congestion on Hackberry Street and Spring Hill Parkway
- High volumes of pedestrians crossing Hackberry Street
- Sight visibility challenges while exiting the parking lot

2.2 Roadway Network

The Highlands Ranch roadway network is maintained by Douglas County. Trailblazer is situated within a built-out neighborhood and is surrounded by local and neighborhood collector streets. The main accesses to the neighborhood are from Highlands Ranch Parkway at Spring Hill Parkway and Highlands Ranch Parkway at Foothills Canyon Boulevard with Highlands Ranch Parkway being the main arterial street closest to the school. Spring Hill Parkway extends from the school entrance to a signalized intersection at Highlands Ranch Parkway. Additionally, a signalized intersection is present at Wildcat Reserve Parkway & Highlands Ranch Parkway.

Coyote Creek traffic driving to Trailblazer will mainly use Highlands Ranch Parkway from Westridge Village Parkway, or Wildcat Reserve Parkway. **Figure 4** depicts the most likely route that would be taken from Coyote Creek to Trailblazer. There is a large portion of traffic that also comes from further west on Highlands Ranch Parkway from the Sterling Ranch neighborhood.

School zone flashers operate from 8:10 to 8:50 AM and from 3:20 to 4:00 PM. Flashers are located on Hackberry Street, offset approximately 100 feet outside the school property line.



Figure 4 – Route from Coyote Creek to Trailblazer

Highlands Ranch Parkway at Westridge Village Parkway

The intersection of Highlands Ranch Parkway at Westridge Village Parkway is signalized with protected/permissive left-turn lanes/phases for Highlands Ranch Parkway Traffic and permissive movements for Westridge Village Parkway. **Figure 5** shows an aerial of the intersection with the current intersection layout.

The Highlands Ranch Parkway left-turn lanes have approximately 100 feet of storage length and 100 feet of taper length before transitioning to a striped median. There are two through lanes and bike lanes provided for each direction of traffic with no dedicated right-turn lanes.

Westridge Village Parkway extends to the south and Deer Creek Street extends to the north. Deer Creek Street at the intersection does not widen, but striping is provided for a through/right-turn lane in each direction and a left-turn lane to eastbound Highlands Ranch Parkway. Westridge Village Parkway widens to provide a dedicated right-turn lane, through lane, and left-turn lane with approximately 100 feet of storage. Bike lanes are provided on Westridge Village Parkway, but merge with traffic prior to the intersection.



Figure 5 – Highlands Ranch Parkway at Westridge Village Parkway

Highlands Ranch Parkway at Wildcat Reserve Parkway/Spring Hill Parkway

The intersection of Highlands Ranch Parkway at Wildcat Reserve Parkway and Spring Hill Parkway is signalized with protected/permissive left-turn lanes/phases for Highlands Ranch Parkway Traffic and protected/permissive movements for Wildcat Reserve Parkway and Spring Hill Parkway. **Figure 6** shows an aerial of the intersection with the current intersection layout.

Highlands Ranch Parkway left-turn lanes have approximately 125 feet of storage length and 75 feet of taper length for eastbound traffic, and approximately 220 feet of storage length and 80 feet of taper length for westbound traffic, before transitioning to a striped median. There are two through lanes and one bike lane provided for each direction of traffic with a dedicated right-turn lane in each direction. The westbound dedicated right-turn lane is a drop lane starting at Foothills Canyon Boulevard.

Wildcat Reserve Parkway extends to the southeast and Spring Hill Parkway extends to the northwest of the intersection. Each approach provides one through lane and a bike lane in each direction. Wildcat Reserve Parkway has dual dedicated left turn lanes, which combine to provide approximately 770 feet of storage, and a dedicated right turn lane. The left turn lane contains 140 feet of storage with a 90-foot taper.

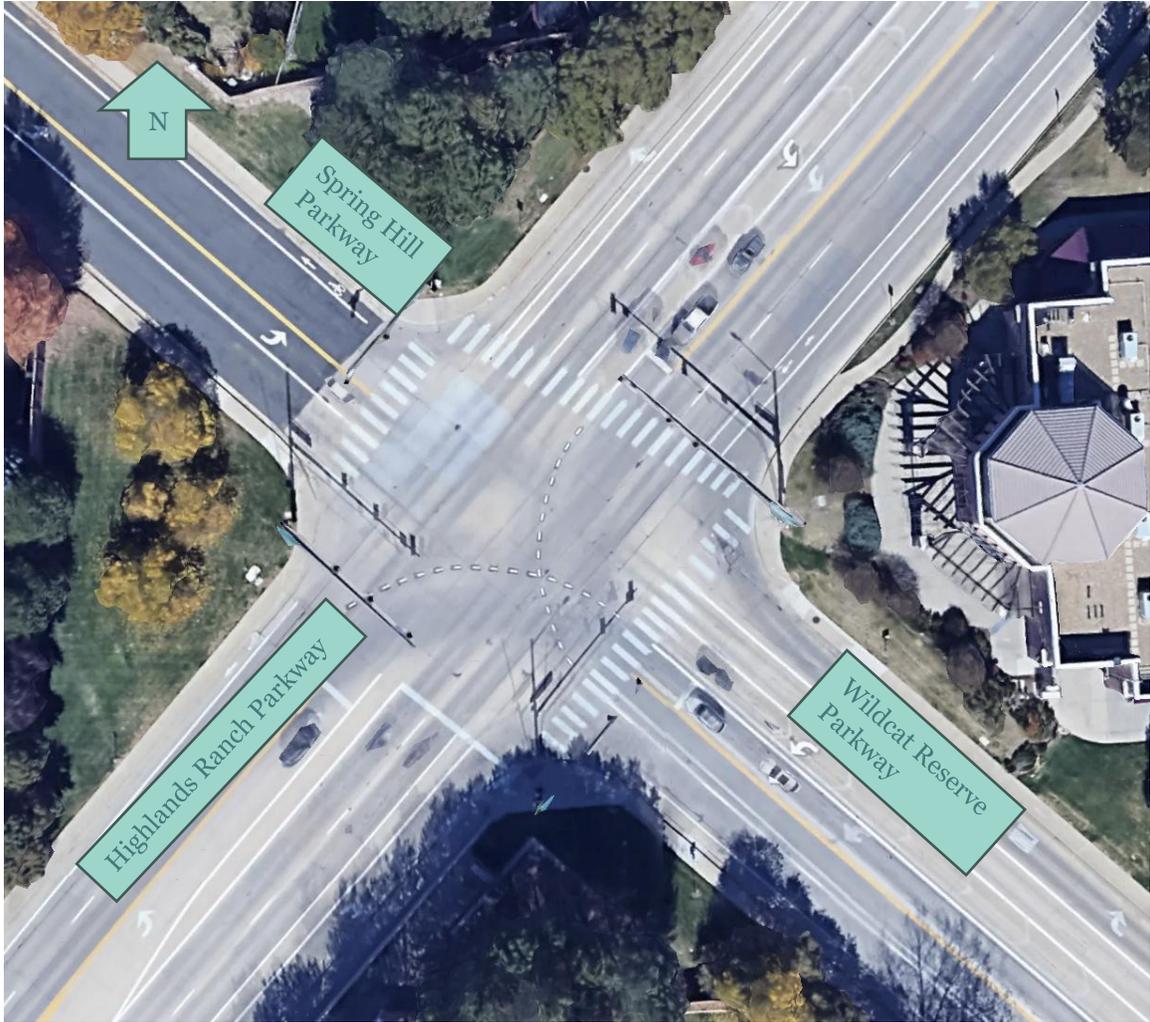


Figure 6 – Highlands Ranch Parkway at Wildcat Reserve Parkway/Spring Hill Parkway

Roadway Characteristics

General features of the roadways along the most likely route from Coyote Creek to Trailblazer are summarized in **Table 1**.

Table 1 – Roadway Characteristics

Roadway	Westridge Village Parkway	Highlands Ranch Parkway	Spring Hill Parkway
Speed Limit	25 mph	45 mph	25 mph
Number of Through Lanes	2	4	2
Lane Width	11 feet	12 feet	12 feet
Bike Lane Width	5 feet	5 feet	5 feet
Median	None	Striped	None
On-Street Parking	West side	None	None

2.3 Traffic Volumes

Traffic data collection was conducted by Rekor Systems (All Traffic Data) on Wednesday, November 13, 2024. Traffic volumes were collected at the following applicable intersections:

- Highlands Ranch Parkway at Westridge Village Parkway
- Highlands Ranch Parkway at Wildcat Reserve Parkway/Spring Hill Parkway
- Hackberry Street at east parking lot entrance
- Hackberry Street at west parking lot entrance
- Hackberry Street at south bus loop entrance
- Hackberry Street at north bus loop entrance

Traffic count data is summarized in **Table 2** and is included in **Appendix B**. The existing traffic is shown in **Figure 107**.

2.4 Existing Level of Service

The existing capacity analysis for the key intersections included in **Table 2** was evaluated using Synchro 11 Software (Synchro). The resulting level of service (LOS) and delay are summarized in **Table 8** provided in **Section 4** of this report for comparison to the future projected traffic capacity analysis.

Existing traffic signal timing plans provided by Douglas County are included in **Appendix C**.

Level of service reports from Synchro are included in **Appendix D**.

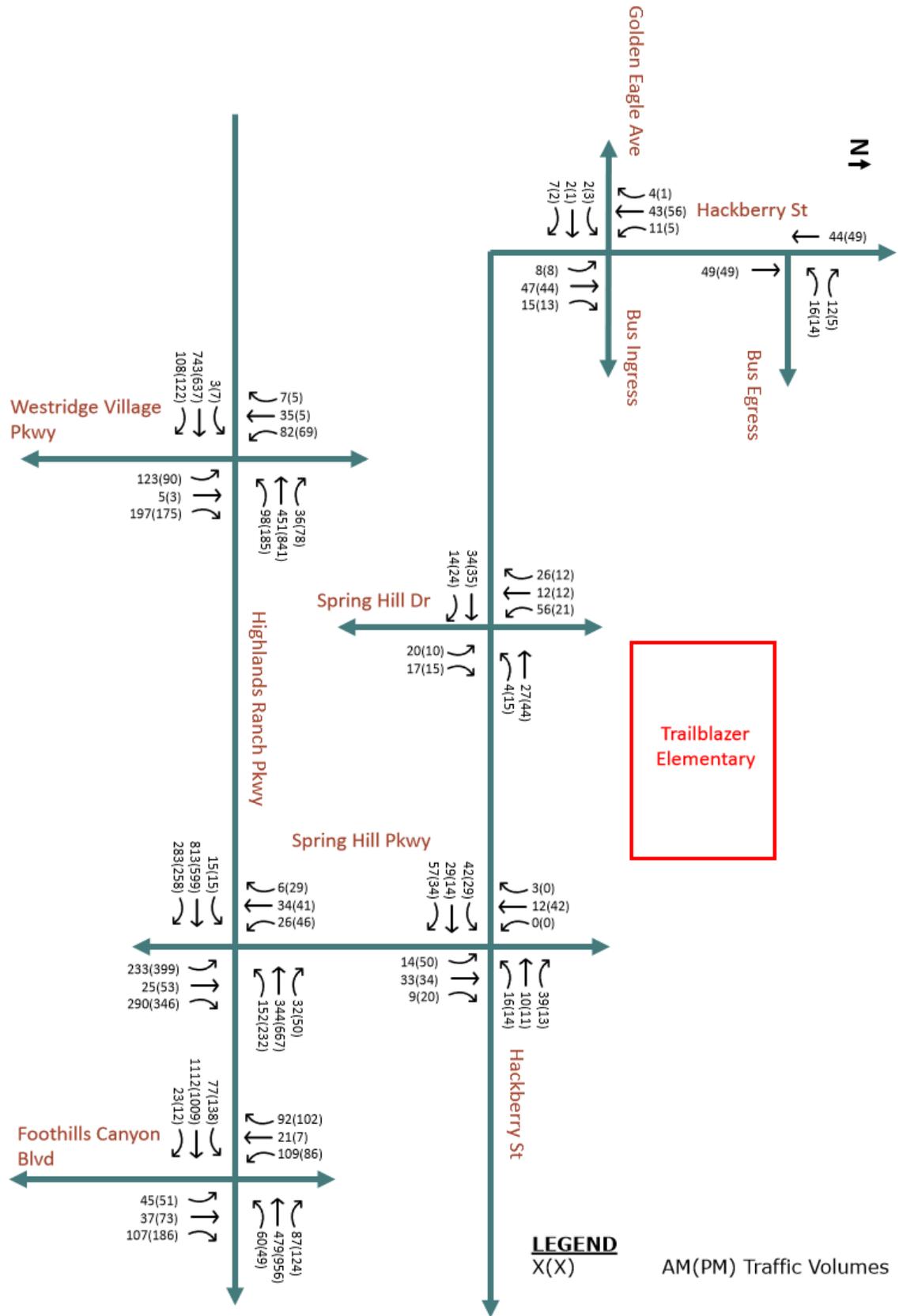


Figure 7 – Existing Traffic



Table 2 – Traffic Volume Summary

Intersection	Peak Hour	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Hackberry St & Bus Egress	AM	-	-	-	16	-	12	-	49	-	-	44	-
	PM	-	-	-	14	-	5	-	49	-	-	49	-
Hackberry St & Golden Eagle Ave/Bus Ingress	AM	2	2	7	-	-	-	8	47	15	11	43	4
	PM	3	1	2	-	-	-	8	44	13	5	56	1
Hackberry St & Spring Hill Dr	AM	-	34	14	4	27	-	20	-	17	56	12	26
	PM	-	35	24	15	44	-	10	-	15	21	12	12
Hackberry St & Spring Hill Pkwy	AM	42	29	57	16	10	39	14	33	9	0	12	3
	PM	29	14	34	14	11	13	50	34	20	0	42	0
Spring Hill Pkwy & Highlands Ranch Pkwy	AM	15	813	283	152	344	32	233	25	290	26	34	6
	PM	15	599	258	232	667	50	399	53	346	46	41	29
Westridge Village Pkwy & Highland Ranch Pkwy	AM	3	743	108	98	451	36	123	5	197	82	5	7
	PM	7	637	122	185	841	78	90	3	175	69	5	5
Highlands Ranch Pkwy & Foothills Canyon Blvd	AM	77	1112	23	60	479	87	45	37	107	109	21	92
	PM	138	1009	12	49	956	124	51	73	186	86	7	102

2.5 Traffic Safety Analysis

Intersection Crash Analysis

Crash history was reviewed at the intersections of Highlands Ranch Parkway at Westridge Village Parkway and Highlands Ranch Parkway at Wildcat Reserve Parkway. Crashes were reviewed for the period between 2019 and 2024. **Table 3** Summarizes the year-by-year crash data for the intersections.

Crash diagrams and a listing of crashes are provided in **Appendix E**.

Highlands Ranch Parkway and Westridge Village Parkway

There was a total of 18 crashes at Highlands Ranch Parkway and Wildcat Reserve Parkway over the course of the study period. Five of these involved injuries. It is not known how many of these accidents involved a left turn, how many were at night, or how many involved a 3rd vehicle or bicycle.

Highlands Ranch Parkway and Wildcat Reserve Parkway

There was a total of 42 crashes at Highlands Ranch Parkway and Wildcat Reserve Parkway over the course of the study period. Nine of these involved injuries. Of the 42 crashes, 22 involved a left turn, and 6 were at night. Two of these accidents involved a 3rd vehicle and one involved a bicycle.

Table 3 – Annual Crash Summary

Year	Highlands Ranch Pkwy & Westridge Village Pkwy	Highlands Ranch Pkwy & Wildcat Reserve Parkway
2019	3	8
2020	2	5
2021	2	8
2022	4	10
2023	3	6
2024	4	5



School Safety

Students are picked up and dropped off primarily via the parking lot to the southeast of the school building. A two-lane, one-way aisle facilitates traffic, with the right lane used to pick-up and drop-off students, and the left lane used to exit the queue. On-street parking is provided for both sides of Hackberry Street. Bike lanes are not present. In the morning hours, drivers exiting the parking lot appeared to have trouble turning right onto Hackberry, due to the low sun and the limited visibility from the on-street parking.

3. TRIP PROJECTIONS

3.1 Projected Traffic

Douglas County School District (DCSD) is considering a potential school consolidation option that would consolidate Coyote Creek Elementary into Trailblazer. **Table 4** provides data on student enrollment for Coyote Creek.

Table 4 – School Enrollment

School	Ideal Capacity per DCSD	Maximum Historic Enrollment	2023-2024 Enrollment Count*	Projected 2028-2029 Enrollment*
Coyote Creek	506	502	502	808
Trailblazer	437	508	314	403
Combined	-	-	-	1,211

*Enrollment values include Pre-School through 6th Grade.

The projected 2028-2029 combined enrollment is 1,211 students. The projected combined enrollment numbers are 138 percent more than the previous maximum Trailblazer enrollment.

3.2 Trip Generation

Trip generation calculations were performed based on the number of additional students that will be transferring from Coyote Creek to Trailblazer. For the purposes of this report, it is assumed the existing 2024 Trailblazer traffic and enrollment will see negligible changes by the 2025-2026 school year. Therefore, the trip generation calculations do not focus on the total future enrollment for Trailblazer with the addition of Coyote Creek students. The trip generation calculations are therefore only based on the existing Coyote Creek traffic and enrollment. The trip generation was calculated multiple ways to account for the transfer of Coyote Creek students to Trailblazer. First the Institute of Transportation Engineers (ITE) Trip Generation web-based application was used to calculate the trip generation for three different types of elementary schools or land use codes (LUC) as follows:

- Public Elementary School (LUC 520)
- Private School K-8 (LUC 530)
- Charter School (LUC 536)

The relocation of students from one elementary school to the other has similarities to each of the three land uses evaluated using the ITE Trip Generation approach, however, this is a unique scenario and therefore the three land uses are not entirely representative of this scenario. A unique approach was therefore evaluated using existing traffic data and field observations at Coyote Creek to understand the current traffic demand at the school and how that traffic demand is anticipated to change when relocated to Trailblazer. The following considerations were taken into account to determine the anticipated number of trips added to Trailblazer for this scenario:



- Calculate the existing ingress and egress traffic for parent drop-off and pick-up in the designated parking areas (parking lot and bus areas) using the existing traffic data collected
- Field observations of street parking adjacent to the school for drop-off and pick-up of students
- Students walking or riding a bike to/from the school using the existing traffic data collected
- Current bus ridership
- New bus ridership eligibility (outside 1 mile radius)
- Anticipated number of students “carpooling” with siblings or classmates after subtracting trips accounted for with existing traffic data, bus ridership, pedestrians/bicyclists and estimated street parking drop-off/pick-up from the student population.

The results of these considerations are summarized in the following table:

Table 5 – Coyote Creek Existing Traffic Considerations

Peak Hour	Enrollment	Existing Bus Riders	Traffic Data Ingress/Egress	Ped & Bike	Estimated Street Parking	Calculated Carpooling
AM	502	141	171	64	26	100
PM			99	106		130

When the existing traffic at Coyote Creek is relocated to the Trailblazer, additional students will be eligible to take the bus. It is anticipated that about **1/3** of the Coyote Creek students will be newly eligible to take the bus to school. Assuming the ridership percentage remains the same as it is currently, ridership for these newly eligible students will also be about **83%** which results in an additional **139** students riding the bus to school for a total of **280** students from Coyote Creek taking the bus to Trailblazer.

Students who currently walk to Coyote Creek are unlikely to walk to Trailblazer due to distance and crossing a major roadway, therefore, it is assumed that these students will now be driven to school and count as a new vehicular trip to Trailblazer. Taking the estimated street parking trips into account, the ingress/egress trips, pedestrians and bicyclists converted to vehicle trips, anticipated carpooling and the subtraction of new bus ridership, the resulting increase in trip demand for Trailblazer is about **314** trips during the morning peak hour and **290** trips during the afternoon peak hour.

A summary of the trip generation comparison is summarized in **Table 6**.

Table 6 – Trip Generation Comparison

ITE LUC	Description	Units	Quant	AM Peak - Generator Peak			PM Peak - Generator Peak		
				Total	Ingress	Egress	Total	Ingress	Egress
-	Existing Data Based Calculation	Students	502	314	157	157	290	145	145
520	Public Elementary School	Students	502	377	203	173	226	104	122
530	Private School (K-8)	Students	502	507	284	223	301	142	160
536	Charter Elementary School	Students	502	537	285	252	361	177	184

3.3 Trip Distribution/Assignment

The trip distribution and assignment were evaluated by first reviewing the attendance boundaries for Coyote Creek to get an idea of the population density within the boundary limits. Then the distribution of traffic within the Coyote Creek boundary and the directions of approach for arriving at Trailblazer was estimated by percentage. The resulting Trip Distribution percentages are shown in **Figure 8**.



Figure 8 – Trip Distribution

Based on the Trip Distribution, the trips turning movements were then assigned to the key intersections evaluated as a part of this TIS.

- Highlands Ranch Parkway at Westridge Village Parkway
- Highlands Ranch Parkway at Wildcat Reserve Parkway/Spring Hill Parkway
- Hackberry Street at east parking lot entrance
- Hackberry Street at west parking lot entrance
- Hackberry Street at south bus loop entrance
- Hackberry Street at north bus loop entrance

The resulting trip assignment is shown in **Figure 9**.

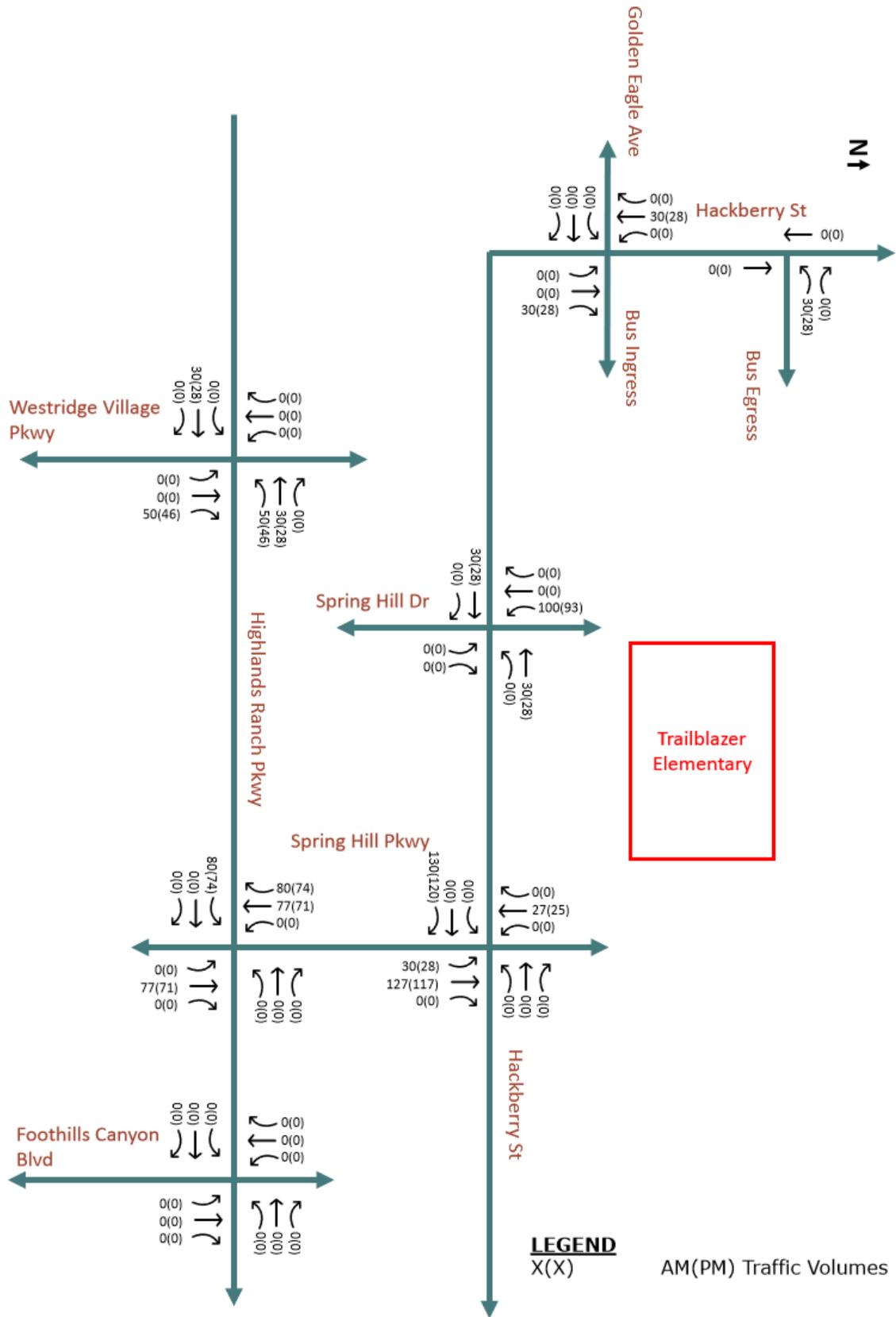


Figure 9 – Trip Assignment



In addition to the new anticipated trips for Coyote Creek students transferring to Trailblazer, the existing trips to Coyote Creek will also be removed for a few of the key intersections. Certain turning movements accounting for the current arrival of drivers to Coyote Creek would be reduced in this new scenario. Using the trip distribution and the existing distribution of ingress and egress trips for Coyote Creek, the estimated reduction for certain turning movements was estimated. The resulting reductions are summarized in **Table 7**.

Table 7 – Turning Movement Reductions

Intersection	Peak Hour	EBR	WBL	NBL	NBR
Spring Hill Pkwy & Highlands Ranch Pkwy	AM	-33	0	-33	0
	PM	-21	0	-21	0
Westridge Village Pkwy & Highland Ranch Pkwy	AM	-37	-33	-37	-33
	PM	-24	-21	-24	-21

4. PROJECTED SITE TRAFFIC IMPACTS

4.1 Total Traffic (2028-2029 School Year)

The total anticipated future traffic for the 2028 to 2029 school year for Trailblazer with the addition of Coyote Creek students was calculated by adding the trip assignment to the existing Trailblazer traffic data and then subtracting the anticipated turning movement reductions. The resulting total traffic is shown in **Figure 10**.

4.2 Projected Level of Service

The capacity analysis for the total projected traffic from the transfer of Coyote Creek students to Trailblazer was evaluated using Synchro. The resulting LOS and delay are summarized in **Table 8** for both the existing conditions (without Coyote Creek traffic) and for the total traffic conditions (with Coyote Creek traffic). Project level of service reports from Synchro are included in **Appendix F**.

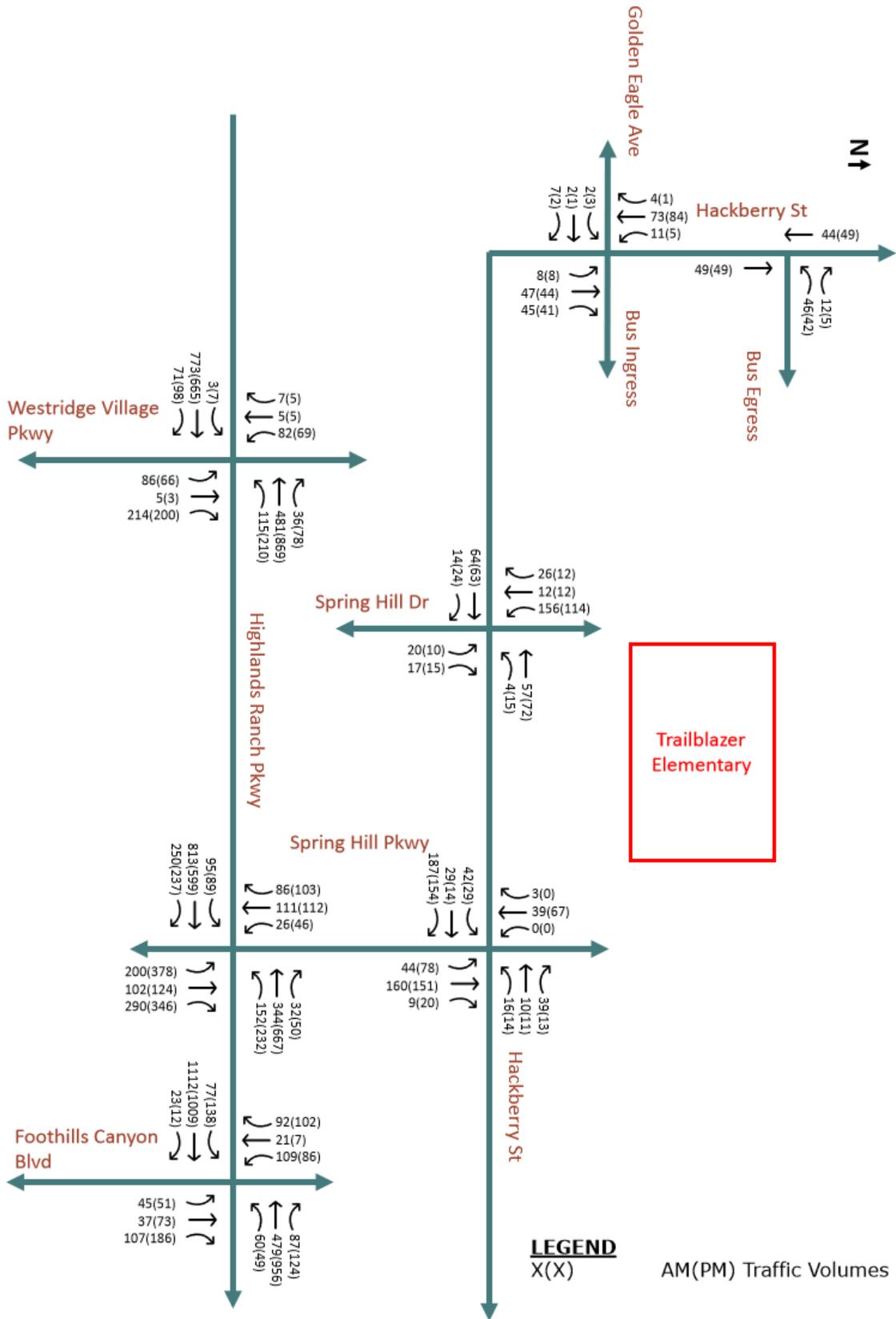


Figure 10 – Total Traffic

Table 8 – LOS and Delay Results

Intersection	Control	Movement	Existing						Total Traffic							
			LOS		Delay (s)		Queue Length (ft)		LOS		Delay (s)		Delay Delta (s)		Queue Length (ft)	
			AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
Highlands Ranch Pkwy & Westridge Village Pkwy	Signal	Overall	C	B	20.1	19.0	-	-	B	B	19.8	19.6	-0.3	+0.6	-	-
		NBL	D	C	36.7	30.2	95	72	C	C	31.1	27.5	-5.6	-2.7	73	54
		NBT	C	C	22.8	22.7	9	6	C	C	22.8	22.7	0.0	0.0	9	6
		NBR	A	A	9.1	6.2	1	0	B	A	13.2	6.0	+4.1	-0.2	17	2
		SBL	C	C	27.0	27.2	74	54	C	C	27.0	27.2	0.0	0.0	74	60
		SBT	B	B	16.2	17.0	15	7	B	B	16.2	17.0	0.0	0.0	15	12
		SBR	C	B	26.2	17.0	15	7	B	B	16.2	17.0	-10.0	0.0	15	12
		EBL	A	A	5.3	5.6	3	6	A	A	5.3	5.6	0.0	0.0	3	6
		EBT	C	B	22.7	19.3	244	212	C	B	22.9	19.7	+0.2	+0.4	246	218
		EBR	C	B	22.7	19.3	244	212	C	B	22.9	19.7	+0.2	+0.4	246	218
		WBL	A	A	8.3	9.9	36	64	B	B	10.2	12.1	+1.9	+2.2	45	77
		WBT	B	C	16.8	21.8	129	279	B	C	17.2	22.5	+0.4	+0.7	139	294
WBR	B	C	16.8	21.8	129	279	B	C	17.2	22.5	+0.4	+0.7	139	294		
Highlands Ranch Pkwy & Springhill Pkwy	Signal	Overall	A	A			-	-	B	B	15.6	15.8	+15.6	+15.8	-	-
		NBL	C	C	21.5	23.1	87	151	C	C	21.4	23.4	-0.1	+0.3	77	142
		NBT	C	C	29.8	30.5	36	65	C	C	32.9	33.5	+3.1	+3.0	117	152
		NBR	A	A	5.4	6.4	1	45	A	A	5.6	6.6	+0.2	+0.2	3	48
		SBL	C	C	24.4	25.3	26	43	C	C	24.6	25.5	+0.2	+0.2	26	53
		SBT	D	D	50.8	46.6	54	80	F	F	406.1	325.3	+355.3	+278.7	277	381
		SBR	D	D	50.8	46.6	54	7	F	F	406.1	325.3	+355.3	+278.7	277	381
		EBL	C	C	20.3	20.5	21	21	C	C	23.5	26.4	+3.2	+5.9	95	95
		EBT	F	D	83.6	48.5	541	325	F	D	83.6	48.5	0.0	0.0	541	325
		EBR	C	B	20.8	10.9	178	105	B	B	17.3	10.8	-3.5	-0.1	144	98
		WBL	C	C	20.8	21.9	60	91	C	C	20.8	21.9	0.0	0.0	60	91
		WBT	C	D	33.1	39.4	164	343	C	D	33.1	39.4	0.0	0.0	164	343
WBR	A	A	0.2	0.3	0	0	A	A	0.2	0.3	0.0	0.0	0	0		
Hackberry St & Spring Hill Pkwy	Unsignalized (TWSC or AWSC)	Overall			-	-	-	-			-	-	-	-	-	-
		NBL	B	B	13.8	12.5	12	18	F	C	156.2	24.7	+142.4	+12.2	326	112
		NBT	B	B	13.8	12.5	12	18	F	C	156.2	24.7	-	-	326	112
		NBR	B	B	13.8	12.5	12	18	F	C	156.2	24.7	+142.4	+12.2	326	112
		SBL	A	A	0.0	0.0	0	0	A	A	0.0	0.0	-	-	0	0
		SBT	B	B	13.2	12.2	8	10	C	B	33.8	13.3	-	-	68	20
		SBR	B	B	13.2	12.2	8	10	C	B	33.8	13.3	-	-	68	20
		EBL	A	A	7.5	7.4	4	2	A	A	7.5	7.4	-	-	4	2
		EBT	A	A	0.0	0.0	0	0	A	A	0.0	0.0	0.0	0.0	0	0
		EBR	A	A	0.0	0.0	0	0	A	A	0.0	0.0	-	-	0	0
		WBL	A	A	7.7	7.4	2	2	A	A	8.6	7.4	-	-	2	2
		WBT	A	A	0.0	0.0	0	0	A	A	0.0	0.0	0.0	0.0	0	0
WBR	A	A	0.0	0.0	0	0	A	A	0.0	0.0	-	-	0	0		

