

# TRAILBLAZER ELEMENTARY TO ELDORADO ELEMENTARY CONSOLIDATION WITHOUT 6TH GRADE Traffic Impact Study

Prepared For: Douglas County School District

March 21, 2025

Project Number: 1124175



# TRAILBLAZER ELEMENTARY TO ELDORADO ELEMENTARY CONSOLIDATION WITHOUT 6TH GRADE

Traffic Impact Study

Highlands Ranch, Colorado

Project Number: 1124175

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

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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 Trailblazer Elementary into Eldorado Elementary. In addition, the 6<sup>th</sup> grade students will be moved from the elementary schools to a middle school. This traffic impact study addresses existing traffic conditions and potential traffic challenges at Eldorado Elementary, while considering the anticipated increase in traffic caused by the school consolidation.

Eldorado has a parking area to the southwest of the school, with two access points on Timbervale Trail, and a designated drop-off lane/bus loop with two access points on Westridge Knolls Avenue. Pedestrian crosswalks are located near the southern access point of the parking lot on Timbervale Trail, and at the intersection of Timbervale Trail and Westridge Knolls Avenue. School bus service is not provided at Eldorado but will be provided for Trailblazer students who qualify after relocating to Eldorado.

The projected 2028-2029 combined enrollment is 669 students without 6<sup>th</sup> Grade. These projected combined enrollment numbers are 16 percent more than the previous maximum Eldorado 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 2/3 of the Trailblazer students will be newly eligible to take the bus to school. Students who currently walk to Trailblazer are unlikely to walk to Eldorado 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 Eldorado. Taking into account the estimated street parking trips, 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 Eldorado is about 137 trips during the morning peak hour and 147 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. Consolidation of the schools will increase traffic at Eldorado with more vehicles using on-street parking, the school parking lot, and the pick-off/drop-off lanes. This will increase impacts to the surrounding roadways during pick-up and drop-off times.

Although increased traffic is expected around Eldorado with the increased enrollment, no traffic mitigation measures are recommended. Douglas County recognizes there will be increased delays around the school during 15-minute peak periods at pick-up and drop-off times.



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# **1.INTRODUCTION**

# 1.1 Study Purpose and Scope

The purpose of this Traffic Impact Study (TIS) is to discuss the existing traffic patterns at Eldorado Elementary (Eldorado) 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 Trailblazer Elementary (Trailblazer) consolidate into Eldorado. In addition, the 6<sup>th</sup> grade students will be moved from the elementary schools to a middle school.

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 Eldorado.

### 1.2 Study Area

Eldorado Elementary School is located at 1305 Timbervale Trail in the western region of Highlands Ranch. This is