Intersection	Control	Movement	Existing						Total Traffic								
			LOS		Delay (s)		Queue Length (ft)		LOS		Delay (s)		Delay Delta (s)		Queue Length (ft)		
			AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	
Hackberry St & Spring Hill Dr	Unsignalized (TWSC or AWSC)	Overall			-	-	-	-			-	-	-	-	-	-	
		NBL	A	A	9.5	9.4	2	2	B	B	10.2	10.0	+0.7	+0.6	4	2	
		NBT	-	-	-	-	-	-	B	B	10.2	10.0	-	-	4	2	
		NBR	A	A	9.5	9.4	2	2	B	B	10.2	10.0	+0.7	+0.6	4	2	
		SBL	B	B	10.1	10.2	4	2	B	B	15.3	15.7	+5.2	+5.5	58	50	
		SBT	A	A	9.3	9.7	2	2	A	B	9.7	10.3	+0.4	+0.6	6	4	
		SBR	A	A	9.3	9.7	2	2	A	B	9.7	10.3	+0.4	+0.6	6	4	
		EBL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		EBT	A	A	0.0	0.0	0	0	A	A	0.0	0.0	0.0	0.0	0	0	
		EBR	A	A	0.0	0.0	0	0	A	A	0.0	0.0	0.0	0.0	0	0	
		WBL	A	A	7.4	7.4	0	0	A	A	7.5	7.5	+0.1	+0.1	0	0	
		WBT	A	A	0.0	0.0	0	0	A	A	0.0	0.0	0.0	0.0	0	0	
		WBR	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hackberry St & Bus Egress	Unsignalized (TWSC or AWSC)	Overall			-	-	-	-			-	-	-	-	-	-	
		NBL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
		NBT	A	A	0.0	0.0	0	0	-	-	0.0	0.0	0.0	0.0	0	0	
		NBR	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
		SBL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
		SBT	A	A	0.0	0.0	0	0	A	A	0.0	0.0	0.0	0.0	0	0	
		SBR	A	A	0.0	0.0	0	0	A	A	0.0	0.0	0.0	0.0	0	0	
		EBL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
		EBT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
		EBR	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
		WBL	A	A	9.5	9.3	2	2	B	B	10.2	10.1	+0.7	+0.8	12	16	
		WBT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
		WBR	A	A	9.5	9.3	2	2	-	-	10.2	10.1	+0.7	+0.8	12	16	
Hackberry St & Bus Ingress/Golden Eagle Ave	Unsignalized (TWSC or AWSC)	Overall			-	-	-	-			-	-	-	-	-	-	
		NBL	A	A	7.4	7.4	0	0	A	A	7.5	7.5	+0.1	+0.1	0	0	
		NBT	A	A	0.0	0.0	0	0	A	A	0.0	0.0	0.0	0.0	0	0	
		NBR	A	A	0.0	0.0	0	0	A	A	0.0	0.0	0.0	0.0	0	0	
		SBL	A	A	7.5	7.3	0	0	A	A	7.7	7.4	+0.2	+0.1	0	0	
		SBT	A	A	0.0	0.0	0	0	A	A	0.0	0.0	0.0	0.0	0	0	
		SBR	A	A	0.0	0.0	0	0	A	A	0.0	0.0	0.0	0.0	0	0	
		EBL	A	A	9.0	9.2	2	0	A	A	9.4	9.7	+0.4	+0.5	2	0	
		EBT	A	A	9.0	9.2	2	0	A	A	9.4	9.7	+0.4	+0.5	2	0	
		EBR	A	A	9.0	9.2	2	0	A	A	9.4	9.7	+0.4	+0.5	2	0	
		WBL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
		WBT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
		WBR	-	-	-	-	-	-	-	-	-	-	-	-	-	-	

4.3 Mitigation

Capacity Analysis

The capacity analysis results show that the relocation of Coyote Creek to Trailblazer causes an increase in delay and an undesirable level of service for certain turning movements at the following intersections.

- Highlands Ranch Parkway at Springhill Parkway (SBT/SBR turning movements)
- Hackberry Street at Springhill Parkway (NBL/NBT/NBR turning movements)

Three mitigation options were evaluated in an effort to improve level of service and delay as follows.

For Highlands Ranch Parkway at Springhill Parkway the signal timing was adjusted to provide more green time for the southbound through/right turning movements. To achieve this, the protected phase for the northbound left turn was reduced to match the protected phasing time for the southbound left turn. This change only impacts the signal timing for the NBL turning movement and the SBT/SBR turning movements, but the overall timeframe for the northbound and southbound approaches remains the same, overall cycle length remains the same and the signal timing for the eastbound and westbound approaches remains the same. As shown in **Table 9**, the signal timing change mitigates the issue without a significant impact on any other turning movements at the intersection.

For Hackberry Street at Springhill Parkway, two mitigation options were evaluated. The first is changing the intersection from a two-way stop to an all-way stop controlled intersection. As shown in **Table 9**, this mitigates the issues for the northbound turning movements, however, it causes the eastbound turning movements to have an undesirable level of service, however, this delay is 100 seconds less than the delay the northbound turning movements were reflecting. To mitigate the eastbound turning movements with the change to an all-way stop controlled intersection, an additional mitigation was evaluated. This option included both changing the intersection to an all-way stop controlled intersection and adding pavement markings to allow for a shared EBL/EBT turn lane and a dedicated EBR turn lane. The roadway width would need to be confirmed to determine if this lane configuration is feasible. This mitigation option does prove to mitigate all undesirable level of services issues for the intersection.

Table 9 – Mitigation LOS and Delay Results

Intersection	Control	Movement	Total Traffic								Total Traffic - Mitigation								Mitigation
			LOS		Delay (s)		Delay Delta (s)		Queue Length (ft)		LOS		Delay (s)		Delay Delta (s)		Queue Length (ft)		
			AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	
Highlands Ranch Pkwy & Springhill Pkwy	Signal	Overall	B	B	15.6	15.8	+15.6	+15.8	-	-	D	C	42.8	31.9	+27.2	+16.1	-	-	Reduce northbound left time to match SBL in order to provide more green time for SBT/SBR
		NBL	C	C	21.4	23.4	-0.1	+0.3	77	142	C	D	25.3	35.3	+3.9	+11.9	77	142	
		NBT	C	C	32.9	33.5	+3.1	+3.0	117	152	C	C	32.9	33.5	0.0	0.0	117	152	
		NBR	A	A	5.6	6.6	+0.2	+0.2	3	48	A	A	5.3	5.4	-0.3	-1.2	3	48	
		SBL	C	C	24.6	25.5	+0.2	+0.2	26	53	C	C	20.2	20.7	-4.4	-4.8	26	53	
		SBT	F	F	406.1	325.3	+355.3	+278.7	277	381	D	D	48.2	42.5	-357.9	-282.8	277	381	
		SBR	F	F	406.1	325.3	+355.3	+278.7	277	381	D	D	48.2	42.5	-357.9	-282.8	277	381	
		EBL	C	C	23.5	26.4	+3.2	+5.9	95	95	C	C	23.5	26.4	0.0	0.0	95	95	
		EBT	F	D	83.6	48.5	0.0	0.0	541	325	F	D	83.6	48.5	0.0	0.0	541	325	
		EBR	B	B	17.3	10.8	-3.5	-0.1	144	98	C	B	21.4	10.8	+4.1	0.0	144	98	
		WBL	C	C	20.8	21.9	0.0	0.0	60	91	C	C	20.8	21.9	0.0	0.0	60	91	
		WBT	C	D	33.1	39.4	0.0	0.0	164	343	C	D	33.1	39.0	0.0	-0.4	164	343	
WBR	A	A	0.2	0.3	0.0	0.0	0	0	A	A	0.2	0.3	0.0	0.0	0	0			

Intersection	Control	Movement	Total Traffic								Total Traffic - Mitigation								Mitigation								
			LOS		Delay (s)		Delay Delta (s)		Queue Length (ft)		LOS		Delay (s)		Delay Delta (s)		Queue Length (ft)										
			AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM									
Hackberry St & Springhill Pkwy	Unsignalized (TWSC or AWSC)	Overall			-	-	-	-	-	-			-	-	-	-	-	-	Make the intersection an all-way stop								
		NBL	F	C	156.2	24.7	+142.4	+12.2	326	112	C	B	23.1	13.5	-133.1	-11.2	104	64		D	C	25.3	16.7	+2.2	+3.2	112	84
		NBT	F	C	156.2	24.7	-	-	326	112	C	B	23.1	13.5	-133.1	-11.2	104	64		D	C	25.3	16.7	+2.2	+3.2	112	84
		NBR	F	C	156.2	24.7	+142.4	+12.2	326	112	C	B	23.1	13.5	-133.1	-11.2	104	64		D	C	25.3	16.7	+2.2	+3.2	112	84
		SBL	A	A	0.0	0.0	-	-	0	0	B	A	10.4	8.3	+10.4	+8.3	0	0		B	A	10.2	8.4	-0.2	+0.1	0	0
		SBT	D	B	33.8	13.3	-	-	68	20	B	A	14.5	10.0	-19.3	-3.3	32	18		B	B	14.1	10.3	-0.4	+0.3	30	20
		SBR	D	B	33.8	13.3	-	-	68	20	B	A	14.5	10.0	-19.3	-3.3	32	18		B	B	14.1	10.3	-0.4	+0.3	30	20
		EBL	A	A	7.5	7.4	-	-	4	2	F	A	54.4	9.7	+46.9	+2.3	290	14		B	B	12.9	10.4	-41.5	+0.7	26	10
		EBT	A	A	0.0	0.0	0.0	0.0	0	0	F	A	54.4	9.7	+54.4	+9.7	290	14		B	B	12.9	10.4	-41.5	+0.7	26	6
		EBR	A	A	0.0	0.0	-	-	0	0	F	A	54.4	9.7	+54.4	+9.7	290	14		D	A	26.4	8.8	-28.0	-0.9	144	6
		WBL	A	A	8.6	7.4	-	-	2	2	B	A	11.7	9.3	+3.1	+1.9	16	8		B	B	12.5	10.4	+0.8	+1.1	16	10
		WBT	A	A	0.0	0.0	0.0	0.0	0	0	B	A	11.7	9.3	+11.7	+9.3	16	8		B	B	12.5	10.4	+0.8	+1.1	16	10
WBR	A	A	0.0	0.0	-	-	0	0	B	A	11.7	9.3	+11.7	+9.3	16	8	B	B	12.5	10.4	+0.8	+1.1	16	10			



Signal Warrant Analysis

The intersections of Hackberry Street at Spring Hill Drive and Hackberry Street at Spring Hill Parkway were analyzed for potential signal needs. Warrants 3 (Peak Hour) and 7 (Crash experience) from the Manual on Uniform Traffic Control Devices (MUTCD) were used for this study.

Based on the analysis, neither of these intersections met either warrant for signal installation.

Auxiliary Lane Analysis

Right turn lanes were evaluated for the intersections of Highlands Ranch Parkway at Wildcat Reserve Parkway/Spring Hill Parkway, Highlands Ranch Parkway at Westridge Village Parkway, and Highlands Ranch Parkway at Foothills Canyon Boulevard. Douglas County Roadway Design Standards refer to the Code of Colorado Regulations, State Highway Access Code for the design and installation recommendations. A right-turn lane is recommended when a threshold of 25 right turning vehicles is exceeded on a Non-Rural Arterial roadway with a posted speed limit greater than 40 miles per hour.

Projected traffic data shows that the westbound approach of Highlands Ranch Parkway at Westridge Village Parkway has 36 right turns during the morning peak hour and 78 during the afternoon peak hour while the eastbound approach has 71 right turns during the morning peak and 98 during the afternoon peak. Therefore, right turn lanes are warranted for each direction of Highlands Ranch Parkway at Westridge Village Parkway. However, no new traffic is being added to the westbound or eastbound approach and the intersection appears to operate efficiently. Therefore, right-turn lanes are not recommended.

Site Analysis

Based on site observations, Trailblazer faces the following challenges:

- Congestion on Hackberry Street

There are no recommended improvements for the Trailblazer site based on queuing analysis and safety. While congestion occurs on Westridge Village Parkway at times, it is not significant to warrant any improvements. There are no significant safety concerns that require attention.



5. CONCLUSIONS/RECOMMENDATIONS

This Traffic Impact Study addresses existing traffic patterns and potential traffic challenges at Trailblazer Elementary School, while considering the anticipated increase in traffic due to possible consolidations with Coyote Creek Elementary.

Traffic will be increased with the additional enrollment, but additional bus service will be offered, limiting the impact of the increased enrollment. Consolidating school populations at Trailblazer would cause the school population to more than double its previous historical maximum enrollment. To address existing and potential future traffic challenges the following mitigation measures are recommended:

- Coordinate with Douglas County to modify signal timing at Highlands Ranch Parkway and Spring Hill Parkway. Douglas County has a robust signal timing program which optimizes timing for prevailing conditions.
- Coordinate with Douglas County to convert the Hackberry Street and Spring Hill Parkway intersection to a 4-way stop. This modification would increase traffic flow during school drop-off and pick-up but reduce flow during normal conditions. Douglas County follows MUTCD standards for determining the proper intersection traffic control and would not add pavement markings or signage unless warranted.
- Add pavement markings and signage on Hackberry Street at Spring Hill Parkway to create a shared eastbound through/left-turn lane and a dedicated eastbound right-turn lane. The existing pavement width should accommodate the layout. Douglas County follows MUTCD standards for determining the proper intersection traffic control and would not add pavement markings or signage unless warranted.



Appendix A Site Observation Notes

TRAFFIC OBSERVATION REPORT

Project Name	DCSD HR TIS	Project No.	1124175
Observer	Derek Williams, EI		
Location	Coyote Creek Elementary School		
Time	8:00 - 9:30	AM	
		DATE	11/12/2024
		M	T W Th F S S

Queueing Data

Start Time: 8:25 AM

End Time: 8:50 AM

Maximum Queueing Length: 300 feet (Main Loop), 500 feet (Bus Lane)

Total Storage Length Available: 650 feet (Main Loop), 300 ft (Bus Lane)

Comments:

On-Street Parking Locations and Availability

Comments:

On-street parking is available on Baneberry Court except near intersections. Parking is not permitted along Westridge Village Parkway, however a designated parking lane is provided on this street in front of the school. Additionally vehicles were observed dropping students off on Woodrose Way across from the bus lane entrance. Students and parents utilized a crosswalk at this location to cross Westridge Village Parkway.

Crosswalk Locations and Usage

Comments:

Crosswalks are located at the school parking lot entrance and crossing Baneberry Court at Westridge Village Parkway. Another crosswalk crosses Westridge Village Parkway near the bus lane entrance. Button activated flashing beacons are provided at this crosswalk. A crossing guard was stationed at this location during the drop-off time.

Roadway Characteristics

Speed Limit(s) and Location(s):

Both Westridge Village Parkway and Baneberry Court have posted speed limits of 25 mph. A reduced speed of 15 mph in the school zone is used when flashers are on.

Signage:

No parking signs along Westridge Village Parkway. Reduced speed flashers located on Baneberry Court and Westridge Village Parkway. Bus lane signed as one-way. No U-turn in school zone signs located on Baneberry Court.

Bike Lanes:

Bike lanes are located along both sides of Westridge Village Parkway.

Other Comments:

No additional comments to note.

Sight Visibility Challenges

Comments:

No potential sight visibility conflicts are noted.

Congestion Areas

Comments:

Some congestion occurred on Westridge Village Parkway at the bus lane entrance when queueing backed-up to the road. A times vehicles were unable to turn into the bus lane until the queue shortened. No more than 5 vehicles in either direction were observed to be queued on Westridge Village Parkway at any time. This did not have an affect on traffic coming from Baneberry Court or prevent vehicles from exiting the bus lane.

General Traffic Observations

Comments:

Many parents utilized the parking lane on Westridge Village parkway to drop the students off at the school. One vehicle was parked in the bike lane in front of the bus lane.

TRAFFIC OBSERVATION REPORT

Project Name	DCSD HR TIS	Project No.	1124175			
Observer	Derek Williams, EI					
Location	Coyote Creek Elementary School					
Time	2:45-3:30	PM				
DATE	11/12/2024					
M	T	W	Th	F	S	S

Queueing Data

Start Time: 3:00 PM

End Time: 3:40 PM

Maximum Queueing Length: 400 feet (Loop), 300 feet (Bus Lane)

Total Storage Length Available: 650 feet (Main Loop), 300 ft (Bus Lane)

Comments:

Queueing in both the drop-off loop and bus lane began approximately at 3:00. By 3:15 the bus lane reached it's queueing capacity. The drop-off loop did not reach queueing capacity during pick-up.

On-Street Parking Locations and Availability

Comments:

Most parents used on-street parking on Baneberry Court, Woodrose Way, and the parking lane on Westridge Village Parkway. Many vehicles were parked in the bike lanes on Westridge Village Parkway during pick-up.

Crosswalk Locations and Usage

Comments:

Crosswalks on Baneberry Court and Westridge Village parkway were used by parents and students. The school placed crossing guards at the crosswalks on Westridge Village Court and at the parking lot/loop entrance.

Roadway Characteristics

Speed Limit(s) and Location(s):

Both Westridge Village Parkway and Baneberry Court have posted speed limits of 25 mph. A reduced speed of 15 mph in the school zone is used when flashers are on.

Signage:

No parking signs along Westridge Village Parkway. Reduced speed flashers located on Baneberry Court and Westridge Village Parkway. Bus lane signed as one-way. No U-turn in school zone signs located on Baneberry Court.

Bike Lanes:

Bike lanes are located along both sides of Westridge Village Parkway.

Other Comments:

No additional comments to note.

Sight Visibility Challenges

Comments:

Vehicles parked in the bike lanes on Westridge Village Parkway create potential sight visibility challenges for vehicles exiting the bus lane.

Congestion Areas

Comments:

No congestion areas noted.

General Traffic Observations

Comments:

Vehicles seemed to flow in and out of the drop-off loop and bus lane smoothly. Buses have a designated pick-up lane in the drop-off loop and did not use the bus lane. Talked with the school Principle while observing traffic, she said that there were only three buses running today and I was observing a day with heavier vehicle traffic.

TRAFFIC OBSERVATION REPORT

Project Name	DCSD Traffic Study	Project No.	1124175
Observer	Nate Hittle		
Location	Trailblazer Elementary School		
Time	7:45 - 9:15 AM	AM / PM	
		DATE	###
		M	T W Th F S S

Queueing Data

Start Time: 8:05 AM

End Time: 8:39 AM

Maximum Queueing Length: 550 ft

Total Storage Length Available: 430 ft

Comments:

The main drop-off point was the parking lot to the southeast of the building, on the north side of S Hackberry St. This parking lot contains a two-lane, one-way, drop-off aisle. The right lane is intended for drop-off and pick-up, while the left lane is intended for through traffic. The first vehicles were observed entering the queue at 8:05 AM. By 8:22 AM, a steady stream of traffic was entering the lot. The queue reached its maximum length around 8:35 AM. At this time there were three cars waiting to turn left into the parking lot from S Hackberry St.

On-Street Parking Locations and Availability

Comments:

Street parking is available on both sides of S Hackberry St. Parking on the north and east sides of the street was mostly full by 8:10 AM. Parking on the south and west sides was utilized during drop-off by. Some parents parked on the street with their hazards on and walked the students across the street. Street parking is available on the nearby side streets but was seldom used.

Crosswalk Locations and Usage

Comments:

There are four locations within the immediate vicinity of the school to cross S Hackberry St. These are located at S Spring Hill Pkwy, Spring Hill Dr, Golden Eagle Ave, and at the northern access of the bus loop. There are also crosswalks across the parking lot and two across the drop-off aisle. Crossing guards were present at several of these crosswalks. Crosswalks were generally used appropriately to cross S Hackberry St. However, one crossing guard stated that the crosswalks across the drop-off aisle are often not used.

Roadway Characteristics

Speed Limit(s) and Location(s):

The speed limit on S Hackberry St is 25 mph. Two school zone speed limit signs are present, with a flasher that operates from 8:10 to 8:50 AM. The school zone speed limit is 20 mph.

Signage:

Signage present on the public roads includes speed limit signs, school zone speed limit signs, stop signs, No Parking signs, and school crossing signs. Signs in the drop-off aisle indicate how the lanes are intended to be used.

Bike Lanes:

Bike lanes are not present on S Hackberry St.

Other Comments:

There is a bus drop-off zone to the west of the school. Standard passenger cars are not permitted here.

Sight Visibility Challenges

Comments:

Drivers exiting the parking lot were observed shielding their eyes from the sun, as they were required to look east to be able to make a turn. Adjacent parking also obstructs the sight line looking east.

Congestion Areas

Comments:

The intersection of S Hackberry St and S Spring Hill Pkwy, at the entrance of the parking lot, experienced mild congestions. Queues formed on eastbound S Hackberry St, on northbound S Spring Hill Pkwy, consisting of vehicles waiting to enter the parking lot.

General Traffic Observations

Comments:

TRAFFIC OBSERVATION REPORT

Project Name	DCSD Traffic Study	Project No.	1124175
Observer	Nick Westphal		
Location	Trailblazer Elementary School		
Time	2:45 - 4:00 PM	AM / PM	
		DATE	19-Nov-24
		M	T W Th F S S

Queueing Data

Start Time: 3:05 PM

End Time: 3:37 AM

Maximum Queueing Length: 500 ft

Total Storage Length Available: 430 ft

Comments:

The main drop-off point was the parking lot to the southeast of the building, on the north side of S Hackberry St. This parking lot contains a two-lane, one-way, drop-off aisle. The right lane is intended for drop-off and pick-up, while the left lane is intended for through traffic. The first vehicles were observed entering the queue at 3:05. The pickup lane became full at 3:32, just after the bell rang. More vehicles park on the street and walk to pickup their students at the door than drive through the pick-up lane. There is also a bus loops that is signed as student pick-up. This is not as heavily used, but some pick-up at this location.

On-Street Parking Locations and Availability

Comments:

Street parking is available on both sides of S Hackberry St. Parking on the north and east sides of the street was mostly full by 3:30, but there was still parking available.

Crosswalk Locations and Usage

Comments:

There are four locations within the immediate vicinity of the school to cross S Hackberry St. These are located at S Spring Hill Pkwy, Spring Hill Dr, Golden Eagle Ave, and at the northern access of the bus loop. There are also crosswalks across the parking lot and two across the drop-off aisle. Crossing guards were present at the west exit from the parking lot and at the entrance to the bus loop. Most people used the crosswalks, but some crossed the street at unmarked locations. A crossing guard was also present at the internal crosswalk across the drop off loop.

Roadway Characteristics

Speed Limit(s) and Location(s):

The speed limit on S Hackberry St is 25 mph. Two school zone speed limit signs are present, with a flasher that operates from 8:10 to 8:50 AM. The school zone speed limit is 20 mph.

Signage:

Signage present on the public roads includes speed limit signs, school zone speed limit signs, stop signs, No Parking signs, and school crossing signs. Signs in the drop-off aisle indicate how the lanes are intended to be used.

Bike Lanes:

Bike lanes are not present on S Hackberry St.

Other Comments:

There is a bus drop-off zone to the west of the school. This appears to be signed for student drop off and pick-up as well.

Sight Visibility Challenges

Comments:

No major sight visibility issues were observed in the afternoon.

Congestion Areas

Comments:

There was some back up on Spring Hill Parkway at the stop sign, presumably from the Wildcat intersection. Most of the congestion was after the pick-up lane started exiting at the west exit of the parking lot. The main congestion lasted about 5 minutes.

General Traffic Observations

Comments:

More vehicles appear to park on the street than use the pick-up lane. There appears to be plenty of parking and queueing capacity with good sight lines. The sidewalk and curb ramps adjacent to school property appear to be fairly new. It was noted that high school/middle school students use the school property as a cut through rather than staying on the roadway sidewalk.



Appendix B Traffic Volume Counts

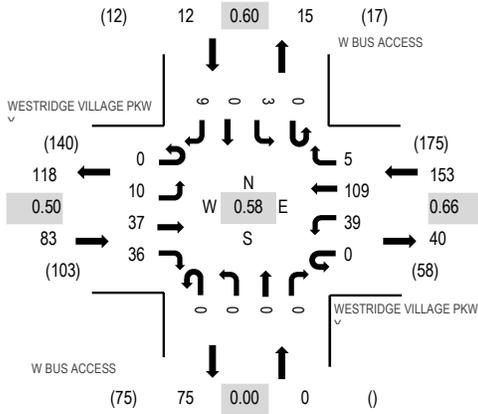
Location: 37 W BUS ACCESS & WESTRIDGE VILLAGE PKWY AM

Date: Wednesday, November 13, 2024

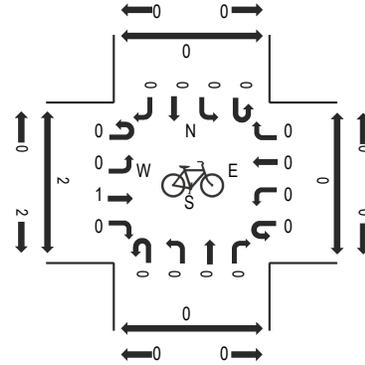
Peak Hour: 08:00 AM - 09:00 AM

Peak 15-Minutes: 08:30 AM - 08:45 AM

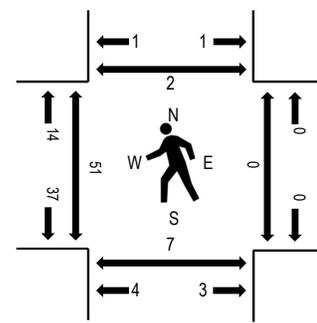
Peak Hour - Motorized Vehicles



Peak Hour - Bicycles



Peak Hour - Pedestrians

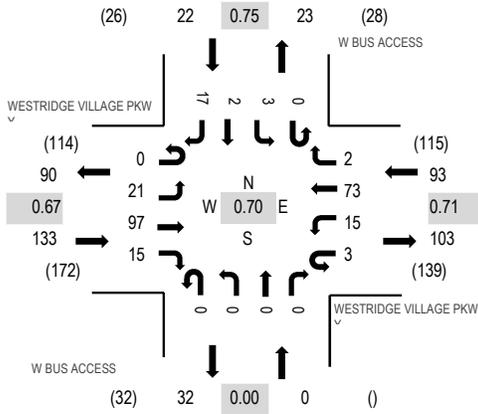


Note: Total study counts contained in parentheses.

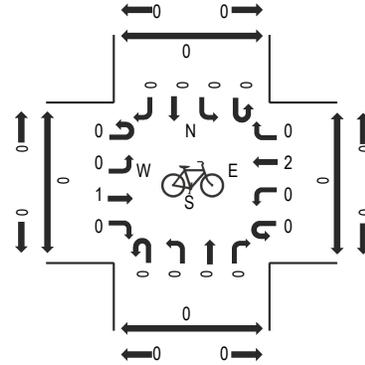
Traffic Counts - Motorized Vehicles

Interval Start Time	WESTRIDGE VILLAGE PKWY Eastbound				WESTRIDGE VILLAGE PKWY Westbound				W BUS ACCESS Northbound				W BUS ACCESS Southbound				Total	Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
8:00 AM	0	1	5	0	0	1	23	0	0	0	0	0	0	0	0	1	31	248	0	0	0	0
8:15 AM	0	2	10	14	0	27	29	1	0	0	0	0	0	0	0	3	86	235	30	0	2	0
8:30 AM	0	6	15	22	0	11	43	4	0	0	0	0	0	1	0	4	106	173	20	0	1	2
8:45 AM	0	1	7	0	0	0	14	0	0	0	0	0	0	2	0	1	25		1	0	4	0
9:00 AM	0	1	8	0	0	0	9	0	0	0	0	0	0	0	0	0	18		0	0	1	0
9:15 AM	0	1	10	0	0	0	13	0	0	0	0	0	0	0	0	0	24		0	0	0	0
Count Total	0	12	55	36	0	39	131	5	0	0	0	0	0	3	0	9	290		51	0	8	2
Peak Hour	0	10	37	36	0	39	109	5	0	0	0	0	0	3	0	9	248		51	0	7	2

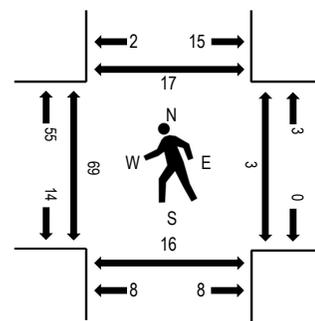
Peak Hour - Motorized Vehicles



Peak Hour - Bicycles



Peak Hour - Pedestrians

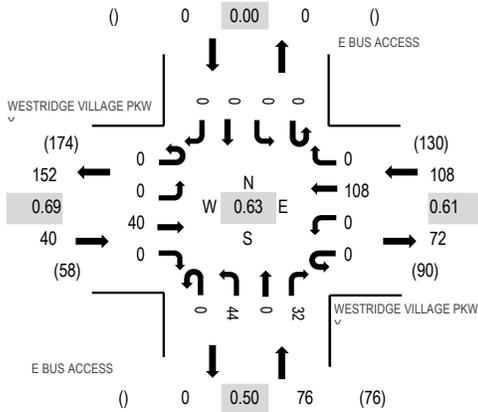


Note: Total study counts contained in parentheses.

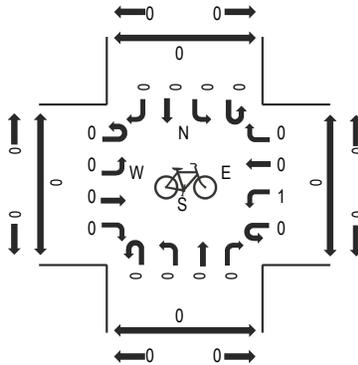
Traffic Counts - Motorized Vehicles

Interval Start Time	WESTRIDGE VILLAGE PKWY Eastbound				WESTRIDGE VILLAGE PKWY Westbound				W BUS ACCESS Northbound				W BUS ACCESS Southbound				Total	Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
2:45 PM	0	3	16	0	0	0	14	0	0	0	0	0	0	1	0	0	34	236	1	2	0	0
3:00 PM	0	4	19	1	0	0	14	0	0	0	0	0	0	1	0	0	39	248	0	3	3	2
3:15 PM	0	5	22	6	3	9	19	2	0	0	0	0	0	1	2	5	74	240	17	0	9	2
3:30 PM	0	8	35	7	0	5	28	0	0	0	0	0	0	0	0	6	89	47	0	4	12	
3:45 PM	0	4	21	1	0	1	12	0	0	0	0	0	0	1	0	6	46	5	0	0	1	
4:00 PM	0	2	18	0	0	0	8	0	0	0	0	0	0	1	0	2	31	0	0	0	0	
Count Total	0	26	131	15	3	15	95	2	0	0	0	0	0	5	2	19	313	70	5	16	17	
Peak Hour	0	21	97	15	3	15	73	2	0	0	0	0	0	3	2	17	248	69	3	16	17	

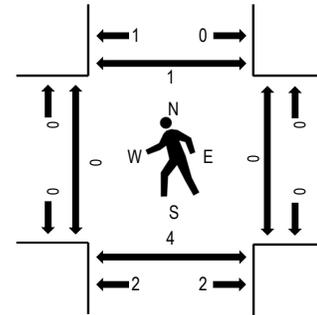
Peak Hour - Motorized Vehicles



Peak Hour - Bicycles



Peak Hour - Pedestrians

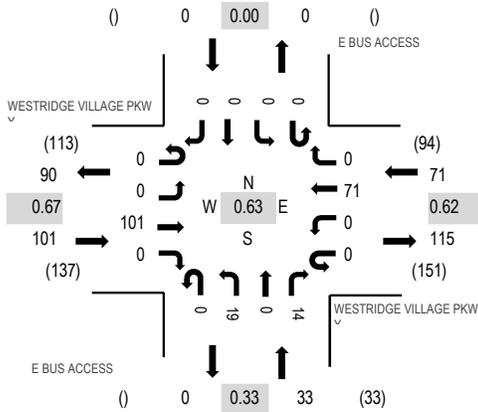


Note: Total study counts contained in parentheses.

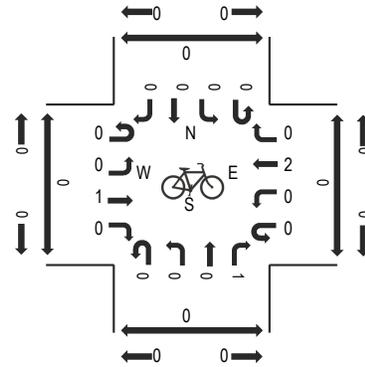
Traffic Counts - Motorized Vehicles

Interval Start Time	WESTRIDGE VILLAGE PKWY Eastbound				WESTRIDGE VILLAGE PKWY Westbound				E BUS ACCESS Northbound				E BUS ACCESS Southbound				Total	Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
8:00 AM	0	0	5	0	0	0	23	0	0	1	0	0	0	0	0	0	29	224	0	0	0	0
8:15 AM	0	0	9	0	0	0	44	0	0	17	0	19	0	0	0	0	89	212	0	0	0	0
8:30 AM	0	0	16	0	0	0	29	0	0	25	0	13	0	0	0	0	83	146	0	0	1	1
8:45 AM	0	0	10	0	0	0	12	0	0	1	0	0	0	0	0	0	23		0	0	3	0
9:00 AM	0	0	8	0	0	0	9	0	0	0	0	0	0	0	0	0	17		0	0	1	0
9:15 AM	0	0	10	0	0	0	13	0	0	0	0	0	0	0	0	0	23		0	0	0	0
Count Total	0	0	58	0	0	0	130	0	0	44	0	32	0	0	0	0	264		0	0	5	1
Peak Hour	0	0	40	0	0	0	108	0	0	44	0	32	0	0	0	0	224		0	0	4	1

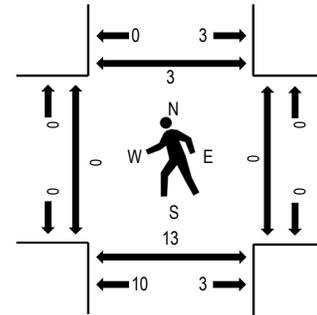
Peak Hour - Motorized Vehicles



Peak Hour - Bicycles



Peak Hour - Pedestrians



Note: Total study counts contained in parentheses.

Traffic Counts - Motorized Vehicles

Interval Start Time	WESTRIDGE VILLAGE PKWY Eastbound				WESTRIDGE VILLAGE PKWY Westbound				E BUS ACCESS Northbound				E BUS ACCESS Southbound				Total	Rolling Hour	Pedestrian Crossings						
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North			
2:45 PM	0	0	17	0	0	0	15	0	0	0	0	0	0	0	0	0	0	0	0	32	201	0	0	3	0
3:00 PM	0	0	16	0	0	0	12	0	0	0	0	0	0	0	0	0	0	0	0	28	205	0	0	9	2
3:15 PM	0	0	24	0	0	0	30	0	0	2	0	4	0	0	0	0	0	0	0	60	204	0	0	3	0
3:30 PM	0	0	39	0	0	0	17	0	0	16	0	9	0	0	0	0	0	0	0	81		0	0	1	0
3:45 PM	0	0	22	0	0	0	12	0	0	1	0	1	0	0	0	0	0	0	0	36		0	0	0	1
4:00 PM	0	0	19	0	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	27		0	0	0	0
Count Total	0	0	137	0	0	0	94	0	0	19	0	14	0	0	0	0	0	0	0	264		0	0	16	3
Peak Hour	0	0	101	0	0	0	71	0	0	19	0	14	0	0	0	0	0	0	0	205		0	0	13	3

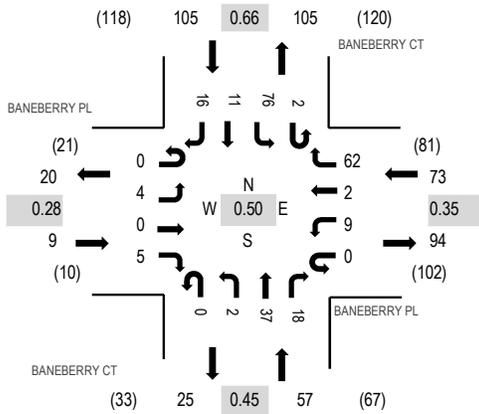
Location: 39 BANE BERRY CT & BANE BERRY PL AM

Date: Wednesday, November 13, 2024

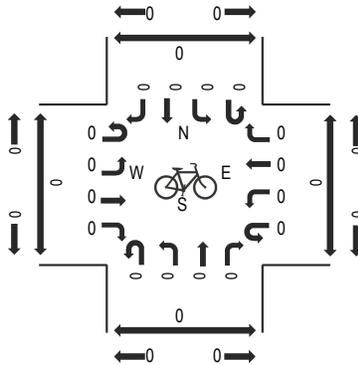
Peak Hour: 08:00 AM - 09:00 AM

Peak 15-Minutes: 08:30 AM - 08:45 AM

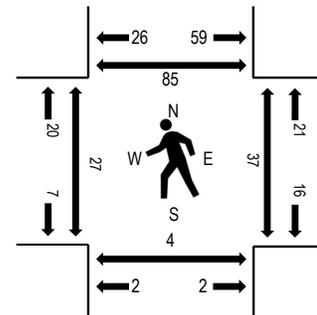
Peak Hour - Motorized Vehicles



Peak Hour - Bicycles



Peak Hour - Pedestrians



Note: Total study counts contained in parentheses.

Traffic Counts - Motorized Vehicles

Interval Start Time	BANE BERRY PL Eastbound				BANE BERRY PL Westbound				BANE BERRY CT Northbound				BANE BERRY CT Southbound				Total	Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
8:00 AM	0	0	0	0	0	1	0	3	0	0	6	0	1	26	4	0	41	244	0	0	0	0
8:15 AM	0	0	0	1	0	1	0	11	0	2	9	4	0	28	5	7	68	223	9	6	0	35
8:30 AM	0	4	0	4	0	7	2	43	0	0	18	14	1	20	1	9	123	167	16	31	4	47
8:45 AM	0	0	0	0	0	0	0	5	0	0	4	0	0	2	1	0	12		2	0	0	3
9:00 AM	0	0	0	0	0	0	1	2	0	0	6	1	0	5	5	0	20		0	0	0	1
9:15 AM	0	0	1	0	0	1	0	4	0	0	3	0	0	1	2	0	12		0	0	0	0
Count Total	0	4	1	5	0	10	3	68	0	2	46	19	2	82	18	16	276		27	37	4	86
Peak Hour	0	4	0	5	0	9	2	62	0	2	37	18	2	76	11	16	244		27	37	4	85

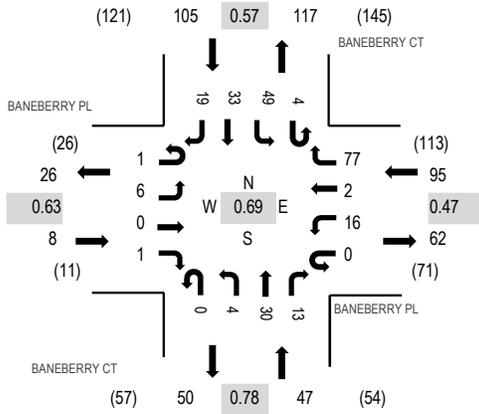
Location: 39 BANE BERRY CT & BANE BERRY PL PM

Date: Wednesday, November 13, 2024

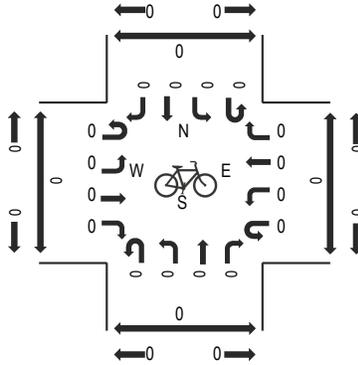
Peak Hour: 03:00 PM - 04:00 PM

Peak 15-Minutes: 03:30 PM - 03:45 PM

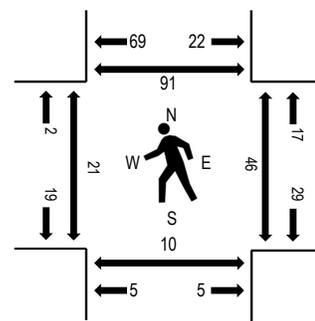
Peak Hour - Motorized Vehicles



Peak Hour - Bicycles



Peak Hour - Pedestrians



Note: Total study counts contained in parentheses.

Traffic Counts - Motorized Vehicles

Interval Start Time	BANE BERRY PL Eastbound				BANE BERRY PL Westbound				BANE BERRY CT Northbound				BANE BERRY CT Southbound				Total	Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
2:45 PM	0	2	0	0	0	0	0	4	0	0	3	0	0	5	5	0	19	231	1	0	0	1
3:00 PM	0	2	0	0	0	0	0	5	0	1	5	6	2	16	7	3	47	255	1	0	1	0
3:15 PM	1	0	0	1	0	3	0	8	0	0	8	6	2	26	12	6	73	233	3	20	6	29
3:30 PM	0	4	0	0	0	12	2	41	0	3	12	0	0	3	8	7	92		17	24	3	62
3:45 PM	0	0	0	0	0	1	0	23	0	0	5	1	0	4	6	3	43		0	2	0	0
4:00 PM	0	1	0	0	0	0	0	14	0	0	4	0	0	4	2	0	25		2	2	1	2
Count Total	1	9	0	1	0	16	2	95	0	4	37	13	4	58	40	19	299		24	48	11	94
Peak Hour	1	6	0	1	0	16	2	77	0	4	30	13	4	49	33	19	255		21	46	10	91

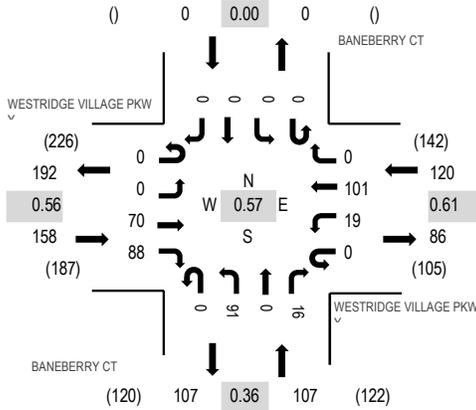
Location: 40 BANEBERRY CT & WESTRIDGE VILLAGE PKWY AM

Date: Wednesday, November 13, 2024

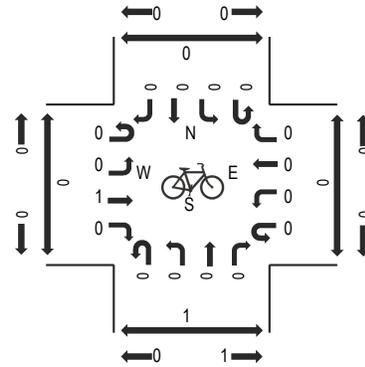
Peak Hour: 08:00 AM - 09:00 AM

Peak 15-Minutes: 08:30 AM - 08:45 AM

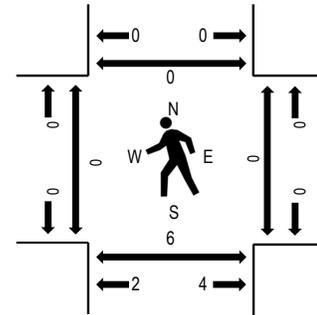
Peak Hour - Motorized Vehicles



Peak Hour - Bicycles



Peak Hour - Pedestrians



Note: Total study counts contained in parentheses.

Traffic Counts - Motorized Vehicles

Interval Start Time	WESTRIDGE VILLAGE Pkwy Eastbound				WESTRIDGE VILLAGE Pkwy Westbound				BANEBERRY CT Northbound				BANEBERRY CT Southbound				Total	Rolling Hour	Pedestrian Crossings				
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North	
8:00 AM	0	0	8	24	0	10	15	0	0	8	0	0	0	0	0	0	0	65	385	0	0	0	0
8:15 AM	0	0	28	43	0	3	28	0	0	14	0	1	0	0	0	0	0	117	352	0	0	3	0
8:30 AM	0	0	26	19	0	6	43	0	0	59	0	15	0	0	0	0	0	168	269	0	0	2	0
8:45 AM	0	0	8	2	0	0	15	0	0	10	0	0	0	0	0	0	0	35		0	0	1	0
9:00 AM	0	0	6	9	0	1	8	0	0	6	0	2	0	0	0	0	0	32		0	0	0	0
9:15 AM	0	0	11	3	0	0	13	0	0	7	0	0	0	0	0	0	0	34		0	0	0	0
Count Total	0	0	87	100	0	20	122	0	0	104	0	18	0	0	0	0	0	451		0	0	6	0
Peak Hour	0	0	70	88	0	19	101	0	0	91	0	16	0	0	0	0	0	385		0	0	6	0

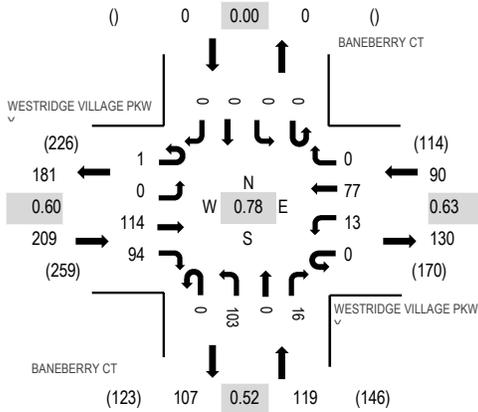
Location: 40 BANE BERRY CT & WESTRIDGE VILLAGE PKWY PM

Date: Wednesday, November 13, 2024

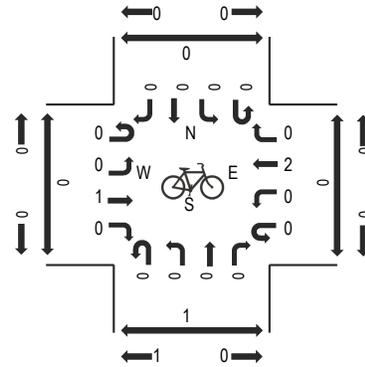
Peak Hour: 03:00 PM - 04:00 PM

Peak 15-Minutes: 03:30 PM - 03:45 PM

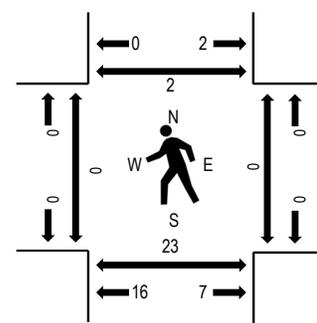
Peak Hour - Motorized Vehicles



Peak Hour - Bicycles



Peak Hour - Pedestrians



Note: Total study counts contained in parentheses.

Traffic Counts - Motorized Vehicles

Interval Start Time	WESTRIDGE VILLAGE PKWY Eastbound				WESTRIDGE VILLAGE PKWY Westbound				BANE BERRY CT Northbound				BANE BERRY CT Southbound				Total	Rolling Hour	Pedestrian Crossings				
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North	
2:45 PM	0	0	20	9	0	1	13	0	0	7	0	0	0	0	0	0	0	50	391	0	0	0	0
3:00 PM	0	0	29	26	0	6	8	0	0	9	0	1	0	0	0	0	0	79	418	0	0	3	2
3:15 PM	1	0	40	46	0	5	18	0	0	16	0	2	0	0	0	0	0	128	390	0	0	12	0
3:30 PM	0	0	25	11	0	2	34	0	0	54	0	8	0	0	0	0	0	134		0	0	5	0
3:45 PM	0	0	20	11	0	0	17	0	0	24	0	5	0	0	0	0	0	77		0	0	3	0
4:00 PM	0	0	15	6	0	0	10	0	0	15	0	5	0	0	0	0	0	51		0	0	0	0
Count Total	1	0	149	109	0	14	100	0	0	125	0	21	0	0	0	0	0	519		0	0	23	2
Peak Hour	1	0	114	94	0	13	77	0	0	103	0	16	0	0	0	0	0	418		0	0	23	2

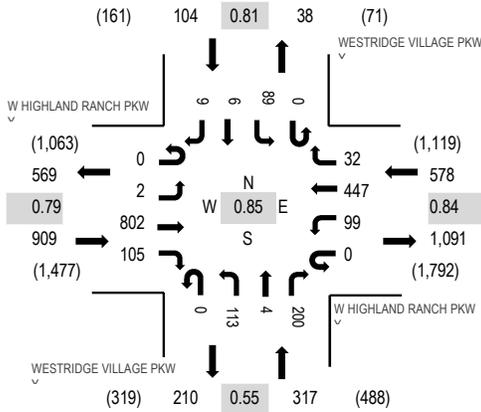
Location: 41 WESTRIDGE VILLAGE PKWY & W HIGHLAND RANCH PKWY AM

Date: Wednesday, November 13, 2024

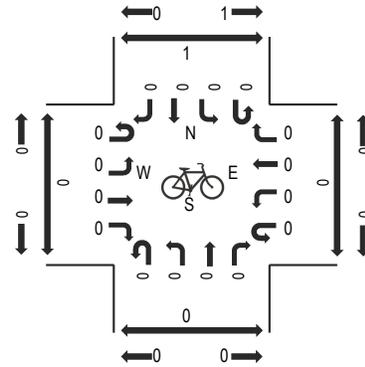
Peak Hour: 07:45 AM - 08:45 AM

Peak 15-Minutes: 08:30 AM - 08:45 AM

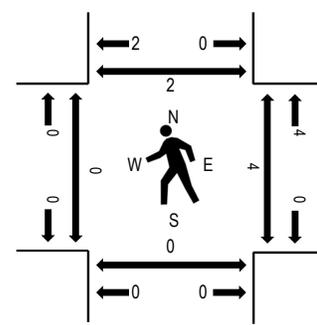
Peak Hour - Motorized Vehicles



Peak Hour - Bicycles



Peak Hour - Pedestrians

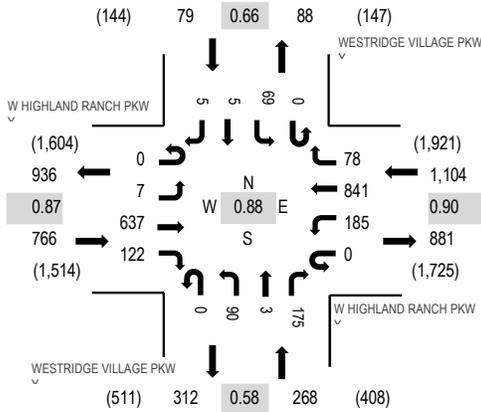


Note: Total study counts contained in parentheses.

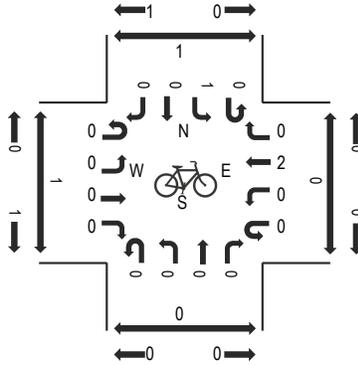
Traffic Counts - Motorized Vehicles

Interval Start Time	W HIGHLAND RANCH PKW				W HIGHLAND RANCH PKW				WESTRIDGE VILLAGE PKW				WESTRIDGE VILLAGE PKW				Total	Rolling Hour	Pedestrian Crossings			
	Eastbound		Westbound		Northbound		Southbound		Eastbound		Westbound		Northbound		Southbound				West	East	South	North
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right						
7:45 AM	0	0	227	7	0	19	116	4	0	12	0	34	0	22	1	2	444	1,908	0	0	0	0
8:00 AM	0	1	171	16	0	20	87	2	0	15	0	36	0	15	1	2	366	1,858	0	2	0	2
8:15 AM	0	1	223	62	0	33	105	10	0	21	1	49	0	29	1	2	537	1,819	0	0	0	0
8:30 AM	0	0	181	20	0	27	139	16	0	65	3	81	0	23	3	3	561	1,601	0	2	0	0
8:45 AM	0	1	168	10	0	18	120	8	0	22	1	31	0	15	0	0	394	1,337	0	0	0	0
9:00 AM	0	2	130	7	1	25	100	7	0	10	0	32	0	12	0	1	327		0	0	1	0
9:15 AM	0	0	115	6	0	17	122	6	0	15	0	26	0	11	0	1	319		0	3	0	0
9:30 AM	0	1	117	11	0	13	97	7	0	6	0	28	0	15	2	0	297		0	0	0	0
Count Total	0	6	1,332	139	1	172	886	60	0	166	5	317	0	142	8	11	3,245		0	7	1	2
Peak Hour	0	2	802	105	0	99	447	32	0	113	4	200	0	89	6	9	1,908		0	4	0	2

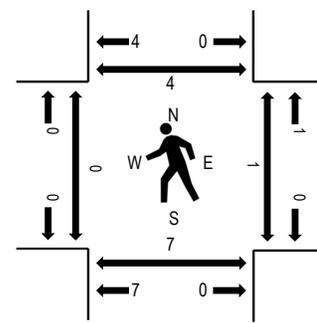
Peak Hour - Motorized Vehicles



Peak Hour - Bicycles



Peak Hour - Pedestrians

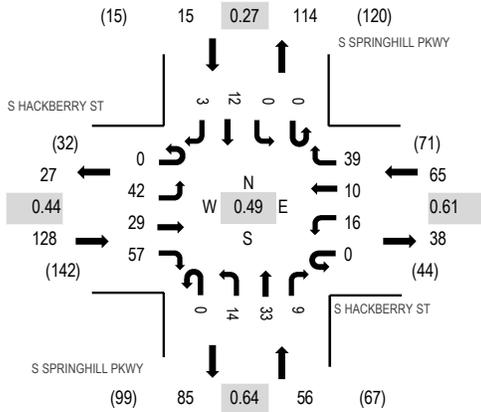


Note: Total study counts contained in parentheses.

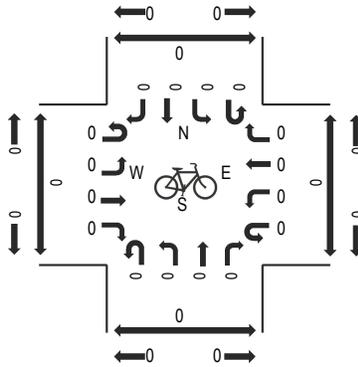
Traffic Counts - Motorized Vehicles

Interval Start Time	W HIGHLAND RANCH PKW												W HIGHLAND RANCH PKWY				WESTRIDGE VILLAGE PKWY				WESTRIDGE VILLAGE PKWY				Rolling Hour	Pedestrian Crossings			
	Eastbound				Westbound				Northbound				Southbound				Total	West	East	South	North								
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right													
2:30 PM	0	0	166	12	0	32	121	8	0	7	1	26	0	12	1	1	387	1,908	1	0	1	1							
2:45 PM	0	1	166	17	0	40	164	15	0	8	1	23	0	14	0	1	450	2,150	0	3	0	0							
3:00 PM	0	1	159	32	0	58	220	11	0	6	0	28	0	14	2	1	532	2,217	0	1	5	3							
3:15 PM	0	2	171	56	0	49	173	16	0	9	0	33	0	26	3	1	539	2,162	0	0	0	0							
3:30 PM	0	3	168	17	0	36	236	34	0	51	2	69	0	13	0	0	629	2,079	0	0	2	0							
3:45 PM	0	1	139	17	0	42	212	17	0	24	1	45	0	16	0	3	517		0	0	0	1							
4:00 PM	0	1	186	16	0	30	169	14	0	13	1	35	0	10	0	2	477		0	0	0	1							
4:15 PM	0	2	166	15	0	36	173	15	0	8	0	17	0	23	0	1	456		0	0	1	0							
Count Total	0	11	1,321	182	0	323	1,468	130	0	126	6	276	0	128	6	10	3,987		1	4	9	6							
Peak Hour	0	7	637	122	0	185	841	78	0	90	3	175	0	69	5	5	2,217		0	1	7	4							

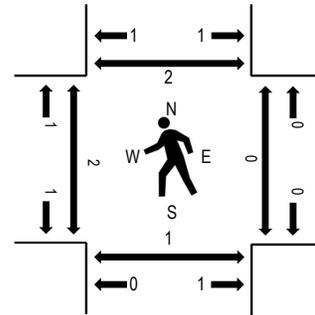
Peak Hour - Motorized Vehicles



Peak Hour - Bicycles



Peak Hour - Pedestrians



Note: Total study counts contained in parentheses.

Traffic Counts - Motorized Vehicles

Interval Start Time	S HACKBERRY ST Eastbound				S HACKBERRY ST Westbound				S SPRINGHILL PKWY Northbound				S SPRINGHILL PKWY Southbound				Total	Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
	7:45 AM	0	0	0	6	0	3	0	1	0	3	2	2	0	0	0			0	17	260	0
8:00 AM	0	2	1	6	0	7	1	2	0	3	6	2	0	0	0	0	30	264	1	0	0	1
8:15 AM	0	20	5	11	0	2	3	22	0	2	14	0	0	0	0	0	79	248	0	0	1	0
8:30 AM	0	19	19	35	0	5	6	14	0	7	10	5	0	0	11	3	134		0	0	0	1
8:45 AM	0	1	4	5	0	2	0	1	0	2	3	2	0	0	1	0	21		1	0	0	0
9:00 AM	0	1	3	4	0	1	0	1	0	2	1	1	0	0	0	0	14		0	0	0	1
Count Total	0	43	32	67	0	20	10	41	0	19	36	12	0	0	12	3	295		2	0	1	4
Peak Hour	0	42	29	57	0	16	10	39	0	14	33	9	0	0	12	3	264		2	0	1	2

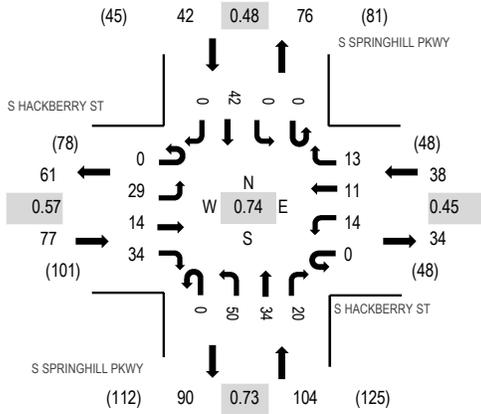
Location: 42 S SPRINGHILL PKWY & S HACKBERRY ST PM

Date: Wednesday, November 13, 2024

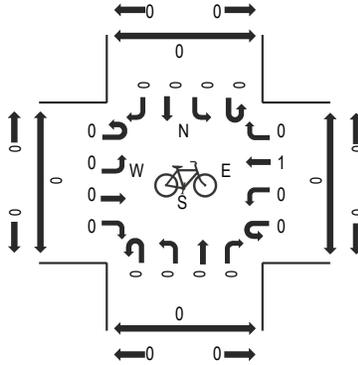
Peak Hour: 03:00 PM - 04:00 PM

Peak 15-Minutes: 03:30 PM - 03:45 PM

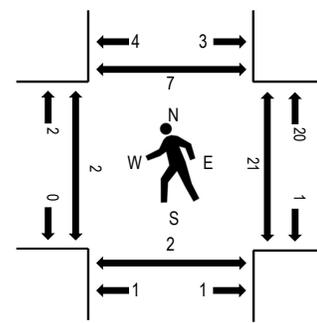
Peak Hour - Motorized Vehicles



Peak Hour - Bicycles



Peak Hour - Pedestrians



Note: Total study counts contained in parentheses.

Traffic Counts - Motorized Vehicles

Interval Start Time	S HACKBERRY ST Eastbound				S HACKBERRY ST Westbound				S SPRINGHILL PKWY Northbound				S SPRINGHILL PKWY Southbound				Total	Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
	2:45 PM	0	1	2	4	0	4	2	0	0	7	0	6	0	0	0			0	26	249	0
3:00 PM	0	5	1	3	0	2	2	1	0	18	11	7	0	0	1	0	51	261	0	16	2	4
3:15 PM	0	19	2	6	0	5	7	10	0	16	16	3	0	0	0	0	84	242	2	4	0	2
3:30 PM	0	5	10	22	0	4	1	2	0	9	6	6	0	0	23	0	88		0	1	0	0
3:45 PM	0	0	1	3	0	3	1	0	0	7	1	4	0	0	18	0	38		0	0	0	1
4:00 PM	0	1	6	10	0	1	2	1	0	6	2	0	0	0	3	0	32		0	0	0	3
Count Total	0	31	22	48	0	19	15	14	0	63	36	26	0	0	45	0	319		2	22	5	10
Peak Hour	0	29	14	34	0	14	11	13	0	50	34	20	0	0	42	0	261		2	21	2	7

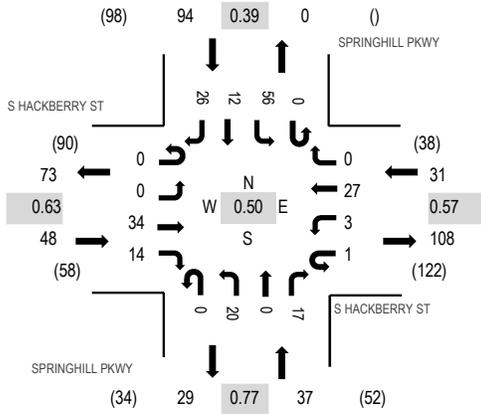
Location: 43 SPRINGHILL PKWY & S HACKBERRY ST AM

Date: Wednesday, November 13, 2024

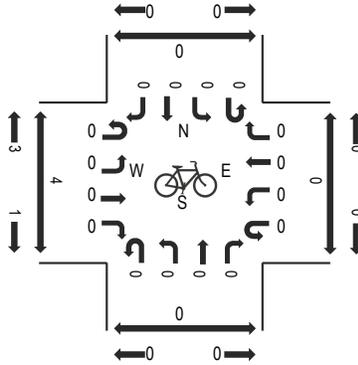
Peak Hour: 08:00 AM - 09:00 AM

Peak 15-Minutes: 08:30 AM - 08:45 AM

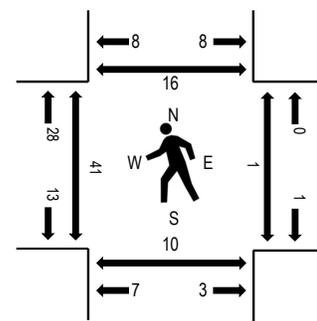
Peak Hour - Motorized Vehicles



Peak Hour - Bicycles



Peak Hour - Pedestrians



Note: Total study counts contained in parentheses.

Traffic Counts - Motorized Vehicles

Interval Start Time	S HACKBERRY ST Eastbound				S HACKBERRY ST Westbound				SPRINGHILL PKWY Northbound				SPRINGHILL PKWY Southbound				Total	Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
7:45 AM	0	0	5	1	0	1	3	0	0	3	0	3	0	0	0	1	17	208	0	0	0	2
8:00 AM	0	0	5	2	0	0	4	0	0	5	0	1	0	3	1	0	21	210	0	0	0	0
8:15 AM	0	0	15	5	0	1	9	0	0	7	0	5	0	16	1	6	65	208	10	1	4	3
8:30 AM	0	0	12	5	1	2	11	0	0	4	0	9	0	34	9	18	105		31	0	6	12
8:45 AM	0	0	2	2	0	0	3	0	0	4	0	2	0	3	1	2	19		0	0	0	1
9:00 AM	0	0	3	1	0	1	2	0	0	6	0	3	0	0	1	2	19		0	0	0	1
Count Total	0	0	42	16	1	5	32	0	0	29	0	23	0	56	13	29	246		41	1	10	19
Peak Hour	0	0	34	14	1	3	27	0	0	20	0	17	0	56	12	26	210		41	1	10	16

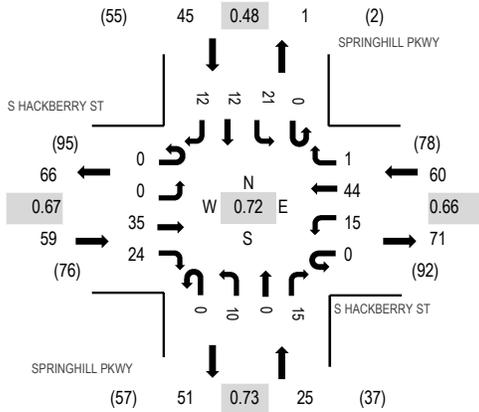
Location: 43 SPRINGHILL PKWY & S HACKBERRY ST PM

Date: Wednesday, November 13, 2024

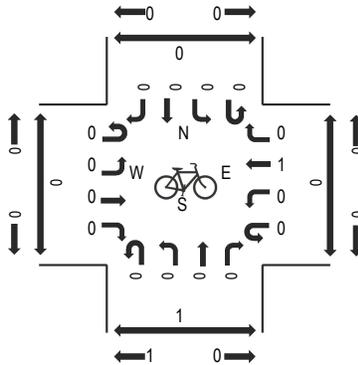
Peak Hour: 03:00 PM - 04:00 PM

Peak 15-Minutes: 03:30 PM - 03:45 PM

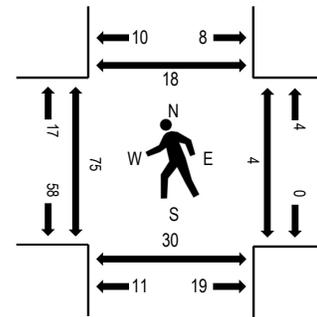
Peak Hour - Motorized Vehicles



Peak Hour - Bicycles



Peak Hour - Pedestrians



Note: Total study counts contained in parentheses.

Traffic Counts - Motorized Vehicles

Interval Start Time	S HACKBERRY ST Eastbound				S HACKBERRY ST Westbound				SPRINGHILL PKWY Northbound				SPRINGHILL PKWY Southbound				Total	Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
2:45 PM	0	0	7	0	0	0	10	0	1	4	1	1	0	1	0	1	26	183	2	1	2	2
3:00 PM	0	0	5	5	0	2	14	1	0	3	0	3	0	1	1	1	36	189	3	0	7	5
3:15 PM	0	0	8	3	0	4	20	0	0	4	0	6	0	5	4	1	55	184	26	2	7	4
3:30 PM	0	0	18	4	0	6	6	0	0	1	0	5	0	14	6	6	66		41	1	14	5
3:45 PM	0	0	4	12	0	3	4	0	0	2	0	1	0	1	1	4	32		5	1	2	4
4:00 PM	0	0	7	3	0	2	6	0	0	3	0	2	0	3	0	5	31		2	1	3	4
Count Total	0	0	49	27	0	17	60	1	1	17	1	18	0	25	12	18	246		79	6	35	24
Peak Hour	0	0	35	24	0	15	44	1	0	10	0	15	0	21	12	12	189		75	4	30	18

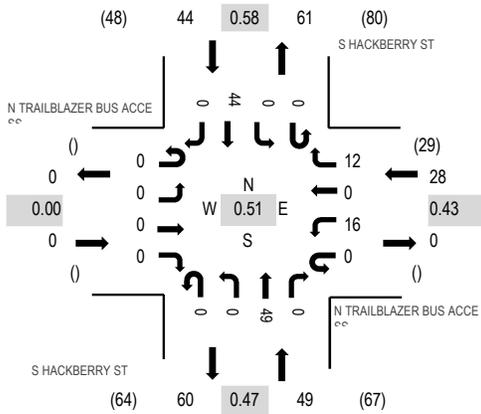
Location: 44 S HACKBERRY ST & N TRAILBLAZER BUS ACCESS AM

Date: Wednesday, November 13, 2024

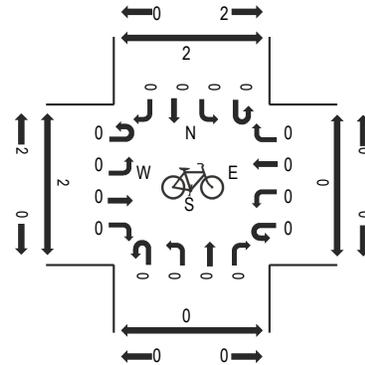
Peak Hour: 07:45 AM - 08:45 AM

Peak 15-Minutes: 08:30 AM - 08:45 AM

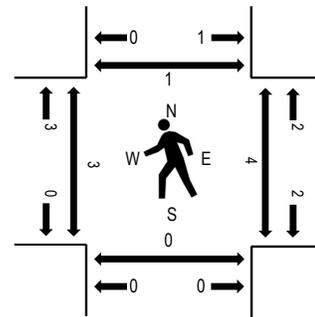
Peak Hour - Motorized Vehicles



Peak Hour - Bicycles



Peak Hour - Pedestrians



Note: Total study counts contained in parentheses.

Traffic Counts - Motorized Vehicles

Interval Start Time	N TRAILBLAZER BUS ACCESS Eastbound				N TRAILBLAZER BUS ACCESS Westbound				S HACKBERRY ST Northbound				S HACKBERRY ST Southbound				Total	Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
7:45 AM	0	0	0	0	0	0	0	0	0	0	6	0	0	0	7	0	13	121	1	2	0	0
8:00 AM	0	0	0	0	0	1	0	0	0	0	6	0	0	0	5	0	12	120	0	0	0	0
8:15 AM	0	0	0	0	0	6	0	4	0	0	8	0	0	0	19	0	37	119	0	1	0	0
8:30 AM	0	0	0	0	0	9	0	8	0	0	29	0	0	0	13	0	59		2	1	0	1
8:45 AM	0	0	0	0	0	0	0	1	0	0	9	0	0	0	2	0	12		1	0	0	0
9:00 AM	0	0	0	0	0	0	0	0	0	0	9	0	0	0	2	0	11		0	0	0	0
Count Total	0	0	0	0	0	16	0	13	0	0	67	0	0	0	48	0	144		4	4	0	1
Peak Hour	0	0	0	0	0	16	0	12	0	0	49	0	0	0	44	0	121		3	4	0	1

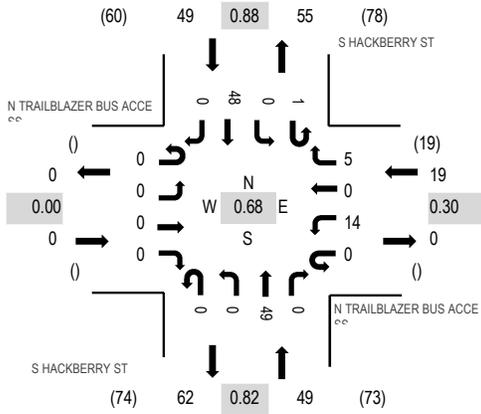
Location: 44 S HACKBERRY ST & N TRAILBLAZER BUS ACCESS PM

Date: Wednesday, November 13, 2024

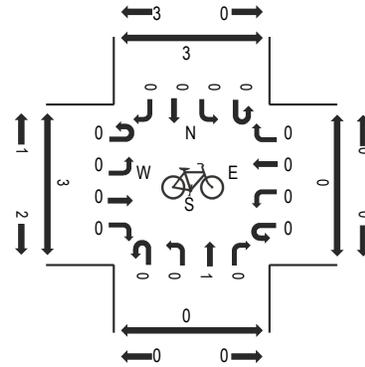
Peak Hour: 03:00 PM - 04:00 PM

Peak 15-Minutes: 03:30 PM - 03:45 PM

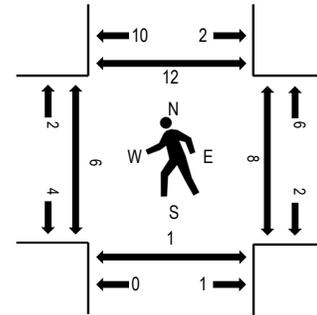
Peak Hour - Motorized Vehicles



Peak Hour - Bicycles



Peak Hour - Pedestrians



Note: Total study counts contained in parentheses.

Traffic Counts - Motorized Vehicles

Interval Start Time	N TRAILBLAZER BUS ACCESS Eastbound				N TRAILBLAZER BUS ACCESS Westbound				S HACKBERRY ST Northbound				S HACKBERRY ST Southbound				Total	Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
2:45 PM	0	0	0	0	0	0	0	0	0	0	13	0	0	0	5	0	18	106	1	1	0	0
3:00 PM	0	0	0	0	0	0	0	0	0	0	14	0	0	0	9	0	23	117	0	3	0	0
3:15 PM	0	0	0	0	0	2	0	0	0	0	6	0	1	0	13	0	22	111	2	3	1	2
3:30 PM	0	0	0	0	0	11	0	5	0	0	15	0	0	0	12	0	43		4	2	0	10
3:45 PM	0	0	0	0	0	1	0	0	0	0	14	0	0	0	14	0	29		0	0	0	0
4:00 PM	0	0	0	0	0	0	0	0	1	0	10	0	0	0	6	0	17		1	2	0	1
Count Total	0	0	0	0	0	14	0	5	1	0	72	0	1	0	59	0	152		8	11	1	13
Peak Hour	0	0	0	0	0	14	0	5	0	0	49	0	1	0	48	0	117		6	8	1	12

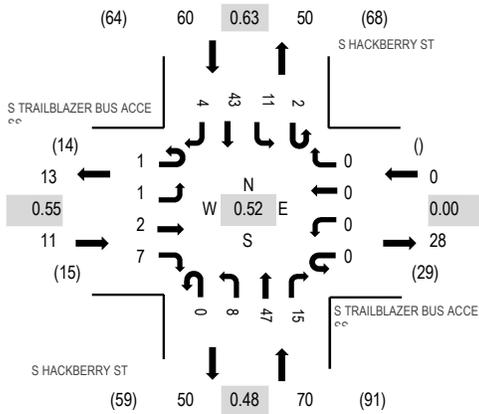
Location: 45 S HACKBERRY ST & S TRAILBLAZER BUS ACCESS AM

Date: Wednesday, November 13, 2024

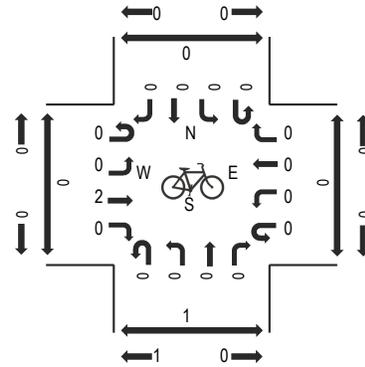
Peak Hour: 07:45 AM - 08:45 AM

Peak 15-Minutes: 08:30 AM - 08:45 AM

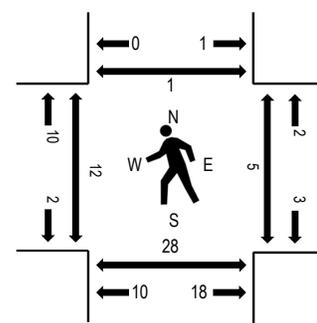
Peak Hour - Motorized Vehicles



Peak Hour - Bicycles



Peak Hour - Pedestrians



Note: Total study counts contained in parentheses.

Traffic Counts - Motorized Vehicles

Interval Start Time	S TRAILBLAZER BUS Access				S TRAILBLAZER BUS Access				S HACKBERRY ST Northbound				S HACKBERRY ST Southbound				Total	Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
7:45 AM	0	0	0	2	0	0	0	0	0	1	5	0	2	0	4	1	15	141	1	2	2	0
8:00 AM	1	0	0	1	0	0	0	0	0	2	6	1	0	0	6	0	17	141	0	2	1	0
8:15 AM	0	0	1	1	0	0	0	0	0	0	8	7	0	5	19	0	41	138	0	0	7	1
8:30 AM	0	1	1	3	0	0	0	0	0	5	28	7	0	6	14	3	68		11	1	18	0
8:45 AM	0	0	0	2	0	0	0	0	0	1	9	1	0	0	2	0	15		1	0	0	0
9:00 AM	0	0	0	2	0	0	0	0	1	0	9	0	0	0	2	0	14		0	0	0	0
Count Total	1	1	2	11	0	0	0	0	1	9	65	16	2	11	47	4	170		13	5	28	1
Peak Hour	1	1	2	7	0	0	0	0	0	8	47	15	2	11	43	4	141		12	5	28	1

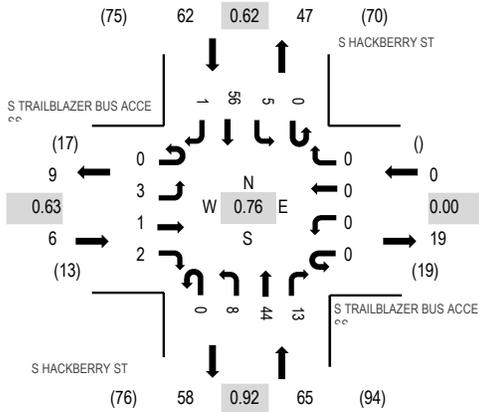
Location: 45 S HACKBERRY ST & S TRAILBLAZER BUS ACCESS PM

Date: Wednesday, November 13, 2024

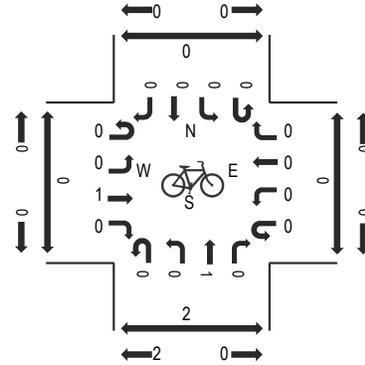
Peak Hour: 03:00 PM - 04:00 PM

Peak 15-Minutes: 03:30 PM - 03:45 PM

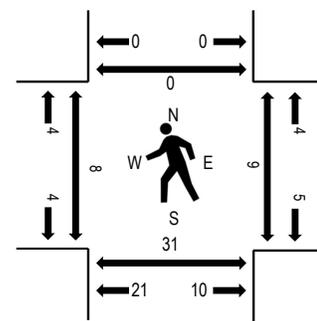
Peak Hour - Motorized Vehicles



Peak Hour - Bicycles



Peak Hour - Pedestrians



Note: Total study counts contained in parentheses.

Traffic Counts - Motorized Vehicles

Interval Start Time	S TRAILBLAZER BUS ACCESS Eastbound				S TRAILBLAZER BUS ACCESS Westbound				S HACKBERRY ST Northbound				S HACKBERRY ST Southbound				Total	Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
2:45 PM	0	1	0	2	0	0	0	0	0	4	11	0	0	0	6	0	24	128	1	1	1	0
3:00 PM	0	0	0	0	0	0	0	0	0	3	14	1	0	0	9	0	27	133	1	0	3	0
3:15 PM	0	0	1	1	0	0	0	0	0	2	6	10	0	1	12	0	33	131	2	4	9	0
3:30 PM	0	0	0	0	0	0	0	0	0	3	15	1	0	4	20	1	44		5	5	16	0
3:45 PM	0	3	0	1	0	0	0	0	0	0	9	1	0	0	15	0	29		0	0	3	0
4:00 PM	0	0	0	4	0	0	0	0	0	3	11	0	0	0	6	1	25		1	2	3	0
Count Total	0	4	1	8	0	0	0	0	0	15	66	13	0	5	68	2	182		10	12	35	0
Peak Hour	0	3	1	2	0	0	0	0	0	8	44	13	0	5	56	1	133		8	9	31	0



Appendix C Existing Traffic Signal Timing Plans

Station : 19 - HR Pkwy & WR Pkwy/Springhill Pkwy (Standard File)

Phase [1.1.1]

	φ1 (SWL)	φ2 (NET)	φ3 (NWL)	φ4 (SET)	φ5 (NEL)	φ6 (SWT)	φ7	φ8 (NWT)	φ9	φ10	φ11	φ12	φ13	φ14	φ15	φ16
Walk	0	5	0	0	0	5	0	5	0	0	0	0	0	0	0	0
Ped Clearance	0	19	0	0	0	20	0	27	0	0	0	0	0	0	0	0
Min Green	5	15	5	13	5	15	5	13	0	0	0	0	0	0	0	0
Gap Ext	1.5	3	2.5	2.5	1.5	3	1.5	2.5	0	0	0	0	0	0	0	0
Max1	25	40	40	25	15	40	15	40	0	0	0	0	0	0	0	0
Max2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Yellow Clr	3	4.5	3	4.5	3	4.5	3	4.5	3	3	3	3	3	3	3	3
Red Clr	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Red Revert	0	5	0	5	0	5	0	5	0	0	0	0	0	0	0	0
Added Initial	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Max Initial	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Time Before Reduce	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cars Before Reduce	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Time To Reduce	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Reduce By	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Min Gap	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dynamic Max Limit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dynamic Max Step	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Auto Flash Entry				ON				ON								
Auto Flash Exit		ON				ON										
Non-Actuated 1																
Non-Actuated 2																

Phase Option [1.1.2]

	φ1 (SWL)	φ2 (NET)	φ3 (NWL)	φ4 (SET)	φ5 (NEL)	φ6 (SWT)	φ7	φ8 (NWT)	φ9	φ10	φ11	φ12	φ13	φ14	φ15	φ16
Enable	ON	ON	ON	ON	ON	ON	ON	ON								
Lock Call									ON	ON	ON	ON	ON	ON	ON	ON
Min Recall		ON				ON										
Max Recall																
Ped Recall																
Soft Recall																
Dual Entry		ON		ON		ON		ON								
Sim Gap Enable	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON
Guar Passage																
Rest In Walk																
Cond Service																
Add Init Calc																

Phase Option+ [1.1.3]/[1.1.5]

	φ1	φ2	φ3	φ4	φ5	φ6	φ7	φ8	φ9	φ10	φ11	φ12	φ13	φ14	φ15	φ16
Reservice																
Ped Clr Thru Yellow																
Skip Red-NoCall																
Red Rest																
Max 2																
Max Inhibit																
Ped Delay																
Red Rest On Gap																
Conflicting P																
Green Ped Delay Time		5				5		5								
Omit Yel																
Ped Out																
Start Yel																
Inhibit P1																
Inhibit P2																
Inhibit P3																
Inhibit P4																
Inhibit P5																
Inhibit P6																
Inhibit P7																
Inhibit P8																
Call Phs1																
Call Phs2																
Redirect P Calls From 1																
Redirect P Calls To 1																
Redirect P Calls From 2																
Redirect P Calls To 2																
Redirect P Calls From 3																
Redirect P Calls To 3																
Redirect P Calls From 4																
Redirect P Calls To 4																

Prepared By / Date

Reviewed By / Date

Station : 19 - HR Pkwy & WR Pkwy/Springhill Pkwy (Standard File)

Preemption Times[3.1]/Phases[3.2]/Options[3.3]

Channel	1	2	3	4	5	6
Lock Input	ON	ON	ON	ON	ON	ON
Override Auto Flash	ON	ON				
Override Higher Preempt	ON	ON				
Flash in Dwell						
Link to Preempt	0	0	0	0	0	0
Delay	0	0	0	0	0	0
Min Duration	0	0	5	5	5	5
Min Green	0	0	5	5	5	5
Min Walk	0	0	0	0	0	0
Ped Clear	0	0	3	3	3	3
Track Green	0	0	0	0	0	0
Min Dwell	0	0	0	0	0	0
Max Presence	0	0	120	120	120	120
Track Veh 1	0	0	0	0	0	0
Track Veh 2	0	0	0	0	0	0
Track Veh 3	0	0	0	0	0	0
Track Veh 4	0	0	0	0	0	0
Dwell Cyc Veh 1	0	0	2	4	1	3
Dwell Cyc Veh 2	0	0	5	7	6	8
Dwell Cyc Veh 3	0	0	0	0	0	0
Dwell Cyc Veh 4	0	0	0	0	0	0
Dwell Cyc Veh 5	0	0	0	0	0	0
Dwell Cyc Veh 6	0	0	0	0	0	0
Dwell Cyc Veh 7	0	0	0	0	0	0
Dwell Cyc Veh 8	0	0	0	0	0	0
Dwell Cyc Veh 9	0	0	0	0	0	0
Dwell Cyc Veh 10	0	0	0	0	0	0
Dwell Cyc Veh 11	0	0	0	0	0	0
Dwell Cyc Veh 12	0	0	0	0	0	0
Dwell Cyc Ped1	0	0	0	0	0	0
Dwell Cyc Ped2	0	0	0	0	0	0
Dwell Cyc Ped3	0	0	0	0	0	0
Dwell Cyc Ped4	0	0	0	0	0	0
Dwell Cyc Ped5	0	0	0	0	0	0
Dwell Cyc Ped6	0	0	0	0	0	0
Dwell vPed7	0	0	0	0	0	0
Dwell Cyc Ped8	0	0	0	0	0	0
Exit 1	0	0	4	4	4	4
Exit 2	0	0	7	7	7	7
Exit 3	0	0	0	0	0	0
Exit 4	0	0	0	0	0	0

Preemption Times+[3.4]/Overlaps+[3.5]/Options+[3.6]

Preempt	1	2	3	4	5	6
Enable			ON	ON	ON	ON
Type	RAIL	RAIL	EMERG	EMERG	EMERG	EMERG
Skip Track						
Volt Mon Flash						
Coord in Preempt						
Return Max/Min	MAX	MAX	MAX	MAX	MAX	MAX
Extend Dwell	0	0	0	0	0	0
Pattern	0	0	0	0	0	0
Output Mode	TS2	TS2	TS2	TS2	TS2	TS2
Track Over 1	0	0	0	0	0	0
Track Over 2	0	0	0	0	0	0
Track Over 3	0	0	0	0	0	0
Track Over 4	0	0	0	0	0	0
Track Over 5	0	0	0	0	0	0
Track Over 6	0	0	0	0	0	0
Track Over 7	0	0	0	0	0	0
Track Over 8	0	0	0	0	0	0
Track Over 9	0	0	0	0	0	0
Track Over 10	0	0	0	0	0	0
Track Over 11	0	0	0	0	0	0
Track Over 12	0	0	0	0	0	0
DwellCyc Over 1	0	0	1	1	1	1
DwellCyc Over 2	0	0	2	2	2	2
DwellCyc Over 3	0	0	3	3	3	3
DwellCyc Over 4	0	0	4	4	4	4
DwellCyc Over 5	0	0	0	0	0	0
DwellCyc Over 6	0	0	0	0	0	0
DwellCyc Over 7	0	0	0	0	0	0
DwellCyc Over 8	0	0	0	0	0	0
DwellCyc Over 9	0	0	0	0	0	0
DwellCyc Over 10	0	0	0	0	0	0
DwellCyc Over 11	0	0	0	0	0	0
DwellCyc Over 12	0	0	0	0	0	0
Ped Clear	0	0	0	0	0	0
Yellow	0	0	0	0	0	0
Red	0	0	0	0	0	0
Return Max	0	0	0	0	0	0

Preemption Adv Times[3.8]/Init Dwell [3.9]

Preempt	1	2	3	4	5	6
All Red B4 Preempt						
Reset Ext Dwell						
Reservice Preempt						
End Dwell						
DsblDwellCalls						
Enter Yellow Change	25.5	25.5	25.5	25.5	25.5	25.5
Enter Red Clear	25.5	25.5	25.5	25.5	25.5	25.5
Track Yellow Change	25.5	25.5	25.5	25.5	25.5	25.5
Track Red Clear	25.5	25.5	25.5	25.5	25.5	25.5
Dynamic Exit Threshold	0	0	0	0	0	0
Initial Dwell Phase 1	0	0	0	0	0	0
Initial Dwell Phase 2	0	0	0	0	0	0
Initial Dwell Phase 3	0	0	0	0	0	0
Initial Dwell Phase 4	0	0	0	0	0	0
Ped 1	0	0	0	0	0	0
Ped 2	0	0	0	0	0	0
Ped 3	0	0	0	0	0	0
Ped 4	0	0	0	0	0	0
Initial Dwell Overlap 1	0	0	0	0	0	0
Initial Dwell Overlap 2	0	0	0	0	0	0
Initial Dwell Overlap 3	0	0	0	0	0	0
Initial Dwell Overlap 4	0	0	0	0	0	0
Initial Dwell Overlap 5	0	0	0	0	0	0
Initial Dwell Overlap 6	0	0	0	0	0	0
Initial Dwell Overlap 7	0	0	0	0	0	0
Initial Dwell Overlap 8	0	0	0	0	0	0
Initial Dwell Overlap 9	0	0	0	0	0	0
Initial Dwell Overlap 10	0	0	0	0	0	0
Initial Dwell Overlap 11	0	0	0	0	0	0
Initial Dwell Overlap 12	0	0	0	0	0	0
Initial Dwell Overlap 13	0	0	0	0	0	0
Initial Dwell Overlap 14	0	0	0	0	0	0
Initial Dwell Overlap 15	0	0	0	0	0	0

Station : 19 - HR Pkwy & WR Pkwy/Springhill Pkwy (Standard File)

TB Coor, Action Table [4.5]

Action	Pattern	Aux 1	Aux 2	Aux 3	Special 1	Special 2	Special 3	Special 4	Special 5	Special 6	Special 7	Special 8
1	1				0	0						
2	2				0	0						
3	3				0	0						
4	4				0	0						
5	5				0	0						
6	6				0	0						
7	7				0	0						
8	8				0	0						
9	9				0	0						
10	10				0	0						
11	11				0	0						
12	12				0	0						
13	13				0	0						
14	14				0	0						
15	15				0	0						
16	16				0	0						
17	17				0	0						
18	18				0	0						
19	19				0	0						
20	20				0	0						
21	21				0	0						
22	22				0	0						
23	23				0	0						
24	24				0	0						
25	25				0	0						
26	26				0	0						
27	27				0	0						
28	28				0	0						
29	29				0	0						
30	30				0	0						
31	31				0	0						
32	32				0	0						
33					0	0						
34					0	0						
35					0	0						
36					0	0						
37					0	0						
38					0	0						
39					0	0						
40					0	0						
41					0	0						
42					0	0						
43					0	0						
44					0	0						
45					0	0						
46					0	0						
47					0	0						
48					0	0						
49					0	0						
50					0	0						
51					0	0						
52					0	0						
53					0	0						
54					0	0						
55					0	0						
56					0	0						
57					0	0						
58					0	0						
59					0	0						
60					0	0						
61					0	0						
62					0	0						
63					0	0						
64					0	0						
99	254				0	0						
100	255				0	0						

Station : 33 - HR Pkwy & Deer Creek/Westridge Village Pkwy (Standard File)

Phase [1.1.1]

	φ1 (WL)	φ2 (ET)	φ3	φ4 (ST)	φ5 (EL)	φ6 (WT)	φ7	φ8 (NT)	φ9	φ10	φ11	φ12	φ13	φ14	φ15	φ16
Walk	0	5	0	5	0	5	0	5	0	0	0	0	0	0	0	0
Ped Clearance	0	13	0	23	0	11	0	22	0	0	0	0	0	0	0	0
Min Green	5	20	0	5	5	20	0	5	0	0	0	0	0	0	0	0
Gap Ext	1.5	3	0	2	1.5	3	0	2	0	0	0	0	0	0	0	0
Max1	15	40	0	25	15	40	0	25	0	0	0	0	0	0	0	0
Max2	8	30	0	20	8	30	0	20	0	0	0	0	0	0	0	0
Yellow Clr	3	4.5	0	3	3	4.5	0	3	3	3	3	3	3	3	3	3
Red Clr	1	2	0	2	1	2	0	2	2	2	2	2	2	2	2	2
Red Revert	5	5	0	5	5	5	0	5	0	0	0	0	0	0	0	0
Added Initial	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Max Initial	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Time Before Reduce	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cars Before Reduce	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Time To Reduce	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Reduce By	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Min Gap	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dynamic Max Limit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dynamic Max Step	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Auto Flash Entry				ON				ON								
Auto Flash Exit		ON				ON										
Non-Actuated 1																
Non-Actuated 2																

Phase Option [1.1.2]

	φ1 (WL)	φ2 (ET)	φ3	φ4 (ST)	φ5 (EL)	φ6 (WT)	φ7	φ8 (NT)	φ9	φ10	φ11	φ12	φ13	φ14	φ15	φ16
Enable	ON	ON		ON	ON	ON		ON								
Lock Call									ON	ON	ON	ON	ON	ON	ON	ON
Min Recall		ON				ON										
Max Recall																
Ped Recall																
Soft Recall																
Dual Entry		ON		ON		ON		ON								
Sim Gap Enable	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON
Guar Passage																
Rest In Walk		ON														
Cond Service																
Add Init Calc																

Phase Option+ [1.1.3]/[1.1.5]

	φ1	φ2	φ3	φ4	φ5	φ6	φ7	φ8	φ9	φ10	φ11	φ12	φ13	φ14	φ15	φ16
Reservice																
Ped Clr Thru Yellow																
Skip Red-NoCall																
Red Rest																
Max 2																
Max Inhibit																
Ped Delay																
Red Rest On Gap																
Conflicting P																
Green Ped Delay Time																
Omit Yel																
Ped Out																
Start Yel																
Inhibit P1		ON														
Inhibit P2																
Inhibit P3																
Inhibit P4																
Inhibit P5						ON										
Inhibit P6																
Inhibit P7																
Inhibit P8																
Call Phs1																
Call Phs2																
Redirect P Calls From 1																
Redirect P Calls To 1																
Redirect P Calls From 2																
Redirect P Calls To 2																
Redirect P Calls From 3																
Redirect P Calls To 3																
Redirect P Calls From 4																
Redirect P Calls To 4																

Prepared By / Date

Reviewed By / Date

Station : 33 - HR Pkwy & Deer Creek/Westridge Village Pkwy (Standard File)

Preemption Times[3.1]/Phases[3.2]/Options[3.3]

Channel	1	2	3	4	5	6
Lock Input	ON	ON	ON	ON	ON	ON
Override Auto Flash	ON	ON				
Override Higher Preempt	ON	ON				
Flash in Dwell						
Link to Preempt	0	0	0	0	0	0
Delay	0	0	0	0	0	0
Min Duration	0	0	5	5	5	5
Min Green	0	0	5	5	5	5
Min Walk	0	0	0	0	0	0
Ped Clear	0	0	0	0	0	0
Track Green	0	0	0	0	0	0
Min Dwell	0	0	0	0	0	0
Max Presence	0	0	120	120	120	120
Track Veh 1	0	0	0	0	0	0
Track Veh 2	0	0	0	0	0	0
Track Veh 3	0	0	0	0	0	0
Track Veh 4	0	0	0	0	0	0
Dwell Cyc Veh 1	0	0	2	4	1	8
Dwell Cyc Veh 2	0	0	5	0	6	0
Dwell Cyc Veh 3	0	0	0	0	0	0
Dwell Cyc Veh 4	0	0	0	0	0	0
Dwell Cyc Veh 5	0	0	0	0	0	0
Dwell Cyc Veh 6	0	0	0	0	0	0
Dwell Cyc Veh 7	0	0	0	0	0	0
Dwell Cyc Veh 8	0	0	0	0	0	0
Dwell Cyc Veh 9	0	0	0	0	0	0
Dwell Cyc Veh 10	0	0	0	0	0	0
Dwell Cyc Veh 11	0	0	0	0	0	0
Dwell Cyc Veh 12	0	0	0	0	0	0
Dwell Cyc Ped1	0	0	0	0	0	0
Dwell Cyc Ped2	0	0	0	0	0	0
Dwell Cyc Ped3	0	0	0	0	0	0
Dwell Cyc Ped4	0	0	0	0	0	0
Dwell Cyc Ped5	0	0	0	0	0	0
Dwell Cyc Ped6	0	0	0	0	0	0
Dwell vPed7	0	0	0	0	0	0
Dwell Cyc Ped8	0	0	0	0	0	0
Exit 1	0	0	4	0	4	0
Exit 2	0	0	8	0	8	0
Exit 3	0	0	0	0	0	0
Exit 4	0	0	0	0	0	0

Preemption Times+[3.4]/Overlaps+[3.5]/Options+[3.6]

Preempt	1	2	3	4	5	6
Enable			ON	ON	ON	ON
Type	RAIL	RAIL	EMERG	EMERG	EMERG	EMERG
Skip Track						
Volt Mon Flash						
Coord in Preempt						
Return Max/Min	MAX	MAX	MAX	MAX	MAX	MAX
Extend Dwell	0	0	0	0	0	0
Pattern	0	0	0	0	0	0
Output Mode	TS2	TS2	TS2	TS2	TS2	TS2
Track Over 1	0	0	0	0	0	0
Track Over 2	0	0	0	0	0	0
Track Over 3	0	0	0	0	0	0
Track Over 4	0	0	0	0	0	0
Track Over 5	0	0	0	0	0	0
Track Over 6	0	0	0	0	0	0
Track Over 7	0	0	0	0	0	0
Track Over 8	0	0	0	0	0	0
Track Over 9	0	0	0	0	0	0
Track Over 10	0	0	0	0	0	0
Track Over 11	0	0	0	0	0	0
Track Over 12	0	0	0	0	0	0
DwellCyc Over 1	0	0	0	0	0	0
DwellCyc Over 2	0	0	0	0	0	0
DwellCyc Over 3	0	0	0	0	0	0
DwellCyc Over 4	0	0	0	0	0	0
DwellCyc Over 5	0	0	0	0	0	0
DwellCyc Over 6	0	0	0	0	0	0
DwellCyc Over 7	0	0	0	0	0	0
DwellCyc Over 8	0	0	0	0	0	0
DwellCyc Over 9	0	0	0	0	0	0
DwellCyc Over 10	0	0	0	0	0	0
DwellCyc Over 11	0	0	0	0	0	0
DwellCyc Over 12	0	0	0	0	0	0
Ped Clear	0	0	0	0	0	0
Yellow	0	0	0	0	0	0
Red	0	0	0	0	0	0
Return Max	0	0	0	0	0	0

Preemption Adv Times[3.8]/Init Dwell [3.9]

Preempt	1	2	3	4	5	6
All Red B4 Preempt						
Reset Ext Dwell						
Reservice Preempt						
End Dwell						
DsblDwellCalls						
Enter Yellow Change	25.5	25.5	25.5	25.5	25.5	25.5
Enter Red Clear	25.5	25.5	25.5	25.5	25.5	25.5
Track Yellow Change	25.5	25.5	25.5	25.5	25.5	25.5
Track Red Clear	25.5	25.5	25.5	25.5	25.5	25.5
Dynamic Exit Threshold	0	0	0	0	0	0
Initial Dwell Phase 1	0	0	0	0	0	0
Initial Dwell Phase 2	0	0	0	0	0	0
Initial Dwell Phase 3	0	0	0	0	0	0
Initial Dwell Phase 4	0	0	0	0	0	0
Ped 1	0	0	0	0	0	0
Ped 2	0	0	0	0	0	0
Ped 3	0	0	0	0	0	0
Ped 4	0	0	0	0	0	0
Initial Dwell Overlap 1	0	0	0	0	0	0
Initial Dwell Overlap 2	0	0	0	0	0	0
Initial Dwell Overlap 3	0	0	0	0	0	0
Initial Dwell Overlap 4	0	0	0	0	0	0
Initial Dwell Overlap 5	0	0	0	0	0	0
Initial Dwell Overlap 6	0	0	0	0	0	0
Initial Dwell Overlap 7	0	0	0	0	0	0
Initial Dwell Overlap 8	0	0	0	0	0	0
Initial Dwell Overlap 9	0	0	0	0	0	0
Initial Dwell Overlap 10	0	0	0	0	0	0
Initial Dwell Overlap 11	0	0	0	0	0	0
Initial Dwell Overlap 12	0	0	0	0	0	0
Initial Dwell Overlap 13	0	0	0	0	0	0
Initial Dwell Overlap 14	0	0	0	0	0	0
Initial Dwell Overlap 15	0	0	0	0	0	0

Station : 33 - HR Pkwy & Deer Creek/Westridge Village Pkwy (Standard File)

TB Coor, Action Table [4.5]

Action	Pattern	Aux 1	Aux 2	Aux 3	Special 1	Special 2	Special 3	Special 4	Special 5	Special 6	Special 7	Special 8
1	1				0	0						
2	2				0	0						
3	3				0	0						
4	4				0	0						
5	5				0	0						
6	6				0	0						
7	7				0	0						
8	8				0	0						
9	9				0	0						
10	10				0	0						
11	11				0	0						
12	12				0	0						
13	13				0	0						
14	14				0	0						
15	15				0	0						
16	16				0	0						
17	17				0	0						
18	18				0	0						
19	19				0	0						
20	20				0	0						
21	21				0	0						
22	22				0	0						
23	23				0	0						
24	24				0	0						
25	25				0	0						
26	26				0	0						
27	27				0	0						
28	28				0	0						
29	29				0	0						
30	30				0	0						
31	31				0	0						
32	32				0	0						
33					0	0						
34					0	0						
35					0	0						
36					0	0						
37					0	0						
38					0	0						
39					0	0						
40					0	0						
41					0	0						
42					0	0						
43					0	0						
44					0	0						
45					0	0						
46					0	0						
47					0	0						
48					0	0						
49					0	0						
50					0	0						
51					0	0						
52					0	0						
53					0	0						
54					0	0						
55					0	0						
56					0	0						
57					0	0						
58					0	0						
59					0	0						
60					0	0						
61					0	0						
62					0	0						
63					0	0						
64					0	0						
99	254				0	0						
100	255				0	0						

Station : 66 - HR Pkwy & Foothills Canyon (Standard File)

Phase [1.1.1]

	φ1 (SWL)	φ2 (NET)	φ3	φ4 (SET)	φ5 (NEL)	φ6 (SWT)	φ7	φ8 (NWT)	φ9	φ10	φ11	φ12	φ13	φ14	φ15	φ16
Walk	0	5	0	5	0	5	0	5	0	0	0	0	0	0	0	0
Ped Clearance	0	15	0	26	0	15	0	27	0	0	0	0	0	0	0	0
Min Green	5	25	0	5	5	25	0	5	0	0	0	0	0	0	0	0
Gap Ext	1.5	3	0	3	1.5	3	0	3	0	0	0	0	0	0	0	0
Max1	10	45	0	30	10	45	0	30	0	0	0	0	0	0	0	0
Max2	8	25	0	15	8	25	0	15	0	0	0	0	0	0	0	0
Yellow Clr	3	4.5	3	3	3	4.5	3	3	3	3	3	3	3	3	3	3
Red Clr	2	2	3	2	2	2	4	2	2	2	2	2	2	2	2	2
Red Revert	5	5	0	5	5	5	0	5	0	0	0	0	0	0	0	0
Added Initial	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Max Initial	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Time Before Reduce	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cars Before Reduce	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Time To Reduce	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Reduce By	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Min Gap	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dynamic Max Limit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dynamic Max Step	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Auto Flash Entry				ON				ON								
Auto Flash Exit		ON				ON										
Non-Actuated 1																
Non-Actuated 2																

Phase Option [1.1.2]

	φ1 (SWL)	φ2 (NET)	φ3	φ4 (SET)	φ5 (NEL)	φ6 (SWT)	φ7	φ8 (NWT)	φ9	φ10	φ11	φ12	φ13	φ14	φ15	φ16
Enable	ON	ON		ON	ON	ON		ON								
Lock Call									ON	ON	ON	ON	ON	ON	ON	ON
Min Recall		ON				ON										
Max Recall																
Ped Recall																
Soft Recall																
Dual Entry		ON		ON		ON		ON								
Sim Gap Enable	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON
Guar Passage																
Rest In Walk		ON				ON										
Cond Service																
Add Init Calc																

Phase Option+ [1.1.3]/[1.1.5]

	φ1	φ2	φ3	φ4	φ5	φ6	φ7	φ8	φ9	φ10	φ11	φ12	φ13	φ14	φ15	φ16
Reservice																
Ped Clr Thru Yellow																
Skip Red-NoCall																
Red Rest																
Max 2																
Max Inhibit																
Ped Delay																
Red Rest On Gap																
Conflicting P																
Green Ped Delay Time				15				15								
Omit Yel																
Ped Out																
Start Yel																
Inhibit P1		ON														
Inhibit P2				ON												
Inhibit P3																
Inhibit P4																
Inhibit P5						ON										
Inhibit P6																
Inhibit P7								ON								
Inhibit P8																
Call Phs1																
Call Phs2																
Redirect P Calls From 1																
Redirect P Calls To 1																
Redirect P Calls From 2																
Redirect P Calls To 2																
Redirect P Calls From 3																
Redirect P Calls To 3																
Redirect P Calls From 4																
Redirect P Calls To 4																

Prepared By / Date

Reviewed By / Date

Station : 66 - HR Pkwy & Foothills Canyon (Standard File)

Preemption Times[3.1]/Phases[3.2]/Options[3.3]

Channel	1	2	3	4	5	6
Lock Input	ON	ON	ON	ON	ON	ON
Override Auto Flash	ON	ON				
Override Higher Preempt	ON	ON				
Flash in Dwell						
Link to Preempt	0	0	0	0	0	0
Delay	0	0	0	0	0	0
Min Duration	0	0	5	5	5	5
Min Green	0	0	5	5	5	5
Min Walk	0	0	0	0	0	0
Ped Clear	0	0	3	3	3	3
Track Green	0	0	0	0	0	0
Min Dwell	0	0	0	0	0	0
Max Presence	0	0	120	120	120	120
Track Veh 1	0	0	0	0	0	0
Track Veh 2	0	0	0	0	0	0
Track Veh 3	0	0	0	0	0	0
Track Veh 4	0	0	0	0	0	0
Dwell Cyc Veh 1	0	0	2	4	1	8
Dwell Cyc Veh 2	0	0	5	0	6	0
Dwell Cyc Veh 3	0	0	0	0	0	0
Dwell Cyc Veh 4	0	0	0	0	0	0
Dwell Cyc Veh 5	0	0	0	0	0	0
Dwell Cyc Veh 6	0	0	0	0	0	0
Dwell Cyc Veh 7	0	0	0	0	0	0
Dwell Cyc Veh 8	0	0	0	0	0	0
Dwell Cyc Veh 9	0	0	0	0	0	0
Dwell Cyc Veh 10	0	0	0	0	0	0
Dwell Cyc Veh 11	0	0	0	0	0	0
Dwell Cyc Veh 12	0	0	0	0	0	0
Dwell Cyc Ped1	0	0	0	0	0	0
Dwell Cyc Ped2	0	0	0	0	0	0
Dwell Cyc Ped3	0	0	0	0	0	0
Dwell Cyc Ped4	0	0	0	0	0	0
Dwell Cyc Ped5	0	0	0	0	0	0
Dwell Cyc Ped6	0	0	0	0	0	0
Dwell vPed7	0	0	0	0	0	0
Dwell Cyc Ped8	0	0	0	0	0	0
Exit 1	0	0	4	0	4	0
Exit 2	0	0	8	0	8	0
Exit 3	0	0	0	0	0	0
Exit 4	0	0	0	0	0	0

Preemption Times+[3.4]/Overlaps+[3.5]/Options+[3.6]

Preempt	1	2	3	4	5	6
Enable			ON	ON	ON	ON
Type	RAIL	RAIL	EMERG	EMERG	EMERG	EMERG
Skip Track						
Volt Mon Flash						
Coord in Preempt						
Return Max/Min	MAX	MAX	MAX	MAX	MAX	MAX
Extend Dwell	0	0	0	0	0	0
Pattern	0	0	0	0	0	0
Output Mode	TS2	TS2	TS2	TS2	TS2	TS2
Track Over 1	0	0	0	0	0	0
Track Over 2	0	0	0	0	0	0
Track Over 3	0	0	0	0	0	0
Track Over 4	0	0	0	0	0	0
Track Over 5	0	0	0	0	0	0
Track Over 6	0	0	0	0	0	0
Track Over 7	0	0	0	0	0	0
Track Over 8	0	0	0	0	0	0
Track Over 9	0	0	0	0	0	0
Track Over 10	0	0	0	0	0	0
Track Over 11	0	0	0	0	0	0
Track Over 12	0	0	0	0	0	0
DwellCyc Over 1	0	0	1	1	1	1
DwellCyc Over 2	0	0	2	2	2	2
DwellCyc Over 3	0	0	3	3	3	3
DwellCyc Over 4	0	0	4	4	4	4
DwellCyc Over 5	0	0	0	0	0	0
DwellCyc Over 6	0	0	0	0	0	0
DwellCyc Over 7	0	0	0	0	0	0
DwellCyc Over 8	0	0	0	0	0	0
DwellCyc Over 9	0	0	0	0	0	0
DwellCyc Over 10	0	0	0	0	0	0
DwellCyc Over 11	0	0	0	0	0	0
DwellCyc Over 12	0	0	0	0	0	0
Ped Clear	0	0	0	0	0	0
Yellow	0	0	0	0	0	0
Red	0	0	0	0	0	0
Return Max	0	0	0	0	0	0

Preemption Adv Times[3.8]/Init Dwell [3.9]

Preempt	1	2	3	4	5	6
All Red B4 Preempt						
Reset Ext Dwell						
Reservice Preempt						
End Dwell						
DsblDwellCalls						
Enter Yellow Change	25.5	25.5	25.5	25.5	25.5	25.5
Enter Red Clear	25.5	25.5	25.5	25.5	25.5	25.5
Track Yellow Change	25.5	25.5	25.5	25.5	25.5	25.5
Track Red Clear	25.5	25.5	25.5	25.5	25.5	25.5
Dynamic Exit Threshold	0	0	0	0	0	0
Initial Dwell Phase 1	0	0	0	0	0	0
Initial Dwell Phase 2	0	0	0	0	0	0
Initial Dwell Phase 3	0	0	0	0	0	0
Initial Dwell Phase 4	0	0	0	0	0	0
Ped 1	0	0	0	0	0	0
Ped 2	0	0	0	0	0	0
Ped 3	0	0	0	0	0	0
Ped 4	0	0	0	0	0	0
Initial Dwell Overlap 1	0	0	0	0	0	0
Initial Dwell Overlap 2	0	0	0	0	0	0
Initial Dwell Overlap 3	0	0	0	0	0	0
Initial Dwell Overlap 4	0	0	0	0	0	0
Initial Dwell Overlap 5	0	0	0	0	0	0
Initial Dwell Overlap 6	0	0	0	0	0	0
Initial Dwell Overlap 7	0	0	0	0	0	0
Initial Dwell Overlap 8	0	0	0	0	0	0
Initial Dwell Overlap 9	0	0	0	0	0	0
Initial Dwell Overlap 10	0	0	0	0	0	0
Initial Dwell Overlap 11	0	0	0	0	0	0
Initial Dwell Overlap 12	0	0	0	0	0	0
Initial Dwell Overlap 13	0	0	0	0	0	0
Initial Dwell Overlap 14	0	0	0	0	0	0
Initial Dwell Overlap 15	0	0	0	0	0	0

Station : 66 - HR Pkwy & Foothills Canyon (Standard File)

TB Coor, Action Table [4.5]

Action	Pattern	Aux 1	Aux 2	Aux 3	Special 1	Special 2	Special 3	Special 4	Special 5	Special 6	Special 7	Special 8
1	1				0	0						
2	2				0	0						
3	3				0	0						
4	4				0	0						
5	5				0	0						
6	6				0	0						
7	7				0	0						
8	8				0	0						
9	9				0	0						
10	10				0	0						
11	11				0	0						
12	12				0	0						
13	13				0	0						
14	14				0	0						
15	15				0	0						
16	16				0	0						
17	17				0	0						
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19	19				0	0						
20	20				0	0						
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33					0	0						
34					0	0						
35					0	0						
36					0	0						
37					0	0						
38					0	0						
39					0	0						
40					0	0						
41					0	0						
42					0	0						
43					0	0						
44					0	0						
45					0	0						
46					0	0						
47					0	0						
48					0	0						
49					0	0						
50					0	0						
51					0	0						
52					0	0						
53					0	0						
54					0	0						
55					0	0						
56					0	0						
57					0	0						
58					0	0						
59					0	0						
60					0	0						
61					0	0						
62					0	0						
63					0	0						
64					0	0						
99	254				0	0						
100	255				0	0						



Appendix D Existing Level of Service Reports

Lanes, Volumes, Timings

70: Foothills Canyon Blvd & Highlands Ranch Pkwy

12/12/2024



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	77	1112	23	60	479	87	45	37	107	109	21	92
Future Volume (vph)	77	1112	23	60	479	87	45	37	107	109	21	92
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	135		0	170		120	170		170	100		0
Storage Lanes	1		0	1		1	1		1	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.997				0.850			0.850		0.878	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3529	0	1770	3539	1583	1770	1863	1583	1770	1635	0
Flt Permitted	0.448			0.104			0.666			0.682		
Satd. Flow (perm)	835	3529	0	194	3539	1583	1241	1863	1583	1270	1635	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		3				92			146		114	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1593			794			600			737	
Travel Time (s)		36.2			18.0			13.6			16.8	
Peak Hour Factor	0.87	0.87	0.87	0.95	0.95	0.95	0.32	0.32	0.32	0.81	0.81	0.81
Adj. Flow (vph)	89	1278	26	63	504	92	141	116	334	135	26	114
Shared Lane Traffic (%)												
Lane Group Flow (vph)	89	1304	0	63	504	92	141	116	334	135	140	0
Enter Blocked Intersection	No											
Lane Alignment	Left	Left	Right									
Median Width(ft)		24			24			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	60		60	60		60	60		60	60		60
Turn Type	pm+pt	NA		pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA	
Protected Phases	5	2		1	6			8				4
Permitted Phases	2			6		6	8		8	4		
Minimum Split (s)	10.0	31.5		10.0	31.5	31.5	34.0	34.0	34.0	33.0	33.0	
Total Split (s)	10.0	45.0		10.0	45.0	45.0	30.0	30.0	30.0	30.0	30.0	
Total Split (%)	11.8%	52.9%		11.8%	52.9%	52.9%	35.3%	35.3%	35.3%	35.3%	35.3%	
Maximum Green (s)	5.0	38.5		5.0	38.5	38.5	25.0	25.0	25.0	25.0	25.0	
Yellow Time (s)	3.0	4.5		3.0	4.5	4.5	3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.0	6.5		5.0	6.5	6.5	5.0	5.0	5.0	5.0	5.0	
Lead/Lag	Lead	Lag		Lead	Lag	Lag						
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes						
Walk Time (s)		5.0			5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Flash Dont Walk (s)		10.5			10.5	10.5	24.0	24.0	24.0	23.0	23.0	
Pedestrian Calls (#/hr)		0			0	0	0	0	0	0	0	
Act Effct Green (s)	45.0	38.5		45.0	38.5	38.5	25.0	25.0	25.0	25.0	25.0	
Actuated g/C Ratio	0.53	0.45		0.53	0.45	0.45	0.29	0.29	0.29	0.29	0.29	
v/c Ratio	0.18	0.81		0.32	0.31	0.12	0.39	0.21	0.59	0.36	0.25	

Lanes, Volumes, Timings

70: Foothills Canyon Blvd & Highlands Ranch Pkwy

12/12/2024

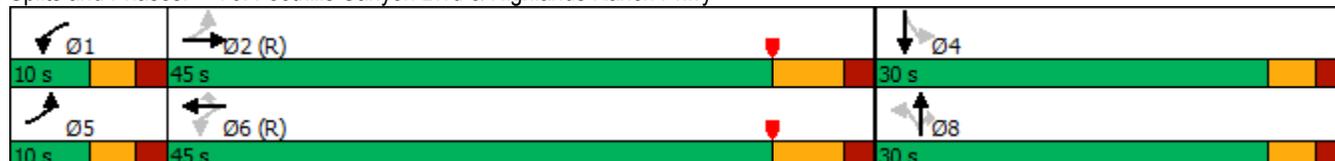


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay	8.7	25.3		12.3	15.5	3.6	27.8	23.9	18.9	27.2	8.1	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	8.7	25.3		12.3	15.5	3.6	27.8	23.9	18.9	27.2	8.1	
LOS	A	C		B	B	A	C	C	B	C	A	
Approach Delay		24.2			13.5			22.0				17.4
Approach LOS		C			B			C				B
Queue Length 50th (ft)	19	305		13	86	0	60	46	82	57	10	
Queue Length 95th (ft)	37	372		29	122	25	35	29	9	94	41	
Internal Link Dist (ft)		1513			714			520				657
Turn Bay Length (ft)	135			170		120	170		170	100		
Base Capacity (vph)	497	1600		195	1602	767	365	547	568	373	561	
Starvation Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.18	0.81		0.32	0.31	0.12	0.39	0.21	0.59	0.36	0.25	

Intersection Summary

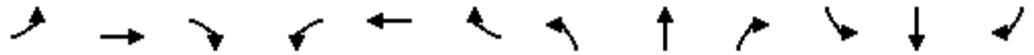
Area Type: Other
 Cycle Length: 85
 Actuated Cycle Length: 85
 Offset: 38.5 (45%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow
 Natural Cycle: 80
 Control Type: Pretimed
 Maximum v/c Ratio: 0.81
 Intersection Signal Delay: 20.7
 Intersection LOS: C
 Intersection Capacity Utilization 62.1%
 ICU Level of Service B
 Analysis Period (min) 15

Splits and Phases: 70: Foothills Canyon Blvd & Highlands Ranch Pkwy



Lanes, Volumes, Timings
67: Springhill Pkwy & Highlands Ranch Pkwy

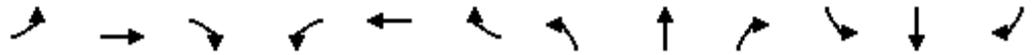
12/12/2024



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	15	813	283	152	344	32	233	25	290	26	34	6
Future Volume (vph)	15	813	283	152	344	32	233	25	290	26	34	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	140		165	240		0	250		0	150		0
Storage Lanes	1		1	2		1	2		1	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	1.00	0.97	0.95	1.00	0.97	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850		0.978	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3539	1583	3433	3539	1583	3433	1863	1583	1770	1822	0
Flt Permitted	0.532			0.104			0.550			0.734		
Satd. Flow (perm)	991	3539	1583	376	3539	1583	1988	1863	1583	1367	1822	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			197			155			412		6	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		705			1593			631			652	
Travel Time (s)		16.0			36.2			14.3			14.8	
Peak Hour Factor	0.87	0.87	0.87	0.93	0.93	0.93	0.70	0.70	0.70	0.45	0.45	0.45
Adj. Flow (vph)	17	934	325	163	370	34	333	36	414	58	76	13
Shared Lane Traffic (%)												
Lane Group Flow (vph)	17	934	325	163	370	34	333	36	414	58	89	0
Enter Blocked Intersection	No											
Lane Alignment	Left	Left	Right									
Median Width(ft)		24			24			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	60		60	60		60	60		60	60		60
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2	6		6	8		8	4		
Minimum Split (s)	10.0	30.5	30.5	10.0	31.5	31.5	10.0	38.5	38.5	10.0	24.5	
Total Split (s)	15.0	40.0	40.0	25.0	50.0	50.0	40.0	50.0	50.0	15.0	25.0	
Total Split (%)	11.5%	30.8%	30.8%	19.2%	38.5%	38.5%	30.8%	38.5%	38.5%	11.5%	19.2%	
Maximum Green (s)	10.0	33.5	33.5	20.0	43.5	43.5	35.0	43.5	43.5	10.0	18.5	
Yellow Time (s)	3.0	4.5	4.5	3.0	4.5	4.5	3.0	4.5	4.5	3.0	4.5	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.0	6.5	6.5	5.0	6.5	6.5	5.0	6.5	6.5	5.0	6.5	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes											
Walk Time (s)		5.0	5.0		5.0	5.0		5.0	5.0			
Flash Dont Walk (s)		19.0	19.0		20.0	20.0		27.0	27.0			
Pedestrian Calls (#/hr)		0	0		0	0		0	0			
Act Effct Green (s)	45.0	33.5	33.5	60.0	43.5	43.5	60.0	43.5	43.5	30.0	18.5	
Actuated g/C Ratio	0.35	0.26	0.26	0.46	0.33	0.33	0.46	0.33	0.33	0.23	0.14	
v/c Ratio	0.04	1.03	0.59	0.25	0.31	0.05	0.25	0.06	0.52	0.17	0.34	

Lanes, Volumes, Timings
 67: Springhill Pkwy & Highlands Ranch Pkwy

12/12/2024

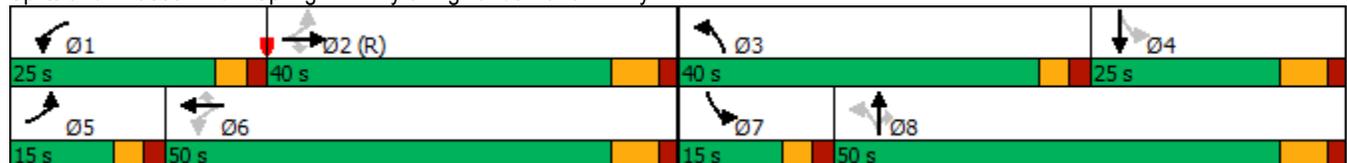


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay	20.3	83.6	20.8	20.8	33.1	0.2	21.5	29.8	5.4	24.4	50.8	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	20.3	83.6	20.8	20.8	33.1	0.2	21.5	29.8	5.4	24.4	50.8	
LOS	C	F	C	C	C	A	C	C	A	C	D	
Approach Delay		66.8			27.6			13.4			40.4	
Approach LOS		E			C			B			D	
Queue Length 50th (ft)	8	~440	91	39	121	0	84	21	1	27	64	
Queue Length 95th (ft)	21	#541	178	60	164	0	87	36	1	26	54	
Internal Link Dist (ft)		625			1513			551			572	
Turn Bay Length (ft)	140		165	240			250			150		
Base Capacity (vph)	402	911	554	643	1184	632	1306	623	803	346	264	
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.04	1.03	0.59	0.25	0.31	0.05	0.25	0.06	0.52	0.17	0.34	

Intersection Summary

Area Type: Other
 Cycle Length: 130
 Actuated Cycle Length: 130
 Offset: 0 (0%), Referenced to phase 2:EBTL, Start of Green
 Natural Cycle: 90
 Control Type: Pretimed
 Maximum v/c Ratio: 1.03
 Intersection Signal Delay: 42.3
 Intersection LOS: D
 Intersection Capacity Utilization 59.6%
 ICU Level of Service B
 Analysis Period (min) 15
 ~ Volume exceeds capacity, queue is theoretically infinite.
 Queue shown is maximum after two cycles.
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

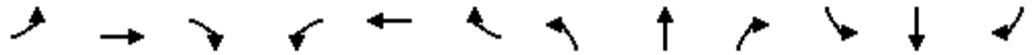
Splits and Phases: 67: Springhill Pkwy & Highlands Ranch Pkwy



Lanes, Volumes, Timings

30: Westridge Village Pkwy & Highlands Ranch Pkwy

12/12/2024

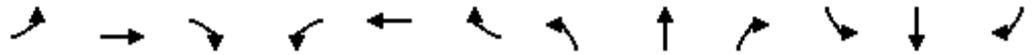


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↶	↶↷		↶	↶↷		↶	↶	↶↷	↶	↷	↷
Traffic Volume (vph)	3	743	108	98	451	36	123	5	197	82	5	7
Future Volume (vph)	3	743	108	98	451	36	123	5	197	82	5	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100		0	100		0	100		100	50		0
Storage Lanes	1		0	1		0	1		1	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.981			0.989				0.850		0.910	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3472	0	1770	3500	0	1770	1863	1583	1770	1695	0
Flt Permitted	0.395			0.147			0.748			0.752		
Satd. Flow (perm)	736	3472	0	274	3500	0	1393	1863	1583	1401	1695	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		25			13				310			9
Link Speed (mph)		30			30			30				30
Link Distance (ft)		386			629			741				129
Travel Time (s)		8.8			14.3			16.8				2.9
Peak Hour Factor	0.79	0.79	0.79	0.84	0.84	0.84	0.55	0.55	0.55	0.81	0.81	0.81
Adj. Flow (vph)	4	941	137	117	537	43	224	9	358	101	6	9
Shared Lane Traffic (%)												
Lane Group Flow (vph)	4	1078	0	117	580	0	224	9	358	101	15	0
Enter Blocked Intersection	No											
Lane Alignment	Left	Left	Right									
Median Width(ft)		12			12			12				12
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	60		60	60		60	60		60	60		60
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA	Perm	Perm		NA
Protected Phases	5	2		1	6			8				4
Permitted Phases	2			6			8		8	4		
Minimum Split (s)	9.0	26.5		9.0	26.5		29.0	29.0	29.0	30.0		30.0
Total Split (s)	15.0	40.0		15.0	40.0		25.0	25.0	25.0	25.0		25.0
Total Split (%)	18.8%	50.0%		18.8%	50.0%		31.3%	31.3%	31.3%	31.3%		31.3%
Maximum Green (s)	11.0	33.5		11.0	33.5		20.0	20.0	20.0	20.0		20.0
Yellow Time (s)	3.0	4.5		3.0	4.5		3.0	3.0	3.0	3.0		3.0
All-Red Time (s)	1.0	2.0		1.0	2.0		2.0	2.0	2.0	2.0		2.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0		0.0
Total Lost Time (s)	4.0	6.5		4.0	6.5		5.0	5.0	5.0	5.0		5.0
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Walk Time (s)		5.0			5.0		5.0	5.0	5.0	5.0		5.0
Flash Dont Walk (s)		8.5			6.5		19.0	19.0	19.0	20.0		20.0
Pedestrian Calls (#/hr)		0			0		0	0	0	0		0
Act Effct Green (s)	47.0	33.5		47.0	33.5		20.0	20.0	20.0	20.0		20.0
Actuated g/C Ratio	0.59	0.42		0.59	0.42		0.25	0.25	0.25	0.25		0.25
v/c Ratio	0.01	0.73		0.32	0.39		0.64	0.02	0.57	0.29		0.03

Lanes, Volumes, Timings

30: Westridge Village Pkwy & Highlands Ranch Pkwy

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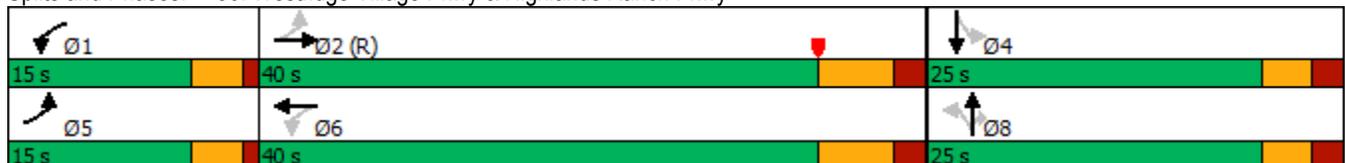


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay	5.3	22.7		8.3	16.8		36.7	22.8	9.1	27.0	16.2	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay	5.3	22.7		8.3	16.8		36.7	22.8	9.1	27.0	16.2	
LOS	A	C		A	B		D	C	A	C	B	
Approach Delay		22.6			15.4			19.8				25.6
Approach LOS		C			B			B				C
Queue Length 50th (ft)	1	225		20	100		100	3	19	41	2	
Queue Length 95th (ft)	3	244		36	129		95	9	1	74	15	
Internal Link Dist (ft)		306			549			661				49
Turn Bay Length (ft)	100			100			100		100	50		
Base Capacity (vph)	574	1468		366	1473		348	465	628	350	430	
Starvation Cap Reductn	0	0		0	0		0	0	0	0	0	
Spillback Cap Reductn	0	0		0	0		0	0	0	0	0	
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	
Reduced v/c Ratio	0.01	0.73		0.32	0.39		0.64	0.02	0.57	0.29	0.03	

Intersection Summary

Area Type:	Other
Cycle Length:	80
Actuated Cycle Length:	80
Offset:	33.5 (42%), Referenced to phase 2:EBTL, Start of Yellow
Natural Cycle:	70
Control Type:	Pretimed
Maximum v/c Ratio:	0.73
Intersection Signal Delay:	20.1
Intersection LOS:	C
Intersection Capacity Utilization	55.8%
ICU Level of Service	B
Analysis Period (min)	15

Splits and Phases: 30: Westridge Village Pkwy & Highlands Ranch Pkwy



Lanes, Volumes, Timings

70: Foothills Canyon Blvd & Highlands Ranch Pkwy

12/12/2024

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	138	1009	12	49	956	124	51	73	186	86	7	102
Future Volume (vph)	138	1009	12	49	956	124	51	73	186	86	7	102
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	135		0	170		120	170		170	100		0
Storage Lanes	1		0	1		1	1		1	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.998				0.850			0.850		0.860	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3532	0	1770	3539	1583	1770	1863	1583	1770	1602	0
Flt Permitted	0.177			0.164			0.669			0.666		
Satd. Flow (perm)	330	3532	0	305	3539	1583	1246	1863	1583	1241	1602	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		2				111			167		128	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1593			794			600			737	
Travel Time (s)		36.2			18.0			13.6			16.8	
Peak Hour Factor	0.95	0.95	0.95	0.92	0.92	0.92	0.52	0.52	0.52	0.80	0.80	0.80
Adj. Flow (vph)	145	1062	13	53	1039	135	98	140	358	108	9	128
Shared Lane Traffic (%)												
Lane Group Flow (vph)	145	1075	0	53	1039	135	98	140	358	108	137	0
Enter Blocked Intersection	No											
Lane Alignment	Left	Left	Right									
Median Width(ft)		24			24			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	60		60	60		60	60		60	60		60
Turn Type	pm+pt	NA		pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases	2			6		6	8		8	4		
Minimum Split (s)	10.0	31.5		10.0	31.5	31.5	34.0	34.0	34.0	33.0	33.0	
Total Split (s)	10.0	45.0		10.0	45.0	45.0	30.0	30.0	30.0	30.0	30.0	
Total Split (%)	11.8%	52.9%		11.8%	52.9%	52.9%	35.3%	35.3%	35.3%	35.3%	35.3%	
Maximum Green (s)	5.0	38.5		5.0	38.5	38.5	25.0	25.0	25.0	25.0	25.0	
Yellow Time (s)	3.0	4.5		3.0	4.5	4.5	3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.0	6.5		5.0	6.5	6.5	5.0	5.0	5.0	5.0	5.0	
Lead/Lag	Lead	Lag		Lead	Lag	Lag						
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes						
Walk Time (s)		5.0			5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Flash Dont Walk (s)		10.5			10.5	10.5	24.0	24.0	24.0	23.0	23.0	
Pedestrian Calls (#/hr)		0			0	0	0	0	0	0	0	
Act Effct Green (s)	45.0	38.5		45.0	38.5	38.5	25.0	25.0	25.0	25.0	25.0	
Actuated g/C Ratio	0.53	0.45		0.53	0.45	0.45	0.29	0.29	0.29	0.29	0.29	
v/c Ratio	0.56	0.67		0.21	0.65	0.17	0.27	0.26	0.61	0.30	0.24	

Lanes, Volumes, Timings

70: Foothills Canyon Blvd & Highlands Ranch Pkwy

12/12/2024



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay	17.2	20.8		9.7	20.4	4.7	25.5	24.5	18.6	26.0	6.4	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	17.2	20.8		9.7	20.4	4.7	25.5	24.5	18.6	26.0	6.4	
LOS	B	C		A	C	A	C	C	B	C	A	
Approach Delay		20.4			18.2			21.1			15.0	
Approach LOS		C			B			C			B	
Queue Length 50th (ft)	32	228		11	217	7	40	57	84	44	3	
Queue Length 95th (ft)	58	297		26	284	37	43	56	51	76	32	
Internal Link Dist (ft)		1513			714			520			657	
Turn Bay Length (ft)	135			170		120	170		170	100		
Base Capacity (vph)	259	1600		247	1602	777	366	547	583	365	561	
Starvation Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.56	0.67		0.21	0.65	0.17	0.27	0.26	0.61	0.30	0.24	

Intersection Summary

Area Type: Other

Cycle Length: 85

Actuated Cycle Length: 85

Offset: 13 (15%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green

Natural Cycle: 80

Control Type: Pretimed

Maximum v/c Ratio: 0.67

Intersection Signal Delay: 19.3

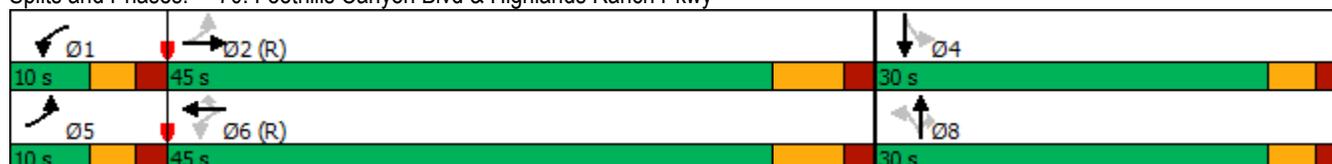
Intersection LOS: B

Intersection Capacity Utilization 59.3%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 70: Foothills Canyon Blvd & Highlands Ranch Pkwy



Lanes, Volumes, Timings
67: Springhill Pkwy & Highlands Ranch Pkwy

12/12/2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	15	599	258	232	667	50	399	53	346	46	41	29
Future Volume (vph)	15	599	258	232	667	50	399	53	346	46	41	29
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	140		165	240		0	250		0	150		0
Storage Lanes	1		1	2		1	2		1	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	1.00	0.97	0.95	1.00	0.97	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850		0.938	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3539	1583	3433	3539	1583	3433	1863	1583	1770	1747	0
Flt Permitted	0.282			0.191			0.498			0.714		
Satd. Flow (perm)	525	3539	1583	690	3539	1583	1800	1863	1583	1330	1747	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			232			155			413		23	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		705			1593			631			652	
Travel Time (s)		16.0			36.2			14.3			14.8	
Peak Hour Factor	0.94	0.94	0.94	0.89	0.89	0.89	0.80	0.80	0.80	0.59	0.59	0.59
Adj. Flow (vph)	16	637	274	261	749	56	499	66	433	78	69	49
Shared Lane Traffic (%)												
Lane Group Flow (vph)	16	637	274	261	749	56	499	66	433	78	118	0
Enter Blocked Intersection	No	No	No	No	No	No						
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	60		60	60		60	60		60	60		60
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2	6		6	8		8	4		
Minimum Split (s)	10.0	30.5	30.5	10.0	31.5	31.5	10.0	38.5	38.5	10.0	24.5	
Total Split (s)	15.0	40.0	40.0	25.0	50.0	50.0	40.0	50.0	50.0	15.0	25.0	
Total Split (%)	11.5%	30.8%	30.8%	19.2%	38.5%	38.5%	30.8%	38.5%	38.5%	11.5%	19.2%	
Maximum Green (s)	10.0	33.5	33.5	20.0	43.5	43.5	35.0	43.5	43.5	10.0	18.5	
Yellow Time (s)	3.0	4.5	4.5	3.0	4.5	4.5	3.0	4.5	4.5	3.0	4.5	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.0	6.5	6.5	5.0	6.5	6.5	5.0	6.5	6.5	5.0	6.5	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes							
Walk Time (s)		5.0	5.0		5.0	5.0		5.0	5.0			
Flash Dont Walk (s)		19.0	19.0		20.0	20.0		27.0	27.0			
Pedestrian Calls (#/hr)		0	0		0	0		0	0			
Act Effct Green (s)	45.0	33.5	33.5	60.0	43.5	43.5	60.0	43.5	43.5	30.0	18.5	
Actuated g/C Ratio	0.35	0.26	0.26	0.46	0.33	0.33	0.46	0.33	0.33	0.23	0.14	
v/c Ratio	0.06	0.70	0.47	0.35	0.63	0.09	0.39	0.11	0.54	0.23	0.44	

Lanes, Volumes, Timings
 67: Springhill Pkwy & Highlands Ranch Pkwy

12/12/2024

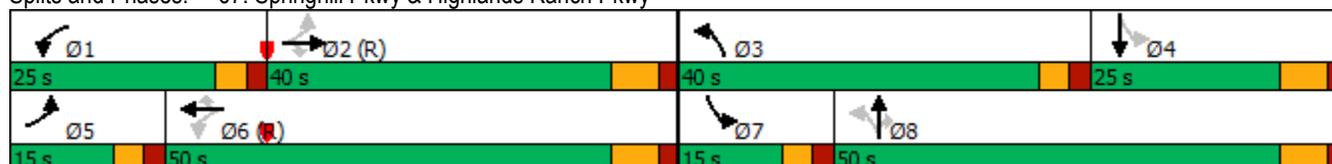


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay	20.5	48.5	10.9	21.9	39.4	0.3	23.1	30.5	6.4	25.3	46.6	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	20.5	48.5	10.9	21.9	39.4	0.3	23.1	30.5	6.4	25.3	46.6	
LOS	C	D	B	C	D	A	C	C	A	C	D	
Approach Delay		36.9			33.1			16.4			38.1	
Approach LOS		D			C			B			D	
Queue Length 50th (ft)	7	256	27	64	279	0	134	38	11	36	74	
Queue Length 95th (ft)	21	325	105	91	343	0	151	65	45	43	80	
Internal Link Dist (ft)		625			1513			551			572	
Turn Bay Length (ft)	140		165	240			250			150		
Base Capacity (vph)	277	911	580	740	1184	632	1270	623	804	340	268	
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.06	0.70	0.47	0.35	0.63	0.09	0.39	0.11	0.54	0.23	0.44	

Intersection Summary

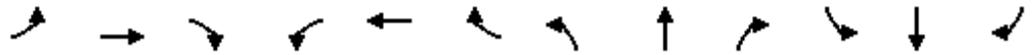
Area Type:	Other
Cycle Length:	130
Actuated Cycle Length:	130
Offset:	13 (10%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle:	90
Control Type:	Pretimed
Maximum v/c Ratio:	0.70
Intersection Signal Delay:	29.3
Intersection LOS:	C
Intersection Capacity Utilization:	57.1%
ICU Level of Service:	B
Analysis Period (min):	15

Splits and Phases: 67: Springhill Pkwy & Highlands Ranch Pkwy



Lanes, Volumes, Timings
 30: Westridge Village Pkwy & Highlands Ranch Pkwy

12/12/2024



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	7	637	122	185	841	78	90	3	175	69	5	5
Future Volume (vph)	7	637	122	185	841	78	90	3	175	69	5	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100		0	100		0	100		100	50		0
Storage Lanes	1		0	1		0	1		1	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.976			0.987				0.850		0.925	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3454	0	1770	3493	0	1770	1863	1583	1770	1723	0
Flt Permitted	0.169			0.234			0.747			0.754		
Satd. Flow (perm)	315	3454	0	436	3493	0	1391	1863	1583	1405	1723	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		34			15				302		8	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		386			629			741			129	
Travel Time (s)		8.8			14.3			16.8			2.9	
Peak Hour Factor	0.87	0.87	0.87	0.90	0.90	0.90	0.58	0.58	0.58	0.66	0.66	0.66
Adj. Flow (vph)	8	732	140	206	934	87	155	5	302	105	8	8
Shared Lane Traffic (%)												
Lane Group Flow (vph)	8	872	0	206	1021	0	155	5	302	105	16	0
Enter Blocked Intersection	No											
Lane Alignment	Left	Left	Right									
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	60		60	60		60	60		60	60		60
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA	Perm	Perm	NA	
Protected Phases	5	2		1	6			8				4
Permitted Phases	2			6			8		8	4		
Minimum Split (s)	9.5	26.5		9.5	26.5		29.0	29.0	29.0	30.0	30.0	
Total Split (s)	15.0	40.0		15.0	40.0		25.0	25.0	25.0	25.0	25.0	
Total Split (%)	18.8%	50.0%		18.8%	50.0%		31.3%	31.3%	31.3%	31.3%	31.3%	
Maximum Green (s)	11.0	33.5		11.0	33.5		20.0	20.0	20.0	20.0	20.0	
Yellow Time (s)	3.0	4.5		3.0	4.5		3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	1.0	2.0		1.0	2.0		2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.0	6.5		4.0	6.5		5.0	5.0	5.0	5.0	5.0	
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Walk Time (s)		5.0			5.0		5.0	5.0	5.0	5.0	5.0	
Flash Dont Walk (s)		8.5			6.5		19.0	19.0	19.0	20.0	20.0	
Pedestrian Calls (#/hr)		0			0		0	0	0	0	0	
Act Effct Green (s)	47.0	33.5		47.0	33.5		20.0	20.0	20.0	20.0	20.0	
Actuated g/C Ratio	0.59	0.42		0.59	0.42		0.25	0.25	0.25	0.25	0.25	
v/c Ratio	0.02	0.59		0.47	0.69		0.45	0.01	0.49	0.30	0.04	

Lanes, Volumes, Timings
 30: Westridge Village Pkwy & Highlands Ranch Pkwy

12/12/2024

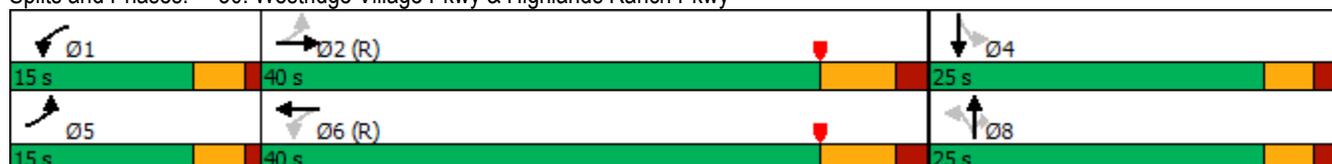


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay	5.6	19.3		9.9	21.8		30.2	22.7	6.2	27.2	17.0	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay	5.6	19.3		9.9	21.8		30.2	22.7	6.2	27.2	17.0	
LOS	A	B		A	C		C	C	A	C	B	
Approach Delay		19.2			19.8			14.4			25.8	
Approach LOS		B			B			B			C	
Queue Length 50th (ft)	1	164		37	210		66	2	0	43	3	
Queue Length 95th (ft)	6	212		64	279		72	6	0	60	12	
Internal Link Dist (ft)		306			549			661			49	
Turn Bay Length (ft)	100			100			100		100	50		
Base Capacity (vph)	385	1466		439	1471		347	465	622	351	436	
Starvation Cap Reductn	0	0		0	0		0	0	0	0	0	
Spillback Cap Reductn	0	0		0	0		0	0	0	0	0	
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	
Reduced v/c Ratio	0.02	0.59		0.47	0.69		0.45	0.01	0.49	0.30	0.04	

Intersection Summary

Area Type:	Other
Cycle Length:	80
Actuated Cycle Length:	80
Offset:	33.5 (42%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow
Natural Cycle:	70
Control Type:	Pretimed
Maximum v/c Ratio:	0.69
Intersection Signal Delay:	19.0
Intersection LOS:	B
Intersection Capacity Utilization	56.3%
ICU Level of Service	B
Analysis Period (min)	15

Splits and Phases: 30: Westridge Village Pkwy & Highlands Ranch Pkwy



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	2	2	7	0	0	0	8	47	15	11	43	4
Future Vol, veh/h	2	2	7	0	0	0	8	47	15	11	43	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Free								
RT Channelized	-	-	None									
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	-	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	2	2	8	0	0	0	9	51	16	12	47	4

Major/Minor	Minor2			Major1			Major2					
Conflicting Flow All	150	158	49				51	0	0	67	0	0
Stage 1	73	73	-				-	-	-	-	-	-
Stage 2	77	85	-				-	-	-	-	-	-
Critical Hdwy	6.42	6.52	6.22				4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	5.42	5.52	-				-	-	-	-	-	-
Critical Hdwy Stg 2	5.42	5.52	-				-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318				2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	842	734	1020				1555	-	-	1535	-	-
Stage 1	950	834	-				-	-	-	-	-	-
Stage 2	946	824	-				-	-	-	-	-	-
Platoon blocked, %												
Mov Cap-1 Maneuver	830	0	1020				1555	-	-	1535	-	-
Mov Cap-2 Maneuver	830	0	-				-	-	-	-	-	-
Stage 1	944	0	-				-	-	-	-	-	-
Stage 2	938	0	-				-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	8.8	0.8	1.4
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	SBL	SBT	SBR
Capacity (veh/h)	1555	-	-	971	1535	-	-
HCM Lane V/C Ratio	0.006	-	-	0.012	0.008	-	-
HCM Control Delay (s)	7.3	0	-	8.8	7.4	0	-
HCM Lane LOS	A	A	-	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0	0	-	-

Intersection						
Int Delay, s/veh	2.1					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↔		↑			↑
Traffic Vol, veh/h	16	12	49	0	0	44
Future Vol, veh/h	16	12	49	0	0	44
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	17	13	53	0	0	48

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	101	53	0	-	-	-
Stage 1	53	-	-	-	-	-
Stage 2	48	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	-	-
Pot Cap-1 Maneuver	898	1014	-	0	0	-
Stage 1	970	-	-	0	0	-
Stage 2	974	-	-	0	0	-
Platoon blocked, %			-			-
Mov Cap-1 Maneuver	898	1014	-	-	-	-
Mov Cap-2 Maneuver	898	-	-	-	-	-
Stage 1	970	-	-	-	-	-
Stage 2	974	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.9	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBTWBLn1	SBT
Capacity (veh/h)	- 944	-
HCM Lane V/C Ratio	- 0.032	-
HCM Control Delay (s)	- 8.9	-
HCM Lane LOS	- A	-
HCM 95th %tile Q(veh)	- 0.1	-

Intersection												
Int Delay, s/veh	5.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕		↕	↕	
Traffic Vol, veh/h	42	29	57	16	10	39	14	33	9	0	12	3
Future Vol, veh/h	42	29	57	16	10	39	14	33	9	0	12	3
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									
Storage Length	-	-	-	-	-	-	-	-	-	0	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	44	44	44	61	61	61	64	64	64	27	27	27
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	95	66	130	26	16	64	22	52	14	0	44	11

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	80	0	0	196	0	0	449	453	131	454	486	48
Stage 1	-	-	-	-	-	-	321	321	-	100	100	-
Stage 2	-	-	-	-	-	-	128	132	-	354	386	-
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	1518	-	-	1377	-	-	520	503	919	516	481	1021
Stage 1	-	-	-	-	-	-	691	652	-	906	812	-
Stage 2	-	-	-	-	-	-	876	787	-	663	610	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1518	-	-	1377	-	-	443	458	919	433	438	1021
Mov Cap-2 Maneuver	-	-	-	-	-	-	443	458	-	433	438	-
Stage 1	-	-	-	-	-	-	642	606	-	842	796	-
Stage 2	-	-	-	-	-	-	802	771	-	555	567	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	2.5			1.9			13.8			13.2		
HCM LOS							B			B		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	494	1518	-	-	1377	-	-	-	494
HCM Lane V/C Ratio	0.177	0.063	-	-	0.019	-	-	-	0.112
HCM Control Delay (s)	13.8	7.5	0	-	7.7	0	-	0	13.2
HCM Lane LOS	B	A	A	-	A	A	-	A	B
HCM 95th %tile Q(veh)	0.6	0.2	-	-	0.1	-	-	-	0.4

Intersection												
Int Delay, s/veh	5.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔		↔	↔	
Traffic Vol, veh/h	0	34	14	4	27	0	20	0	17	56	12	26
Future Vol, veh/h	0	34	14	4	27	0	20	0	17	56	12	26
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									
Storage Length	-	-	-	-	-	-	-	-	-	0	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	37	15	4	29	0	22	0	18	61	13	28

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	-	0	0	52	0	0	103	82	45	91	89	29
Stage 1	-	-	-	-	-	-	45	45	-	37	37	-
Stage 2	-	-	-	-	-	-	58	37	-	54	52	-
Critical Hdwy	-	-	-	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	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	0	-	-	1554	-	0	877	808	1025	893	801	1046
Stage 1	0	-	-	-	-	0	969	857	-	978	864	-
Stage 2	0	-	-	-	-	0	954	864	-	958	852	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	-	1554	-	-	841	806	1025	875	799	1046
Mov Cap-2 Maneuver	-	-	-	-	-	-	841	806	-	875	799	-
Stage 1	-	-	-	-	-	-	969	857	-	978	861	-
Stage 2	-	-	-	-	-	-	911	861	-	941	852	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.9	9.1	9.2
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	SBLn1	SBLn2
Capacity (veh/h)	917	-	-	1554	-	875	953
HCM Lane V/C Ratio	0.044	-	-	0.003	-	0.07	0.043
HCM Control Delay (s)	9.1	-	-	7.3	0	9.4	8.9
HCM Lane LOS	A	-	-	A	A	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0	-	0.2	0.1

Intersection												
Int Delay, s/veh	1.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕						↕			↕	
Traffic Vol, veh/h	3	1	2	0	0	0	8	44	13	5	56	1
Future Vol, veh/h	3	1	2	0	0	0	8	44	13	5	56	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Free								
RT Channelized	-	-	None									
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	-	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	3	1	2	0	0	0	9	48	14	5	61	1

Major/Minor	Minor2			Major1			Major2		
Conflicting Flow All	145	152	62	62	0	0	62	0	0
Stage 1	72	72	-	-	-	-	-	-	-
Stage 2	73	80	-	-	-	-	-	-	-
Critical Hdwy	6.42	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	5.42	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.42	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	847	740	1003	1541	-	-	1541	-	-
Stage 1	951	835	-	-	-	-	-	-	-
Stage 2	950	828	-	-	-	-	-	-	-
Platoon blocked, %									
Mov Cap-1 Maneuver	839	0	1003	1541	-	-	1541	-	-
Mov Cap-2 Maneuver	839	0	-	-	-	-	-	-	-
Stage 1	945	0	-	-	-	-	-	-	-
Stage 2	947	0	-	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9	0.9	0.6
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	SBL	SBT	SBR
Capacity (veh/h)	1541	-	-	898	1541	-	-
HCM Lane V/C Ratio	0.006	-	-	0.007	0.004	-	-
HCM Control Delay (s)	7.3	0	-	9	7.3	0	-
HCM Lane LOS	A	A	-	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0	0	-	-

Intersection						
Int Delay, s/veh	1.5					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↔		↑			↑
Traffic Vol, veh/h	14	5	49	0	0	49
Future Vol, veh/h	14	5	49	0	0	49
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	15	5	53	0	0	53

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	106	53	0	-	-	-
Stage 1	53	-	-	-	-	-
Stage 2	53	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	-	-
Pot Cap-1 Maneuver	892	1014	-	0	0	-
Stage 1	970	-	-	0	0	-
Stage 2	970	-	-	0	0	-
Platoon blocked, %			-			-
Mov Cap-1 Maneuver	892	1014	-	-	-	-
Mov Cap-2 Maneuver	892	-	-	-	-	-
Stage 1	970	-	-	-	-	-
Stage 2	970	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBTWBLn1	SBT
Capacity (veh/h)	- 921	-
HCM Lane V/C Ratio	- 0.022	-
HCM Control Delay (s)	- 9	-
HCM Lane LOS	- A	-
HCM 95th %tile Q(veh)	- 0.1	-

Intersection												
Int Delay, s/veh	7.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕		↕	↕	
Traffic Vol, veh/h	29	14	34	14	11	13	50	34	20	0	42	0
Future Vol, veh/h	29	14	34	14	11	13	50	34	20	0	42	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None									
Storage Length	-	-	-	-	-	-	-	-	-	0	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	57	57	57	45	45	45	73	73	73	48	48	48
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	51	25	60	31	24	29	68	47	27	0	88	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	53	0	0	85	0	0	302	272	55	295	288	39
Stage 1	-	-	-	-	-	-	157	157	-	101	101	-
Stage 2	-	-	-	-	-	-	145	115	-	194	187	-
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	1553	-	-	1512	-	-	650	635	1012	657	622	1033
Stage 1	-	-	-	-	-	-	845	768	-	905	811	-
Stage 2	-	-	-	-	-	-	858	800	-	808	745	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1553	-	-	1512	-	-	552	600	1012	576	588	1033
Mov Cap-2 Maneuver	-	-	-	-	-	-	552	600	-	576	588	-
Stage 1	-	-	-	-	-	-	815	741	-	873	794	-
Stage 2	-	-	-	-	-	-	747	783	-	711	719	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	2.8			2.7			12.5			12.2		
HCM LOS							B			B		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	623	1553	-	-	1512	-	-	-	588
HCM Lane V/C Ratio	0.229	0.033	-	-	0.021	-	-	-	0.149
HCM Control Delay (s)	12.5	7.4	0	-	7.4	0	-	0	12.2
HCM Lane LOS	B	A	A	-	A	A	-	A	B
HCM 95th %tile Q(veh)	0.9	0.1	-	-	0.1	-	-	-	0.5

Intersection												
Int Delay, s/veh	4.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↻			↻			↻		↻	↻	
Traffic Vol, veh/h	0	35	24	15	44	0	10	0	15	21	12	12
Future Vol, veh/h	0	35	24	15	44	0	10	0	15	21	12	12
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									
Storage Length	-	-	-	-	-	-	-	-	-	0	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	38	26	16	48	0	11	0	16	23	13	13

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	-	0	0	64	0	0	144	131	51	139	144	48
Stage 1	-	-	-	-	-	-	51	51	-	80	80	-
Stage 2	-	-	-	-	-	-	93	80	-	59	64	-
Critical Hdwy	-	-	-	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	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	0	-	-	1538	-	0	825	760	1017	831	747	1021
Stage 1	0	-	-	-	-	0	962	852	-	929	828	-
Stage 2	0	-	-	-	-	0	914	828	-	953	842	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	-	1538	-	-	797	752	1017	811	739	1021
Mov Cap-2 Maneuver	-	-	-	-	-	-	797	752	-	811	739	-
Stage 1	-	-	-	-	-	-	962	852	-	929	819	-
Stage 2	-	-	-	-	-	-	878	819	-	938	842	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	1.9	9.1	9.4
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	SBLn1	SBLn2
Capacity (veh/h)	916	-	-	1538	-	811	857
HCM Lane V/C Ratio	0.03	-	-	0.011	-	0.028	0.03
HCM Control Delay (s)	9.1	-	-	7.4	0	9.6	9.3
HCM Lane LOS	A	-	-	A	A	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0	-	0.1	0.1



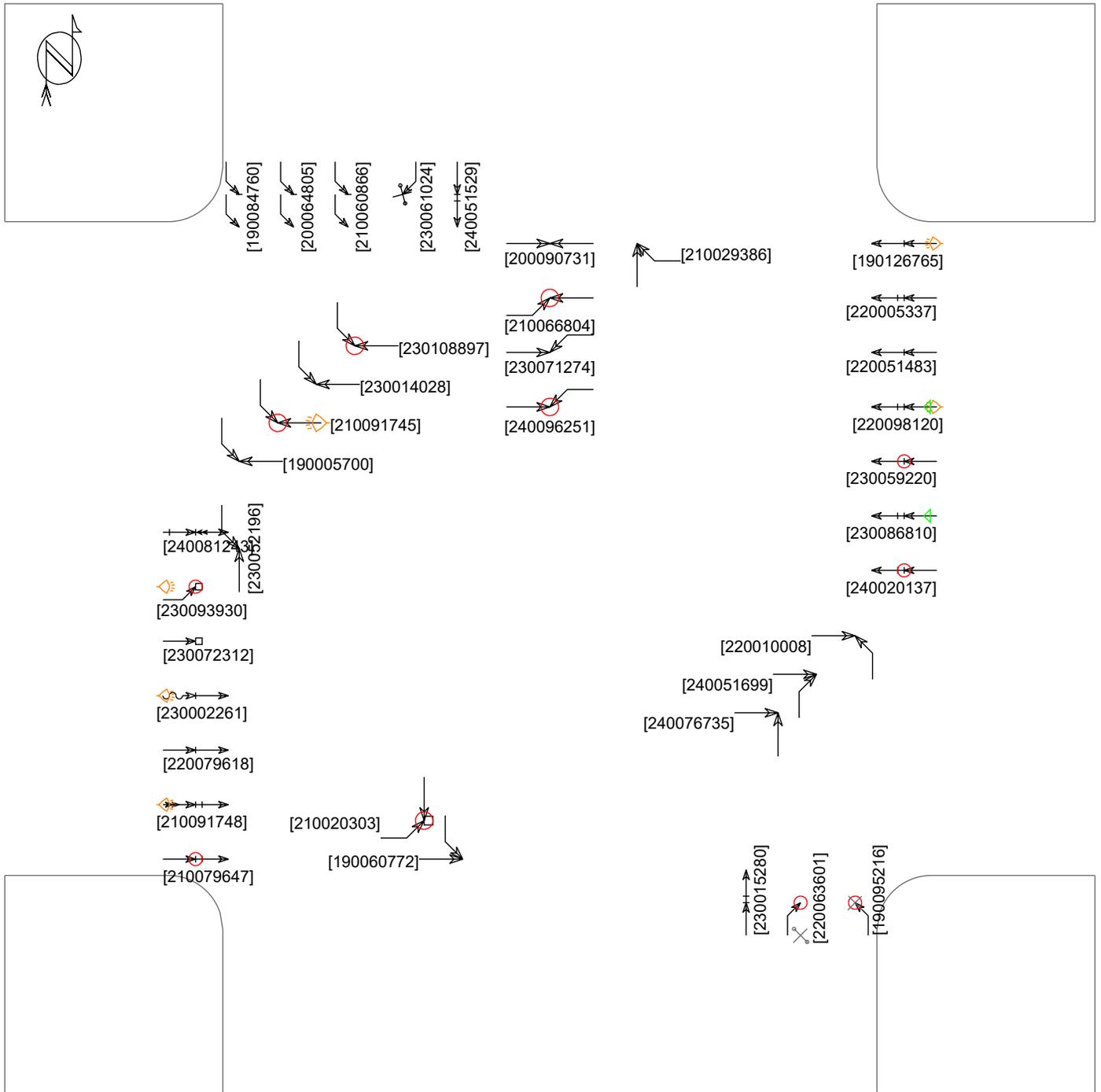
Appendix E Crash Diagrams and Listings

HIGHLANDS RANCH PKWY & FOOTHILLS CANYON BLVD

2019 - 2024

37 Crashes

Clear



- | | | | |
|--------------|----------------|--------------|-------------------------------|
| ← Straight | ▭ Parked | ⊗ Pedestrian | ◁ 3rd Vehicle |
| ←+ Stopped | ←~ Weaving | ⊗ Bicycle | ←-M- Motorcycle |
| ← Unknown | ←~ Changing Ln | ○ Injury | ←○ Overturn |
| ↔ Backing | ↗ Right turn | ● Fatality | |
| ↔ Overtaking | ↖ Left turn | 🕒 Nighttime | Fixed objects: |
| ↔ Sideswipe | ↻ U-turn | 🚫 DUI | □ General ⚠ Animal |
| | | | ☒ Public Obj ☒ Private Obj |

HIGHLANDS RANCH PKWY & FOOTHILLS CANYON BLVD

2019 - 2024

37 Crashes

Clear

Casetrackingid	Accidenttime	Accidentdate	Primarystreet	Crossstreet	Onroadaddress	Numberinjured	Numberkilled	Harmfuleventl
190005700	11:10 am	1/14/2019	FOOTHILLS CANYON BLVD	HIGHLANDS RANCH PKWY		0	0	Front to Side
190060772	7:18 am	5/24/2019	HIGHLANDS RANCH PKWY	FOOTHILLS CANYON BLVD		0	0	Front to Side
190084760	11:23 am	7/24/2019	HIGHLANDS RANCH PKWY	FOOTHILLS CANYON BLVD		0	0	Front to Rear
190095216	3:47 pm	8/21/2019	HIGHLANDS RANCH PKWY	FOOTHILLS CANYON BLVD		1	0	Pedestrian
190126765	5:23 pm	11/11/2019	HIGHLANDS RANCH PKWY	FOOTHILLS CANYON BLVD		0	0	Front to Rear
200064805	3:55 pm	7/8/2020	HIGHLANDS RANCH PKWY	FOOTHILLS CANYON BLVD		0	0	Front to Rear
200090731	2:56 pm	10/4/2020	HIGHLANDS RANCH PKWY	FOOTHILLS CANYON BLVD		0	0	Front to Side
210020303	4:29 pm	3/11/2021	HIGHLANDS RANCH PKWY	FOOTHILLS CANYON BLVD		1	0	Curb
210029386	2:25 pm	4/13/2021	HIGHLANDS RANCH PKWY	FOOTHILLS CANYON BLVD		0	0	Front to Side
210060866	4:03 pm	7/27/2021	FOOTHILLS CANYON BLVD	HIGHLANDS RANCH PKWY		0	0	Front to Rear
210066804	5:20 pm	8/17/2021	HIGHLANDS RANCH PKWY	FOOTHILLS CANYON BLVD		0	0	Front to Front
210079647	3:06 pm	10/1/2021	HIGHLANDS RANCH PKWY	FOOTHILLS CANYON BLVD		0	0	Front to Rear
210091745	5:39 pm	11/15/2021	HIGHLANDS RANCH PKWY	FOOTHILLS CANYON BLVD		0	0	Front to Side
210091748	5:37 pm	11/15/2021	HIGHLANDS RANCH PKWY	FOOTHILLS CANYON BLVD		0	0	Front to Rear
220005337	1:39 pm	1/22/2022	HIGHLANDS RANCH PKWY	FOOTHILLS CANYON BLVD		0	0	Front to Rear
220010008	3:12 pm	2/8/2022	FOOTHILLS CANYON BLVD	HIGHLANDS RANCH PKWY		0	0	Front to Side
220051483	5:30 pm	6/29/2022	HIGHLANDS RANCH PKWY	FOOTHILLS CANYON BLVD		0	0	Front to Rear
220063601	7:47 am	8/11/2022	HIGHLANDS RANCH PKWY	FOOTHILLS CANYON BLVD		1	0	Bicycle / Motorized Bicycle
220079618	3:04 pm	10/5/2022	HIGHLANDS RANCH PKWY	FOOTHILLS CANYON BLVD		0	0	Front to Rear
220098120	6:08 pm	12/14/2022	HIGHLANDS RANCH PKWY	FOOTHILLS CANYON BLVD		0	0	Front to Rear
230002261	5:43 pm	1/10/2023	HIGHLANDS RANCH PKWY	FOOTHILLS CANYON BLVD		0	0	Front to Rear
230014028	11:47 am	2/20/2023	HIGHLANDS RANCH PKWY	FOOTHILLS CANYON BLVD		0	0	Front to Side
230015280	2:07 pm	2/24/2023	FOOTHILLS CANYON BLVD	HIGHLANDS RANCH PKWY		0	0	Front to Rear
230052196	11:35 am	6/19/2023	FOOTHILLS CANYON BLVD	HIGHLANDS RANCH PKWY		0	0	Front to Front
230059220	5:28 pm	7/10/2023	HIGHLANDS RANCH PKWY	FOOTHILLS CANYON BLVD		1	0	Front to Rear
230061024	10:31 am	7/16/2023	FOOTHILLS CANYON BLVD	HIGHLANDS RANCH PKWY		0	0	Bicycle / Motorized Bicycle
230071274	7:34 am	8/17/2023	HIGHLANDS RANCH PKWY	FOOTHILLS CANYON BLVD		0	0	Front to Side

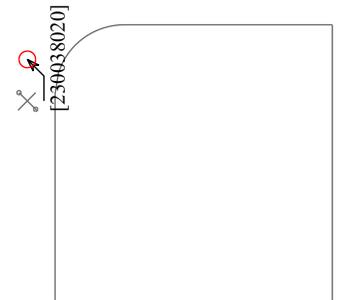
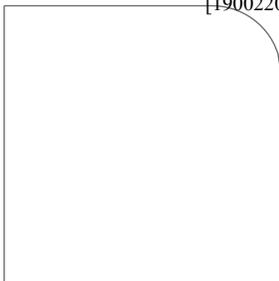
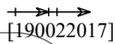
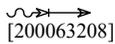
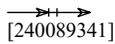
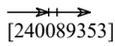
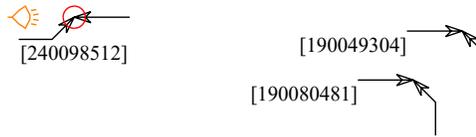
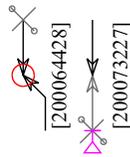
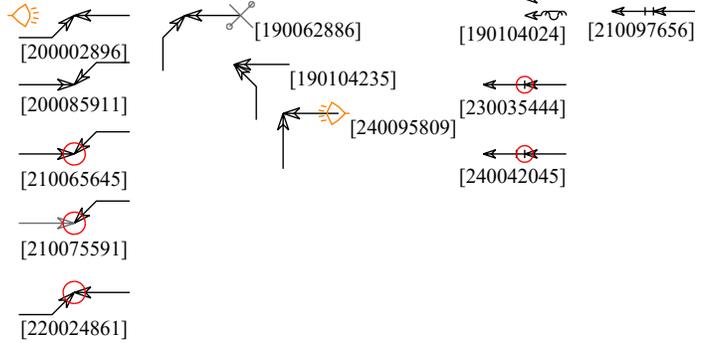
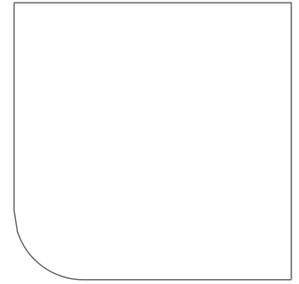
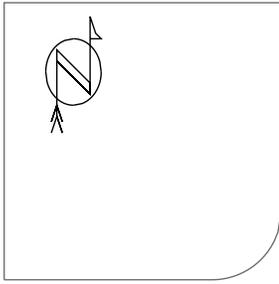
Casetrackingid	Accidenttime	Accidentdate	Primarystreet	Crossstreet	Onroadaddress	Numberinjured	Numberkilled	Harmfulevent1
230072312	4:42 pm	8/20/2023	HIGHLANDS RANCH PKWY	FOOTHILLS CANYON BLVD	-2000	0	0	Curb
230086810	3:58 pm	10/6/2023	HIGHLANDS RANCH PKWY	FOOTHILLS CANYON BLVD		0	0	Front to Rear
230093930	8:01 pm	10/31/2023	FOOTHILLS CANYON BLVD	HIGHLANDS RANCH PKWY		2	0	Curb
230108897	3:20 pm	12/21/2023	HIGHLANDS RANCH PKWY	FOOTHILLS CANYON BLVD		1	0	Front to Side
240020137	6:13 pm	2/28/2024	HIGHLANDS RANCH PKWY	FOOTHILLS CANYON BLVD		0	0	Front to Rear
240051529	11:06 am	6/3/2024	FOOTHILLS CANYON BLVD	HIGHLANDS RANCH PKWY		0	0	Front to Rear
240051699	4:40 pm	6/3/2024	HIGHLANDS RANCH PKWY	FOOTHILLS CANYON BLVD		0	0	Front to Side
240076735	6:19 pm	8/15/2024	FOOTHILLS CANYON BLVD	HIGHLANDS RANCH PKWY		0	0	Front to Side
240081243	1:46 pm	8/29/2024	HIGHLANDS RANCH PKWY	FOOTHILLS CANYON BLVD		0	0	Front to Rear
240096251	10:54 am	10/17/2024	HIGHLANDS RANCH PKWY	FOOTHILLS CANYON BLVD		0	0	Front to Side

HIGHLANDS RANCH PKWY & WESTRIDGE KNOLLS AVE

2019 - 2024

22 Crashes

Clear



- ← Straight
- ←+ Stopped
- ← Unknown
- ↔ Backing
- ↔↔ Overtaking
- ↔ Sideswipe

- ▭ Parked
- ↔ Weaving
- ↔ Changing Ln
- ↔ Right turn
- ↔ Left turn
- ↔ U-turn

- × Pedestrian
- ⊗ Bicycle
- Injury
- Fatality
- 🔦 Nighttime
- ⚠️ DUI

- ◀ 3rd Vehicle
- ←-M- Motorcycle
- ←-O- Overturn

- Fixed objects:
- General
 - ⊠ Animal
 - ⊞ Public Obj
 - ⊞ Private Obj

HIGHLANDS RANCH PKWY & WESTRIDGE KNOLLS AVE

2019 - 2024

22 Crashes

Clear

Casetrackingid	Accidenttime	Accidentdate	Primarystreet	Crossstreet	Onroadaddress	Numberinjured	Numberkilled	Harmfuleventl
190022017	11:38 am	2/20/2019	HIGHLANDS RANCH PKWY	WESTRIDGE KNOLLS AVE		0	0	Front to Rear
190049304	12:23 pm	4/25/2019	HIGHLANDS RANCH PKWY	WESTRIDGE KNOLLS AVE		0	0	Front to Side
190062886	2:22 pm	5/29/2019	WESTRIDGE KNOLLS AVE	HIGHLANDS RANCH PKWY		0	0	Front to Side
190080481	7:18 am	7/12/2019	HIGHLANDS RANCH PKWY	WESTRIDGE KNOLLS AVE		0	0	Front to Side
190104024	6:35 pm	9/13/2019	HIGHLANDS RANCH PKWY	DESERT WILLOW RD		0	0	Side to Side - Same Direction
190104235	2:08 pm	9/14/2019	DESERT WILLOW RD	HIGHLANDS RANCH PKWY		0	0	Front to Side
200002896	8:26 pm	1/8/2020	HIGHLANDS RANCH PKWY	DESERT WILLOW RD		0	0	Front to Side
200063208	11:14 am	7/4/2020	HIGHLANDS RANCH PKWY	WESTRIDGE KNOLLS AVE		0	0	Front to Rear
200064428	7:15 pm	7/7/2020	HIGHLANDS RANCH PKWY	WESTRIDGE KNOLLS AVE		1	0	Bicycle / Motorized Bicycle
200073227	1:01 pm	8/6/2020	HIGHLANDS RANCH PKWY	DESERT WILLOW RD		0	0	Bicycle / Motorized Bicycle
200085911	9:14 am	9/18/2020	HIGHLANDS RANCH PKWY	WESTRIDGE KNOLLS AVE		0	0	Front to Side
210065645	3:05 pm	8/13/2021	HIGHLANDS RANCH PKWY	WESTRIDGE KNOLLS AVE		0	0	Front to Side
210075591	3:24 pm	9/17/2021	HIGHLANDS RANCH PKWY	WESTRIDGE KNOLLS AVE		3	0	Front to Side
210097656	1:23 pm	12/7/2021	HIGHLANDS RANCH PKWY	DESERT WILLOW RD		0	0	Front to Rear
220024861	3:44 pm	3/31/2022	HIGHLANDS RANCH PKWY	WESTRIDGE KNOLLS AVE		0	0	Front to Front
230035444	5:09 pm	4/26/2023	HIGHLANDS RANCH PKWY	WESTRIDGE KNOLLS AVE		0	0	Front to Rear
230038020	6:35 pm	5/4/2023	HIGHLANDS RANCH PKWY	WESTRIDGE KNOLLS AVE		1	0	Bicycle / Motorized Bicycle
240042045	5:02 pm	5/6/2024	HIGHLANDS RANCH PKWY	DESERT WILLOW RD		2	0	Front to Rear
240089341	3:08 pm	9/27/2024	HIGHLANDS RANCH PKWY	WESTRIDGE KNOLLS AVE		0	0	Front to Rear
240089353	3:41 pm	9/24/2024	HIGHLANDS RANCH PKWY	WESTRIDGE KNOLLS AVE		0	0	Front to Rear
240095809	10:11 pm	10/15/2024	HIGHLANDS RANCH PKWY	WESTRIDGE KNOLLS AVE		0	0	Front to Side
240098512	8:54 pm	10/24/2024	HIGHLANDS RANCH PKWY	DESERT WILLOW RD		1	0	Front to Front

HIGHLANDS RANCH PKWY & WESTRIDGE VILLAGE PKWY

2019 - 2024

18 Crashes

Clear

Casetrackingid	Accidenttime	Accidentdate	Primarystreet	Crossstreet	Onroadaddress	Numberinjured	Numberkilled	Harmfuleventl
190018334	7:52 am	2/12/2019	DEER CREEK ST	HIGHLANDS RANCH PKWY		0	0	Front to Rear
190116520	5:48 pm	10/15/2019	HIGHLANDS RANCH PKWY	WESTRIDGE VILLAGE PKWY		0	0	Bicycle / Motorized Bicycle
190122567	8:32 am	10/31/2019	WESTRIDGE VILLAGE PKWY	HIGHLANDS RANCH PKWY		0	0	Front to Rear
200074616	5:10 pm	8/11/2020	HIGHLANDS RANCH PKWY	WESTRIDGE VILLAGE PKWY		0	0	Front to Rear
200110918	6:08 pm	12/15/2020	HIGHLANDS RANCH PKWY	DEER CREEK ST		1	0	Pedestrian
210013207	8:38 am	2/15/2021	HIGHLANDS RANCH PKWY	WESTRIDGE VILLAGE PKWY		0	0	Front to Side
210069654	2:42 pm	8/27/2021	HIGHLANDS RANCH PKWY	WESTRIDGE VILLAGE PKWY		0	0	Front to Rear
220003461	10:16 am	1/15/2022	WESTRIDGE VILLAGE PKWY	HIGHLANDS RANCH PKWY		0	0	Front to Rear
220012167	2:56 pm	2/15/2022	HIGHLANDS RANCH PKWY	WESTRIDGE VILLAGE PKWY		0	0	Front to Side
220030817	7:29 am	4/21/2022	HIGHLANDS RANCH PKWY	WESTRIDGE VILLAGE PKWY		0	0	Side to Side - Opposite Direction
220050172	12:12 pm	6/25/2022	HIGHLANDS RANCH PKWY	WESTRIDGE VILLAGE PKWY		1	0	Front to Rear
230014534	7:50 am	2/22/2023	HIGHLANDS RANCH PKWY	DEER CREEK ST		0	0	Side to Side - Same Direction
230097045	11:03 pm	11/10/2023	HIGHLANDS RANCH PKWY	WESTRIDGE VILLAGE PKWY		3	0	Curb
230111137	8:22 am	12/30/2023	HIGHLANDS RANCH PKWY	DEER CREEK ST		0	0	Side to Side - Opposite Direction
240013037	8:26 am	2/9/2024	HIGHLANDS RANCH PKWY	WESTRIDGE VILLAGE PKWY		0	0	Front to Front
240057926	11:53 am	6/21/2024	HIGHLANDS RANCH PKWY	WESTRIDGE VILLAGE PKWY		2	0	Front to Front
240080192	3:02 pm	8/26/2024	WESTRIDGE VILLAGE PKWY	HIGHLANDS RANCH PKWY		2	0	Front to Side
240099612	3:49 pm	10/28/2024	HIGHLANDS RANCH PKWY	WESTRIDGE VILLAGE PKWY		0	0	Front to Rear

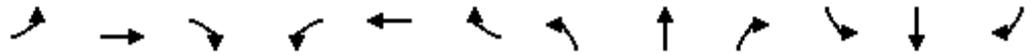


Appendix F Projected Level of Service Reports

Lanes, Volumes, Timings

30: Westridge Village Pkwy & Highlands Ranch Pkwy

12/19/2024



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	3	773	71	115	481	36	86	5	214	82	5	7
Future Volume (vph)	3	773	71	115	481	36	86	5	214	82	5	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100		0	100		0	100		100	50		0
Storage Lanes	1		0	1		0	1		1	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.987			0.990				0.850		0.910	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3493	0	1770	3504	0	1770	1863	1583	1770	1695	0
Flt Permitted	0.372			0.151			0.748			0.752		
Satd. Flow (perm)	693	3493	0	281	3504	0	1393	1863	1583	1401	1695	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		15			12				305		9	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		386			629			741			129	
Travel Time (s)		8.8			14.3			16.8			2.9	
Peak Hour Factor	0.79	0.79	0.79	0.84	0.84	0.84	0.55	0.55	0.55	0.81	0.81	0.81
Adj. Flow (vph)	4	978	90	137	573	43	156	9	389	101	6	9
Shared Lane Traffic (%)												
Lane Group Flow (vph)	4	1068	0	137	616	0	156	9	389	101	15	0
Enter Blocked Intersection	No											
Lane Alignment	Left	Left	Right									
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	60		60	60		60	60		60	60		60
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA	Perm	Perm	NA	
Protected Phases	5	2		1	6			8				4
Permitted Phases	2			6			8		8	4		
Minimum Split (s)	9.0	26.5		9.0	26.5		29.0	29.0	29.0	30.0	30.0	
Total Split (s)	15.0	40.0		15.0	40.0		25.0	25.0	25.0	25.0	25.0	
Total Split (%)	18.8%	50.0%		18.8%	50.0%		31.3%	31.3%	31.3%	31.3%	31.3%	
Maximum Green (s)	11.0	33.5		11.0	33.5		20.0	20.0	20.0	20.0	20.0	
Yellow Time (s)	3.0	4.5		3.0	4.5		3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	1.0	2.0		1.0	2.0		2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.0	6.5		4.0	6.5		5.0	5.0	5.0	5.0	5.0	
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Walk Time (s)		5.0			5.0		5.0	5.0	5.0	5.0	5.0	
Flash Dont Walk (s)		8.5			6.5		19.0	19.0	19.0	20.0	20.0	
Pedestrian Calls (#/hr)		0			0		0	0	0	0	0	
Act Effct Green (s)	47.0	33.5		47.0	33.5		20.0	20.0	20.0	20.0	20.0	
Actuated g/C Ratio	0.59	0.42		0.59	0.42		0.25	0.25	0.25	0.25	0.25	
v/c Ratio	0.01	0.73		0.37	0.42		0.45	0.02	0.62	0.29	0.03	

Lanes, Volumes, Timings
 30: Westridge Village Pkwy & Highlands Ranch Pkwy

12/19/2024

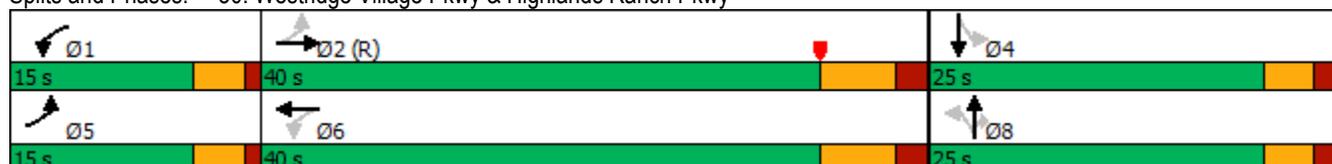


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay	5.3	22.7		9.0	17.1		30.2	22.8	11.5	27.0	16.2	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay	5.3	22.7		9.0	17.1		30.2	22.8	11.5	27.0	16.2	
LOS	A	C		A	B		C	C	B	C	B	
Approach Delay		22.6			15.6			17.0				25.6
Approach LOS		C			B			B				C
Queue Length 50th (ft)	1	224		24	108		66	3	33	41	2	
Queue Length 95th (ft)	3	243		41	138		69	9	11	74	15	
Internal Link Dist (ft)		306			549			661				49
Turn Bay Length (ft)	100			100			100		100	50		
Base Capacity (vph)	555	1471		369	1474		348	465	624	350	430	
Starvation Cap Reductn	0	0		0	0		0	0	0	0	0	
Spillback Cap Reductn	0	0		0	0		0	0	0	0	0	
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	
Reduced v/c Ratio	0.01	0.73		0.37	0.42		0.45	0.02	0.62	0.29	0.03	

Intersection Summary

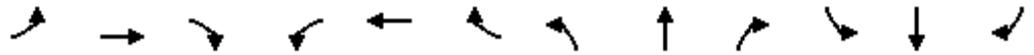
Area Type:	Other
Cycle Length:	80
Actuated Cycle Length:	80
Offset:	33.5 (42%), Referenced to phase 2:EBTL, Start of Yellow
Natural Cycle:	70
Control Type:	Pretimed
Maximum v/c Ratio:	0.73
Intersection Signal Delay:	19.4
Intersection LOS:	B
Intersection Capacity Utilization	55.2%
ICU Level of Service	B
Analysis Period (min)	15

Splits and Phases: 30: Westridge Village Pkwy & Highlands Ranch Pkwy



Lanes, Volumes, Timings
67: Springhill Pkwy & Highlands Ranch Pkwy

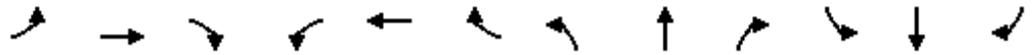
12/19/2024



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	95	813	250	152	344	32	200	102	290	26	111	86
Future Volume (vph)	95	813	250	152	344	32	200	102	290	26	111	86
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	140		165	240		0	250		0	150		0
Storage Lanes	1		1	2		1	2		1	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	1.00	0.97	0.95	1.00	0.97	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850		0.935	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3539	1583	3433	3539	1583	3433	1863	1583	1770	1742	0
Flt Permitted	0.532			0.104			0.170			0.664		
Satd. Flow (perm)	991	3539	1583	376	3539	1583	614	1863	1583	1237	1742	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			197			155			409		25	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		705			1593			631			652	
Travel Time (s)		16.0			36.2			14.3			14.8	
Peak Hour Factor	0.87	0.87	0.87	0.93	0.93	0.93	0.70	0.70	0.70	0.45	0.45	0.45
Adj. Flow (vph)	109	934	287	163	370	34	286	146	414	58	247	191
Shared Lane Traffic (%)												
Lane Group Flow (vph)	109	934	287	163	370	34	286	146	414	58	438	0
Enter Blocked Intersection	No											
Lane Alignment	Left	Left	Right									
Median Width(ft)		24			24			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	60		60	60		60	60		60	60		60
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2	6		6	8		8	4		
Minimum Split (s)	10.0	30.5	30.5	10.0	31.5	31.5	10.0	38.5	38.5	10.0	24.5	
Total Split (s)	15.0	40.0	40.0	25.0	50.0	50.0	40.0	50.0	50.0	15.0	25.0	
Total Split (%)	11.5%	30.8%	30.8%	19.2%	38.5%	38.5%	30.8%	38.5%	38.5%	11.5%	19.2%	
Maximum Green (s)	10.0	33.5	33.5	20.0	43.5	43.5	35.0	43.5	43.5	10.0	18.5	
Yellow Time (s)	3.0	4.5	4.5	3.0	4.5	4.5	3.0	4.5	4.5	3.0	4.5	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.0	6.5	6.5	5.0	6.5	6.5	5.0	6.5	6.5	5.0	6.5	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes											
Walk Time (s)		5.0	5.0		5.0	5.0		5.0	5.0			
Flash Dont Walk (s)		19.0	19.0		20.0	20.0		27.0	27.0			
Pedestrian Calls (#/hr)		0	0		0	0		0	0			
Act Effct Green (s)	45.0	33.5	33.5	60.0	43.5	43.5	60.0	43.5	43.5	30.0	18.5	
Actuated g/C Ratio	0.35	0.26	0.26	0.46	0.33	0.33	0.46	0.33	0.33	0.23	0.14	
v/c Ratio	0.27	1.03	0.52	0.25	0.31	0.05	0.27	0.23	0.52	0.18	1.63	

Lanes, Volumes, Timings
 67: Springhill Pkwy & Highlands Ranch Pkwy

12/19/2024

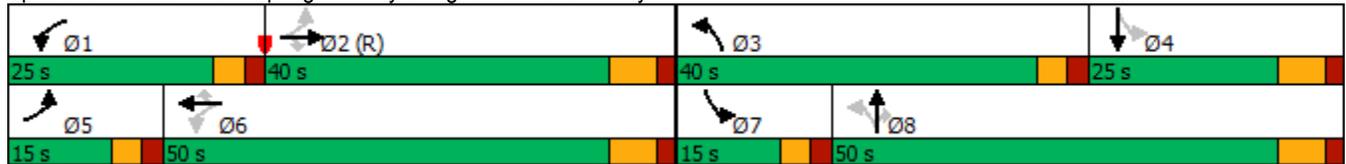


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay	23.0	83.6	16.7	20.8	33.1	0.2	21.4	32.5	5.6	24.6	332.4	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	23.0	83.6	16.7	20.8	33.1	0.2	21.4	32.5	5.6	24.6	332.4	
LOS	C	F	B	C	C	A	C	C	A	C	F	
Approach Delay		64.2			27.6			15.6			296.4	
Approach LOS		E			C			B			F	
Queue Length 50th (ft)	52	~440	60	39	121	0	71	89	3	27	~516	
Queue Length 95th (ft)	85	#541	139	60	164	0	75	109	2	26	#234	
Internal Link Dist (ft)		625			1513			551			572	
Turn Bay Length (ft)	140		165	240			250			150		
Base Capacity (vph)	402	911	554	643	1184	632	1042	623	801	326	269	
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.27	1.03	0.52	0.25	0.31	0.05	0.27	0.23	0.52	0.18	1.63	

Intersection Summary

Area Type: Other
 Cycle Length: 130
 Actuated Cycle Length: 130
 Offset: 0 (0%), Referenced to phase 2:EBTL, Start of Green
 Natural Cycle: 90
 Control Type: Pretimed
 Maximum v/c Ratio: 1.63
 Intersection Signal Delay: 80.7
 Intersection LOS: F
 Intersection Capacity Utilization 62.8%
 ICU Level of Service B
 Analysis Period (min) 15
 ~ Volume exceeds capacity, queue is theoretically infinite.
 Queue shown is maximum after two cycles.
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

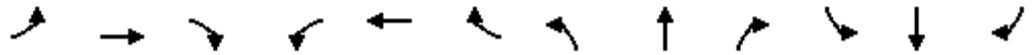
Splits and Phases: 67: Springhill Pkwy & Highlands Ranch Pkwy



Lanes, Volumes, Timings

70: Foothills Canyon Blvd & Highlands Ranch Pkwy

12/19/2024



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	77	1112	23	60	479	87	45	37	107	109	21	92
Future Volume (vph)	77	1112	23	60	479	87	45	37	107	109	21	92
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	135		0	170		120	170		170	100		0
Storage Lanes	1		0	1		1	1		1	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.997				0.850			0.850		0.878	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3529	0	1770	3539	1583	1770	1863	1583	1770	1635	0
Flt Permitted	0.448			0.104			0.666			0.682		
Satd. Flow (perm)	835	3529	0	194	3539	1583	1241	1863	1583	1270	1635	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		3				92			146		114	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1593			794			600			737	
Travel Time (s)		36.2			18.0			13.6			16.8	
Peak Hour Factor	0.87	0.87	0.87	0.95	0.95	0.95	0.32	0.32	0.32	0.81	0.81	0.81
Adj. Flow (vph)	89	1278	26	63	504	92	141	116	334	135	26	114
Shared Lane Traffic (%)												
Lane Group Flow (vph)	89	1304	0	63	504	92	141	116	334	135	140	0
Enter Blocked Intersection	No											
Lane Alignment	Left	Left	Right									
Median Width(ft)		24			24			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	60		60	60		60	60		60	60		60
Turn Type	pm+pt	NA		pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA	
Protected Phases	5	2		1	6			8				4
Permitted Phases	2			6		6	8		8	4		
Minimum Split (s)	10.0	31.5		10.0	31.5	31.5	34.0	34.0	34.0	33.0	33.0	
Total Split (s)	10.0	45.0		10.0	45.0	45.0	30.0	30.0	30.0	30.0	30.0	
Total Split (%)	11.8%	52.9%		11.8%	52.9%	52.9%	35.3%	35.3%	35.3%	35.3%	35.3%	
Maximum Green (s)	5.0	38.5		5.0	38.5	38.5	25.0	25.0	25.0	25.0	25.0	
Yellow Time (s)	3.0	4.5		3.0	4.5	4.5	3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.0	6.5		5.0	6.5	6.5	5.0	5.0	5.0	5.0	5.0	
Lead/Lag	Lead	Lag		Lead	Lag	Lag						
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes						
Walk Time (s)		5.0			5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Flash Dont Walk (s)		10.5			10.5	10.5	24.0	24.0	24.0	23.0	23.0	
Pedestrian Calls (#/hr)		0			0	0	0	0	0	0	0	
Act Effct Green (s)	45.0	38.5		45.0	38.5	38.5	25.0	25.0	25.0	25.0	25.0	
Actuated g/C Ratio	0.53	0.45		0.53	0.45	0.45	0.29	0.29	0.29	0.29	0.29	
v/c Ratio	0.18	0.81		0.32	0.31	0.12	0.39	0.21	0.59	0.36	0.25	

Lanes, Volumes, Timings

70: Foothills Canyon Blvd & Highlands Ranch Pkwy

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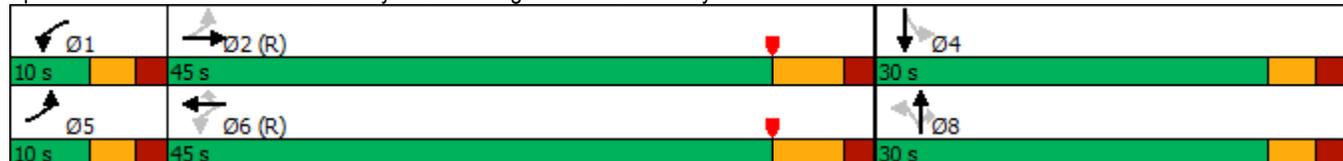


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay	8.7	25.3		12.3	15.5	3.6	27.8	23.9	18.9	27.2	8.1	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	8.7	25.3		12.3	15.5	3.6	27.8	23.9	18.9	27.2	8.1	
LOS	A	C		B	B	A	C	C	B	C	A	
Approach Delay		24.2			13.5			22.0				17.4
Approach LOS		C			B			C				B
Queue Length 50th (ft)	19	305		13	86	0	60	46	82	57	10	
Queue Length 95th (ft)	37	372		29	122	25	35	29	9	94	41	
Internal Link Dist (ft)		1513			714			520				657
Turn Bay Length (ft)	135			170		120	170		170	100		
Base Capacity (vph)	497	1600		195	1602	767	365	547	568	373	561	
Starvation Cap Reductn	0	0		0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.18	0.81		0.32	0.31	0.12	0.39	0.21	0.59	0.36	0.25	

Intersection Summary

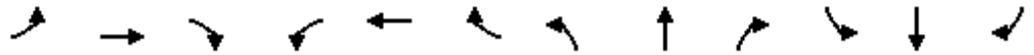
Area Type: Other
 Cycle Length: 85
 Actuated Cycle Length: 85
 Offset: 38.5 (45%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow
 Natural Cycle: 80
 Control Type: Pretimed
 Maximum v/c Ratio: 0.81
 Intersection Signal Delay: 20.7
 Intersection LOS: C
 Intersection Capacity Utilization 62.1%
 ICU Level of Service B
 Analysis Period (min) 15

Splits and Phases: 70: Foothills Canyon Blvd & Highlands Ranch Pkwy



Lanes, Volumes, Timings
 30: Westridge Village Pkwy & Highlands Ranch Pkwy

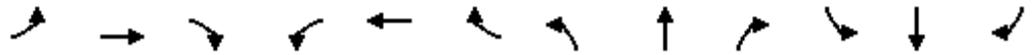
12/19/2024



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↕		↖	↕		↖	↕	↗	↖	↗	↖
Traffic Volume (vph)	7	665	98	210	869	78	66	3	200	69	5	5
Future Volume (vph)	7	665	98	210	869	78	66	3	200	69	5	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100		0	100		0	100		100	50		0
Storage Lanes	1		0	1		0	1		1	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.981			0.988				0.850		0.925	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3472	0	1770	3497	0	1770	1863	1583	1770	1723	0
Flt Permitted	0.157			0.232			0.747			0.754		
Satd. Flow (perm)	292	3472	0	432	3497	0	1391	1863	1583	1405	1723	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		25			14				343			8
Link Speed (mph)		30			30			30				30
Link Distance (ft)		386			629			741				129
Travel Time (s)		8.8			14.3			16.8				2.9
Peak Hour Factor	0.87	0.87	0.87	0.90	0.90	0.90	0.58	0.58	0.58	0.66	0.66	0.66
Adj. Flow (vph)	8	764	113	233	966	87	114	5	345	105	8	8
Shared Lane Traffic (%)												
Lane Group Flow (vph)	8	877	0	233	1053	0	114	5	345	105	16	0
Enter Blocked Intersection	No											
Lane Alignment	Left	Left	Right									
Median Width(ft)		12			12			12				12
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	60		60	60		60	60		60	60		60
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA	Perm	Perm		NA
Protected Phases	5	2		1	6			8				4
Permitted Phases	2			6			8		8	4		
Minimum Split (s)	9.5	26.5		9.5	26.5		29.0	29.0	29.0	30.0	30.0	
Total Split (s)	15.0	40.0		15.0	40.0		25.0	25.0	25.0	25.0	25.0	
Total Split (%)	18.8%	50.0%		18.8%	50.0%		31.3%	31.3%	31.3%	31.3%	31.3%	
Maximum Green (s)	11.0	33.5		11.0	33.5		20.0	20.0	20.0	20.0	20.0	
Yellow Time (s)	3.0	4.5		3.0	4.5		3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	1.0	2.0		1.0	2.0		2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.0	6.5		4.0	6.5		5.0	5.0	5.0	5.0	5.0	
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Walk Time (s)		5.0			5.0		5.0	5.0	5.0	5.0	5.0	
Flash Dont Walk (s)		8.5			6.5		19.0	19.0	19.0	20.0	20.0	
Pedestrian Calls (#/hr)		0			0		0	0	0	0	0	
Act Effct Green (s)	47.0	33.5		47.0	33.5		20.0	20.0	20.0	20.0	20.0	
Actuated g/C Ratio	0.59	0.42		0.59	0.42		0.25	0.25	0.25	0.25	0.25	
v/c Ratio	0.02	0.60		0.53	0.72		0.33	0.01	0.53	0.30	0.04	

Lanes, Volumes, Timings
 30: Westridge Village Pkwy & Highlands Ranch Pkwy

12/19/2024

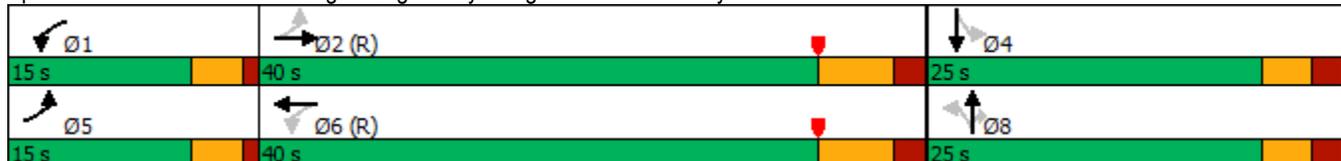


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay	5.6	19.5		11.2	22.4		27.7	22.7	6.4	27.2	17.0	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay	5.6	19.5		11.2	22.4		27.7	22.7	6.4	27.2	17.0	
LOS	A	B		B	C		C	C	A	C	B	
Approach Delay		19.4			20.4			11.8				25.8
Approach LOS		B			C			B				C
Queue Length 50th (ft)	1	167		43	219		47	2	1	43	3	
Queue Length 95th (ft)	6	215		73	291		56	6	0	60	12	
Internal Link Dist (ft)		306			549			661				49
Turn Bay Length (ft)	100			100			100		100	50		
Base Capacity (vph)	374	1468		437	1472		347	465	653	351	436	
Starvation Cap Reductn	0	0		0	0		0	0	0	0	0	
Spillback Cap Reductn	0	0		0	0		0	0	0	0	0	
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	
Reduced v/c Ratio	0.02	0.60		0.53	0.72		0.33	0.01	0.53	0.30	0.04	

Intersection Summary

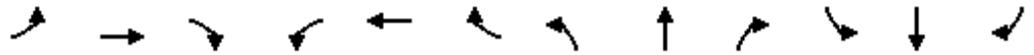
Area Type:	Other
Cycle Length:	80
Actuated Cycle Length:	80
Offset:	33.5 (42%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow
Natural Cycle:	70
Control Type:	Pretimed
Maximum v/c Ratio:	0.72
Intersection Signal Delay:	18.9
Intersection LOS:	B
Intersection Capacity Utilization	56.5%
ICU Level of Service	B
Analysis Period (min)	15

Splits and Phases: 30: Westridge Village Pkwy & Highlands Ranch Pkwy



Lanes, Volumes, Timings
67: Springhill Pkwy & Highlands Ranch Pkwy

12/19/2024



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	89	599	237	232	667	50	378	124	346	46	112	103
Future Volume (vph)	89	599	237	232	667	50	378	124	346	46	112	103
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	140		165	240		0	250		0	150		0
Storage Lanes	1		1	2		1	2		1	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	1.00	0.97	0.95	1.00	0.97	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850		0.928	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3539	1583	3433	3539	1583	3433	1863	1583	1770	1729	0
Flt Permitted	0.282			0.191			0.170			0.659		
Satd. Flow (perm)	525	3539	1583	690	3539	1583	614	1863	1583	1228	1729	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			213			155			410		30	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		705			1593			631			652	
Travel Time (s)		16.0			36.2			14.3			14.8	
Peak Hour Factor	0.94	0.94	0.94	0.89	0.89	0.89	0.80	0.80	0.80	0.59	0.59	0.59
Adj. Flow (vph)	95	637	252	261	749	56	473	155	433	78	190	175
Shared Lane Traffic (%)												
Lane Group Flow (vph)	95	637	252	261	749	56	473	155	433	78	365	0
Enter Blocked Intersection	No											
Lane Alignment	Left	Left	Right									
Median Width(ft)		24			24			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	60		60	60		60	60		60	60		60
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2	6		6	8		8	4		
Minimum Split (s)	10.0	30.5	30.5	10.0	31.5	31.5	10.0	38.5	38.5	10.0	24.5	
Total Split (s)	15.0	40.0	40.0	25.0	50.0	50.0	40.0	50.0	50.0	15.0	25.0	
Total Split (%)	11.5%	30.8%	30.8%	19.2%	38.5%	38.5%	30.8%	38.5%	38.5%	11.5%	19.2%	
Maximum Green (s)	10.0	33.5	33.5	20.0	43.5	43.5	35.0	43.5	43.5	10.0	18.5	
Yellow Time (s)	3.0	4.5	4.5	3.0	4.5	4.5	3.0	4.5	4.5	3.0	4.5	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.0	6.5	6.5	5.0	6.5	6.5	5.0	6.5	6.5	5.0	6.5	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes											
Walk Time (s)		5.0	5.0		5.0	5.0		5.0	5.0			
Flash Dont Walk (s)		19.0	19.0		20.0	20.0		27.0	27.0			
Pedestrian Calls (#/hr)		0	0		0	0		0	0			
Act Effct Green (s)	45.0	33.5	33.5	60.0	43.5	43.5	60.0	43.5	43.5	30.0	18.5	
Actuated g/C Ratio	0.35	0.26	0.26	0.46	0.33	0.33	0.46	0.33	0.33	0.23	0.14	
v/c Ratio	0.34	0.70	0.45	0.35	0.63	0.09	0.45	0.25	0.54	0.24	1.35	

Lanes, Volumes, Timings
67: Springhill Pkwy & Highlands Ranch Pkwy

12/19/2024

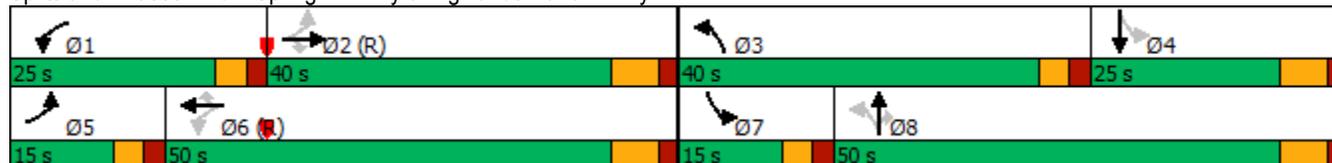


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay	24.6	48.5	10.8	21.9	39.4	0.3	23.5	32.8	6.6	25.5	217.4	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	24.6	48.5	10.8	21.9	39.4	0.3	23.5	32.8	6.6	25.5	217.4	
LOS	C	D	B	C	D	A	C	C	A	C	F	
Approach Delay	36.5			33.1			17.9			183.6		
Approach LOS	D			C			B			F		
Queue Length 50th (ft)	45	256	25	64	279	0	125	95	13	36	~380	
Queue Length 95th (ft)	79	325	99	91	343	0	143	132	47	43	#288	
Internal Link Dist (ft)	625			1513			551			572		
Turn Bay Length (ft)	140		165	240			250			150		
Base Capacity (vph)	277	911	566	740	1184	632	1042	623	802	325	271	
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.34	0.70	0.45	0.35	0.63	0.09	0.45	0.25	0.54	0.24	1.35	

Intersection Summary

Area Type: Other
 Cycle Length: 130
 Actuated Cycle Length: 130
 Offset: 13 (10%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
 Natural Cycle: 90
 Control Type: Pretimed
 Maximum v/c Ratio: 1.35
 Intersection Signal Delay: 48.3
 Intersection LOS: D
 Intersection Capacity Utilization 65.5%
 ICU Level of Service C
 Analysis Period (min) 15
 ~ Volume exceeds capacity, queue is theoretically infinite.
 Queue shown is maximum after two cycles.
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 67: Springhill Pkwy & Highlands Ranch Pkwy



Lanes, Volumes, Timings

70: Foothills Canyon Blvd & Highlands Ranch Pkwy

12/19/2024



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	138	1009	12	49	956	124	51	73	186	86	7	102
Future Volume (vph)	138	1009	12	49	956	124	51	73	186	86	7	102
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	135		0	170		120	170		170	100		0
Storage Lanes	1		0	1		1	1		1	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.998				0.850			0.850		0.860	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3532	0	1770	3539	1583	1770	1863	1583	1770	1602	0
Flt Permitted	0.177			0.164			0.669			0.666		
Satd. Flow (perm)	330	3532	0	305	3539	1583	1246	1863	1583	1241	1602	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		2				111			167		128	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1593			794			600			737	
Travel Time (s)		36.2			18.0			13.6			16.8	
Peak Hour Factor	0.95	0.95	0.95	0.92	0.92	0.92	0.52	0.52	0.52	0.80	0.80	0.80
Adj. Flow (vph)	145	1062	13	53	1039	135	98	140	358	108	9	128
Shared Lane Traffic (%)												
Lane Group Flow (vph)	145	1075	0	53	1039	135	98	140	358	108	137	0
Enter Blocked Intersection	No											
Lane Alignment	Left	Left	Right									
Median Width(ft)		24			24			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	60		60	60		60	60		60	60		60
Turn Type	pm+pt	NA		pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA	
Protected Phases	5	2		1	6			8				4
Permitted Phases	2			6		6	8		8	4		
Minimum Split (s)	10.0	31.5		10.0	31.5	31.5	34.0	34.0	34.0	33.0	33.0	
Total Split (s)	10.0	45.0		10.0	45.0	45.0	30.0	30.0	30.0	30.0	30.0	
Total Split (%)	11.8%	52.9%		11.8%	52.9%	52.9%	35.3%	35.3%	35.3%	35.3%	35.3%	
Maximum Green (s)	5.0	38.5		5.0	38.5	38.5	25.0	25.0	25.0	25.0	25.0	
Yellow Time (s)	3.0	4.5		3.0	4.5	4.5	3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.0	6.5		5.0	6.5	6.5	5.0	5.0	5.0	5.0	5.0	
Lead/Lag	Lead	Lag		Lead	Lag	Lag						
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes						
Walk Time (s)		5.0			5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Flash Dont Walk (s)		10.5			10.5	10.5	24.0	24.0	24.0	23.0	23.0	
Pedestrian Calls (#/hr)		0			0	0	0	0	0	0	0	
Act Effct Green (s)	45.0	38.5		45.0	38.5	38.5	25.0	25.0	25.0	25.0	25.0	
Actuated g/C Ratio	0.53	0.45		0.53	0.45	0.45	0.29	0.29	0.29	0.29	0.29	
v/c Ratio	0.56	0.67		0.21	0.65	0.17	0.27	0.26	0.61	0.30	0.24	

Lanes, Volumes, Timings

70: Foothills Canyon Blvd & Highlands Ranch Pkwy

12/19/2024

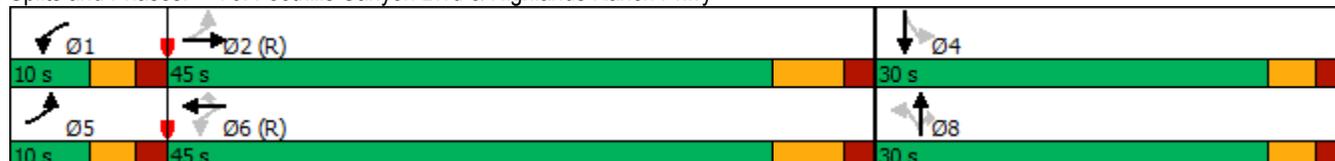


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay	17.2	20.8		9.7	20.4	4.7	25.5	24.5	18.6	26.0	6.4	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	17.2	20.8		9.7	20.4	4.7	25.5	24.5	18.6	26.0	6.4	
LOS	B	C		A	C	A	C	C	B	C	A	
Approach Delay		20.4			18.2			21.1				15.0
Approach LOS		C			B			C				B
Queue Length 50th (ft)	32	228		11	217	7	40	57	84	44	3	
Queue Length 95th (ft)	58	297		26	284	37	43	56	51	76	32	
Internal Link Dist (ft)		1513			714			520				657
Turn Bay Length (ft)	135			170		120	170		170	100		
Base Capacity (vph)	259	1600		247	1602	777	366	547	583	365	561	
Starvation Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.56	0.67		0.21	0.65	0.17	0.27	0.26	0.61	0.30	0.24	

Intersection Summary

Area Type: Other
 Cycle Length: 85
 Actuated Cycle Length: 85
 Offset: 13 (15%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
 Natural Cycle: 80
 Control Type: Pretimed
 Maximum v/c Ratio: 0.67
 Intersection Signal Delay: 19.3
 Intersection LOS: B
 Intersection Capacity Utilization 59.3%
 ICU Level of Service B
 Analysis Period (min) 15

Splits and Phases: 70: Foothills Canyon Blvd & Highlands Ranch Pkwy



Intersection												
Int Delay, s/veh	1.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕						↕			↕	
Traffic Vol, veh/h	2	2	7	0	0	0	8	47	45	11	73	4
Future Vol, veh/h	2	2	7	0	0	0	8	47	45	11	73	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Free								
RT Channelized	-	-	None									
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	-	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	55	55	55	92	92	92	48	48	48	63	63	63
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	4	4	13	0	0	0	17	98	94	17	116	6

Major/Minor	Minor2			Major1			Major2					
Conflicting Flow All	332	379	119				122	0	0	192	0	0
Stage 1	153	153	-				-	-	-	-	-	-
Stage 2	179	226	-				-	-	-	-	-	-
Critical Hdwy	6.42	6.52	6.22				4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	5.42	5.52	-				-	-	-	-	-	-
Critical Hdwy Stg 2	5.42	5.52	-				-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318				2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	663	553	933				1465	-	-	1381	-	-
Stage 1	875	771	-				-	-	-	-	-	-
Stage 2	852	717	-				-	-	-	-	-	-
Platoon blocked, %												
Mov Cap-1 Maneuver	646	0	933				1465	-	-	1381	-	-
Mov Cap-2 Maneuver	646	0	-				-	-	-	-	-	-
Stage 1	864	0	-				-	-	-	-	-	-
Stage 2	841	0	-				-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.3	0.6	1
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	SBL	SBT	SBR
Capacity (veh/h)	1465	-	-	849	1381	-	-
HCM Lane V/C Ratio	0.011	-	-	0.024	0.013	-	-
HCM Control Delay (s)	7.5	0	-	9.3	7.6	0	-
HCM Lane LOS	A	A	-	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0	-	-

Intersection						
Int Delay, s/veh	4.3					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↔		↑			↑
Traffic Vol, veh/h	46	12	49	0	0	44
Future Vol, veh/h	46	12	49	0	0	44
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	43	43	47	47	58	58
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	107	28	104	0	0	76

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	180	104	0	-	-	-
Stage 1	104	-	-	-	-	-
Stage 2	76	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	-	-
Pot Cap-1 Maneuver	810	951	-	0	0	-
Stage 1	920	-	-	0	0	-
Stage 2	947	-	-	0	0	-
Platoon blocked, %			-			-
Mov Cap-1 Maneuver	810	951	-	-	-	-
Mov Cap-2 Maneuver	810	-	-	-	-	-
Stage 1	920	-	-	-	-	-
Stage 2	947	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.1	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBTWBLn1	SBT
Capacity (veh/h)	- 836	-
HCM Lane V/C Ratio	- 0.161	-
HCM Control Delay (s)	- 10.1	-
HCM Lane LOS	- B	-
HCM 95th %tile Q(veh)	- 0.6	-

Intersection												
Int Delay, s/veh	31.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕		↕	↕	
Traffic Vol, veh/h	42	29	187	16	10	39	44	160	9	0	39	3
Future Vol, veh/h	42	29	187	16	10	39	44	160	9	0	39	3
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									
Storage Length	-	-	-	-	-	-	-	-	-	0	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	44	44	44	61	61	61	64	64	64	27	27	27
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	95	66	425	26	16	64	69	250	14	0	144	11

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	80	0	0	491	0	0	647	601	279	701	781	48
Stage 1	-	-	-	-	-	-	469	469	-	100	100	-
Stage 2	-	-	-	-	-	-	178	132	-	601	681	-
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	1518	-	-	1072	-	-	384	414	760	353	326	1021
Stage 1	-	-	-	-	-	-	575	561	-	906	812	-
Stage 2	-	-	-	-	-	-	824	787	-	487	450	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1518	-	-	1072	-	-	212	366	760	144	288	1021
Mov Cap-2 Maneuver	-	-	-	-	-	-	212	366	-	144	288	-
Stage 1	-	-	-	-	-	-	522	509	-	823	791	-
Stage 2	-	-	-	-	-	-	649	767	-	221	409	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	1.2			2.1			94.2			28.6		
HCM LOS							F			D		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	324	1518	-	-	1072	-	-	-	304
HCM Lane V/C Ratio	1.027	0.063	-	-	0.024	-	-	-	0.512
HCM Control Delay (s)	94.2	7.5	0	-	8.4	0	-	0	28.6
HCM Lane LOS	F	A	A	-	A	A	-	A	D
HCM 95th %tile Q(veh)	11.7	0.2	-	-	0.1	-	-	-	2.7

Intersection												
Int Delay, s/veh	8.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↻			↻			↻		↻	↻	
Traffic Vol, veh/h	0	64	14	4	57	0	20	0	17	156	12	26
Future Vol, veh/h	0	64	14	4	57	0	20	0	17	156	12	26
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									
Storage Length	-	-	-	-	-	-	-	-	-	0	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	63	63	63	66	66	66	73	73	73	48	48	48
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	102	22	6	86	0	27	0	23	325	25	54

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	-	0	0	124	0	0	251	211	113	223	222	86
Stage 1	-	-	-	-	-	-	113	113	-	98	98	-
Stage 2	-	-	-	-	-	-	138	98	-	125	124	-
Critical Hdwy	-	-	-	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	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	0	-	-	1463	-	0	702	686	940	733	677	973
Stage 1	0	-	-	-	-	0	892	802	-	908	814	-
Stage 2	0	-	-	-	-	0	865	814	-	879	793	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	-	1463	-	-	642	683	940	712	674	973
Mov Cap-2 Maneuver	-	-	-	-	-	-	642	683	-	712	674	-
Stage 1	-	-	-	-	-	-	892	802	-	908	811	-
Stage 2	-	-	-	-	-	-	788	811	-	857	793	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.5	10.1	13.3
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	SBLn1	SBLn2
Capacity (veh/h)	751	-	-	1463	-	712	853
HCM Lane V/C Ratio	0.067	-	-	0.004	-	0.456	0.093
HCM Control Delay (s)	10.1	-	-	7.5	0	14.2	9.7
HCM Lane LOS	B	-	-	A	A	B	A
HCM 95th %tile Q(veh)	0.2	-	-	0	-	2.4	0.3

Intersection												
Int Delay, s/veh	0.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕						↕			↕	
Traffic Vol, veh/h	3	1	2	0	0	0	8	44	41	5	84	1
Future Vol, veh/h	3	1	2	0	0	0	8	44	41	5	84	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Free								
RT Channelized	-	-	None									
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	-	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	63	63	63	92	92	92	92	92	92	62	62	62
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	5	2	3	0	0	0	9	48	45	8	135	2

Major/Minor	Minor2			Major1			Major2					
Conflicting Flow All	241	263	136				137	0	0	93	0	0
Stage 1	152	152	-				-	-	-	-	-	-
Stage 2	89	111	-				-	-	-	-	-	-
Critical Hdwy	6.42	6.52	6.22				4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	5.42	5.52	-				-	-	-	-	-	-
Critical Hdwy Stg 2	5.42	5.52	-				-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318				2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	747	642	913				1447	-	-	1501	-	-
Stage 1	876	772	-				-	-	-	-	-	-
Stage 2	934	804	-				-	-	-	-	-	-
Platoon blocked, %												
Mov Cap-1 Maneuver	737	0	913				1447	-	-	1501	-	-
Mov Cap-2 Maneuver	737	0	-				-	-	-	-	-	-
Stage 1	870	0	-				-	-	-	-	-	-
Stage 2	928	0	-				-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.6	0.6	0.4
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	SBL	SBT	SBR
Capacity (veh/h)	1447	-	-	799	1501	-	-
HCM Lane V/C Ratio	0.006	-	-	0.012	0.005	-	-
HCM Control Delay (s)	7.5	0	-	9.6	7.4	0	-
HCM Lane LOS	A	A	-	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0	0	-	-

Intersection						
Int Delay, s/veh	5.7					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↔		↑			↑
Traffic Vol, veh/h	42	5	49	0	0	49
Future Vol, veh/h	42	5	49	0	0	49
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	30	30	82	82	88	88
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	140	17	60	0	0	56

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	116	60	0	-	-	-
Stage 1	60	-	-	-	-	-
Stage 2	56	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	-	-
Pot Cap-1 Maneuver	880	1005	-	0	0	-
Stage 1	963	-	-	0	0	-
Stage 2	967	-	-	0	0	-
Platoon blocked, %			-			-
Mov Cap-1 Maneuver	880	1005	-	-	-	-
Mov Cap-2 Maneuver	880	-	-	-	-	-
Stage 1	963	-	-	-	-	-
Stage 2	967	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.9	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBTWBLn1	SBT
Capacity (veh/h)	- 892	-
HCM Lane V/C Ratio	- 0.176	-
HCM Control Delay (s)	- 9.9	-
HCM Lane LOS	- A	-
HCM 95th %tile Q(veh)	- 0.6	-

Intersection												
Int Delay, s/veh	14											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕		↕	↕	
Traffic Vol, veh/h	29	14	154	14	11	13	78	151	20	0	67	0
Future Vol, veh/h	29	14	154	14	11	13	78	151	20	0	67	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None									
Storage Length	-	-	-	-	-	-	-	-	-	0	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	57	57	57	45	45	45	73	73	73	48	48	48
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	51	25	270	31	24	29	107	207	27	0	140	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	53	0	0	295	0	0	433	377	160	480	498	39
Stage 1	-	-	-	-	-	-	262	262	-	101	101	-
Stage 2	-	-	-	-	-	-	171	115	-	379	397	-
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	1553	-	-	1266	-	-	533	555	885	496	474	1033
Stage 1	-	-	-	-	-	-	743	691	-	905	811	-
Stage 2	-	-	-	-	-	-	831	800	-	643	603	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1553	-	-	1266	-	-	384	519	885	316	443	1033
Mov Cap-2 Maneuver	-	-	-	-	-	-	384	519	-	316	443	-
Stage 1	-	-	-	-	-	-	713	663	-	868	791	-
Stage 2	-	-	-	-	-	-	667	780	-	411	578	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	1.1			2.9			28.6			16.8		
HCM LOS							D			C		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	482	1553	-	-	1266	-	-	-	443
HCM Lane V/C Ratio	0.708	0.033	-	-	0.025	-	-	-	0.315
HCM Control Delay (s)	28.6	7.4	0	-	7.9	0	-	0	16.8
HCM Lane LOS	D	A	A	-	A	A	-	A	C
HCM 95th %tile Q(veh)	5.5	0.1	-	-	0.1	-	-	-	1.3

Intersection

Int Delay, s/veh 7.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↻			↻			↻		↻	↻	
Traffic Vol, veh/h	0	63	24	15	72	0	10	0	15	114	12	12
Future Vol, veh/h	0	63	24	15	72	0	10	0	15	114	12	12
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									
Storage Length	-	-	-	-	-	-	-	-	-	0	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	67	67	67	66	66	66	73	73	73	48	48	48
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	94	36	23	109	0	14	0	21	238	25	25

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	-	0	0	130	0	0	292	267	112	278	285	109
Stage 1	-	-	-	-	-	-	112	112	-	155	155	-
Stage 2	-	-	-	-	-	-	180	155	-	123	130	-
Critical Hdwy	-	-	-	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	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	0	-	-	1455	-	0	660	639	941	674	624	945
Stage 1	0	-	-	-	-	0	893	803	-	847	769	-
Stage 2	0	-	-	-	-	0	822	769	-	881	789	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	-	1455	-	-	614	628	941	650	613	945
Mov Cap-2 Maneuver	-	-	-	-	-	-	614	628	-	650	613	-
Stage 1	-	-	-	-	-	-	893	803	-	847	756	-
Stage 2	-	-	-	-	-	-	761	756	-	862	789	-

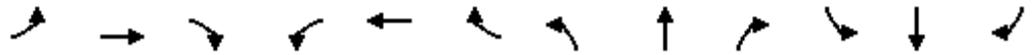
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			1.3			9.9			13.1		
HCM LOS							A			B		

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	SBLn1	SBLn2
Capacity (veh/h)	776	-	-	1455	-	650	744
HCM Lane V/C Ratio	0.044	-	-	0.016	-	0.365	0.067
HCM Control Delay (s)	9.9	-	-	7.5	0	13.7	10.2
HCM Lane LOS	A	-	-	A	A	B	B
HCM 95th %tile Q(veh)	0.1	-	-	0	-	1.7	0.2

Mitigation Scenarios

Lanes, Volumes, Timings
67: Springhill Pkwy & Highlands Ranch Pkwy

12/20/2024



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	95	813	250	152	344	32	200	102	290	26	111	86
Future Volume (vph)	95	813	250	152	344	32	200	102	290	26	111	86
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	140		165	240		0	250		0	150		0
Storage Lanes	1		1	2		1	2		1	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	1.00	0.97	0.95	1.00	0.97	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850		0.935	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3539	1583	3433	3539	1583	3433	1863	1583	1770	1742	0
Flt Permitted	0.532			0.104			0.259			0.647		
Satd. Flow (perm)	991	3539	1583	376	3539	1583	936	1863	1583	1205	1742	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			165			113			414		32	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		705			1593			631			652	
Travel Time (s)		16.0			36.2			14.3			14.8	
Peak Hour Factor	0.87	0.87	0.87	0.93	0.93	0.93	0.70	0.70	0.70	0.45	0.45	0.45
Adj. Flow (vph)	109	934	287	163	370	34	286	146	414	58	247	191
Shared Lane Traffic (%)												
Lane Group Flow (vph)	109	934	287	163	370	34	286	146	414	58	438	0
Enter Blocked Intersection	No											
Lane Alignment	Left	Left	Right									
Median Width(ft)		24			24			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	60		60	60		60	60		60	60		60
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2	6		6	8		8	4		
Minimum Split (s)	10.0	30.5	30.5	10.0	31.5	31.5	10.0	38.5	38.5	10.0	24.5	
Total Split (s)	15.0	40.0	40.0	25.0	50.0	50.0	15.0	50.0	50.0	15.0	50.0	
Total Split (%)	11.5%	30.8%	30.8%	19.2%	38.5%	38.5%	11.5%	38.5%	38.5%	11.5%	38.5%	
Maximum Green (s)	10.0	33.5	33.5	20.0	43.5	43.5	10.0	43.5	43.5	10.0	43.5	
Yellow Time (s)	3.0	4.5	4.5	3.0	4.5	4.5	3.0	4.5	4.5	3.0	4.5	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.0	6.5	6.5	5.0	6.5	6.5	5.0	6.5	6.5	5.0	6.5	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes											
Walk Time (s)		5.0	5.0		5.0	5.0		5.0	5.0			
Flash Dont Walk (s)		19.0	19.0		20.0	20.0		27.0	27.0			
Pedestrian Calls (#/hr)		0	0		0	0		0	0			
Act Effct Green (s)	45.0	33.5	33.5	60.0	43.5	43.5	55.0	43.5	43.5	55.0	43.5	
Actuated g/C Ratio	0.35	0.26	0.26	0.46	0.33	0.33	0.42	0.33	0.33	0.42	0.33	
v/c Ratio	0.27	1.03	0.54	0.25	0.31	0.06	0.49	0.23	0.51	0.10	0.73	

Lanes, Volumes, Timings
67: Springhill Pkwy & Highlands Ranch Pkwy

12/20/2024

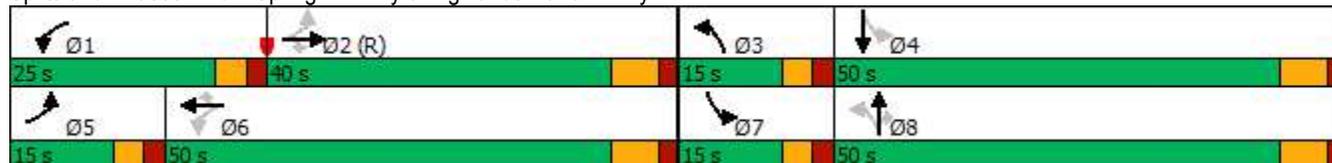


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay	23.0	83.6	21.3	20.8	33.1	0.2	23.7	32.5	5.3	20.2	43.2	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	23.0	83.6	21.3	20.8	33.1	0.2	23.7	32.5	5.3	20.2	43.2	
LOS	C	F	C	C	C	A	C	C	A	C	D	
Approach Delay		65.2			27.6			16.2			40.5	
Approach LOS		E			C			B			D	
Queue Length 50th (ft)	52	~440	85	39	121	0	71	89	0	27	302	
Queue Length 95th (ft)	85	#541	167	60	164	0	75	109	0	26	163	
Internal Link Dist (ft)		625			1513			551			572	
Turn Bay Length (ft)	140		165	240			250			150		
Base Capacity (vph)	402	911	530	643	1184	604	588	623	805	553	604	
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.27	1.03	0.54	0.25	0.31	0.06	0.49	0.23	0.51	0.10	0.73	

Intersection Summary

Area Type: Other
 Cycle Length: 130
 Actuated Cycle Length: 130
 Offset: 0 (0%), Referenced to phase 2:EBTL, Start of Green
 Natural Cycle: 90
 Control Type: Pretimed
 Maximum v/c Ratio: 1.03
 Intersection Signal Delay: 42.0
 Intersection LOS: D
 Intersection Capacity Utilization 62.8%
 ICU Level of Service B
 Analysis Period (min) 15
 ~ Volume exceeds capacity, queue is theoretically infinite.
 Queue shown is maximum after two cycles.
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 67: Springhill Pkwy & Highlands Ranch Pkwy



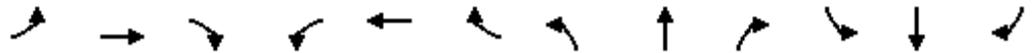
Lanes, Volumes, Timings
67: Springhill Pkwy & Highlands Ranch Pkwy

12/20/2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	89	599	237	232	667	50	378	124	346	46	112	103
Future Volume (vph)	89	599	237	232	667	50	378	124	346	46	112	103
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	140		165	240		0	250		0	150		0
Storage Lanes	1		1	2		1	2		1	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	1.00	0.97	0.95	1.00	0.97	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850		0.928	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3539	1583	3433	3539	1583	3433	1863	1583	1770	1729	0
Flt Permitted	0.282			0.191			0.350			0.634		
Satd. Flow (perm)	525	3539	1583	690	3539	1583	1265	1863	1583	1181	1729	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			213			113			433		38	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		705			1593			631			652	
Travel Time (s)		16.0			36.2			14.3			14.8	
Peak Hour Factor	0.94	0.94	0.94	0.89	0.89	0.89	0.80	0.80	0.80	0.59	0.59	0.59
Adj. Flow (vph)	95	637	252	261	749	56	473	155	433	78	190	175
Shared Lane Traffic (%)												
Lane Group Flow (vph)	95	637	252	261	749	56	473	155	433	78	365	0
Enter Blocked Intersection	No	No	No	No	No	No						
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	60		60	60		60	60		60	60		60
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2	6		6	8		8	4		
Minimum Split (s)	10.0	30.5	30.5	10.0	31.5	31.5	10.0	38.5	38.5	10.0	24.5	
Total Split (s)	15.0	40.0	40.0	25.0	50.0	50.0	15.0	50.0	50.0	15.0	50.0	
Total Split (%)	11.5%	30.8%	30.8%	19.2%	38.5%	38.5%	11.5%	38.5%	38.5%	11.5%	38.5%	
Maximum Green (s)	10.0	33.5	33.5	20.0	43.5	43.5	10.0	43.5	43.5	10.0	43.5	
Yellow Time (s)	3.0	4.5	4.5	3.0	4.5	4.5	3.0	4.5	4.5	3.0	4.5	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.0	6.5	6.5	5.0	6.5	6.5	5.0	6.5	6.5	5.0	6.5	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes							
Walk Time (s)		5.0	5.0		5.0	5.0		5.0	5.0			
Flash Dont Walk (s)		19.0	19.0		20.0	20.0		27.0	27.0			
Pedestrian Calls (#/hr)		0	0		0	0		0	0			
Act Effct Green (s)	45.0	33.5	33.5	60.0	43.5	43.5	55.0	43.5	43.5	55.0	43.5	
Actuated g/C Ratio	0.35	0.26	0.26	0.46	0.33	0.33	0.42	0.33	0.33	0.42	0.33	
v/c Ratio	0.34	0.70	0.45	0.35	0.63	0.09	0.67	0.25	0.53	0.14	0.61	

Lanes, Volumes, Timings
 67: Springhill Pkwy & Highlands Ranch Pkwy

12/20/2024

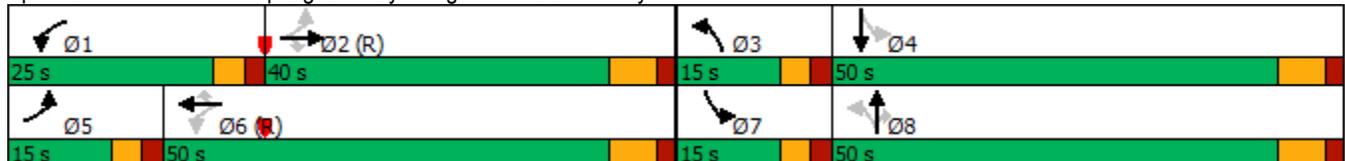


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay	24.6	48.5	10.8	21.9	39.4	0.3	28.7	32.8	5.4	20.6	37.1	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	24.6	48.5	10.8	21.9	39.4	0.3	28.7	32.8	5.4	20.6	37.1	
LOS	C	D	B	C	D	A	C	C	A	C	D	
Approach Delay		36.5			33.1			19.8			34.2	
Approach LOS		D			C			B			C	
Queue Length 50th (ft)	45	256	25	64	279	0	125	95	0	36	230	
Queue Length 95th (ft)	79	325	99	91	343	0	143	132	33	43	186	
Internal Link Dist (ft)		625			1513			551			572	
Turn Bay Length (ft)	140		165	240			250			150		
Base Capacity (vph)	277	911	566	740	1184	604	701	623	817	544	603	
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.34	0.70	0.45	0.35	0.63	0.09	0.67	0.25	0.53	0.14	0.61	

Intersection Summary

Area Type:	Other
Cycle Length:	130
Actuated Cycle Length:	130
Offset:	13 (10%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle:	90
Control Type:	Pretimed
Maximum v/c Ratio:	0.70
Intersection Signal Delay:	30.2
Intersection LOS:	C
Intersection Capacity Utilization	65.5%
ICU Level of Service	C
Analysis Period (min)	15

Splits and Phases: 67: Springhill Pkwy & Highlands Ranch Pkwy



Intersection	
Intersection Delay, s/veh	15.5
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↗		↕			↕		↗	↘	
Traffic Vol, veh/h	42	29	187	16	10	39	44	160	9	0	39	3
Future Vol, veh/h	42	29	187	16	10	39	44	160	9	0	39	3
Peak Hour Factor	0.44	0.44	0.44	0.61	0.61	0.61	0.64	0.64	0.64	0.27	0.27	0.27
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	95	66	425	26	16	64	69	250	14	0	144	11
Number of Lanes	0	1	1	0	1	0	0	1	0	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	2	2	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	1	2	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	2	1	2
HCM Control Delay	14.4	11.7	19.8	12.8
HCM LOS	B	B	C	B

Lane	NBLn1	EBLn1	EBLn2	WBLn1	SBLn1	SBLn2
Vol Left, %	21%	32%	0%	25%	0%	0%
Vol Thru, %	75%	22%	0%	15%	100%	93%
Vol Right, %	4%	46%	100%	60%	0%	7%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	213	133	125	65	0	42
LT Vol	44	42	0	16	0	0
Through Vol	160	29	0	10	0	39
RT Vol	9	62	125	39	0	3
Lane Flow Rate	333	302	285	107	0	156
Geometry Grp	4b	5	5	4b	5	5
Degree of Util (X)	0.613	0.521	0.449	0.206	0	0.302
Departure Headway (Hd)	6.633	6.216	5.674	6.947	7.037	6.986
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	542	576	629	520	0	510
Service Time	4.712	3.995	3.453	4.947	4.834	4.783
HCM Lane V/C Ratio	0.614	0.524	0.453	0.206	0	0.306
HCM Control Delay	19.8	15.6	13.1	11.7	9.8	12.8
HCM Lane LOS	C	C	B	B	N	B
HCM 95th-tile Q	4.1	3	2.3	0.8	0	1.3

Intersection	
Intersection Delay, s/veh	12.9
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↗		↕			↕		↖	↗	
Traffic Vol, veh/h	29	14	154	14	11	13	78	151	20	0	67	0
Future Vol, veh/h	29	14	154	14	11	13	78	151	20	0	67	0
Peak Hour Factor	0.57	0.57	0.57	0.45	0.45	0.45	0.73	0.73	0.73	0.48	0.48	0.48
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	51	25	270	31	24	29	107	207	27	0	140	0
Number of Lanes	0	1	1	0	1	0	0	1	0	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	2	2	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	1	2	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	2	1	2
HCM Control Delay	10.6	10.7	16.5	11
HCM LOS	B	B	C	B

Lane	NBLn1	EBLn1	EBLn2	WBLn1	SBLn1	SBLn2
Vol Left, %	31%	29%	0%	37%	0%	0%
Vol Thru, %	61%	14%	0%	29%	100%	100%
Vol Right, %	8%	58%	100%	34%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	249	102	95	38	0	67
LT Vol	78	29	0	14	0	0
Through Vol	151	14	0	11	0	67
RT Vol	20	59	95	13	0	0
Lane Flow Rate	341	178	168	84	0	140
Geometry Grp	4b	5	5	4b	5	5
Degree of Util (X)	0.565	0.292	0.254	0.152	0	0.243
Departure Headway (Hd)	5.967	5.9	5.454	6.477	6.261	6.261
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	604	609	658	552	0	572
Service Time	4.005	3.642	3.196	4.533	4.009	4.009
HCM Lane V/C Ratio	0.565	0.292	0.255	0.152	0	0.245
HCM Control Delay	16.5	11.1	10.1	10.7	9	11
HCM Lane LOS	C	B	B	B	N	B
HCM 95th-tile Q	3.5	1.2	1	0.5	0	0.9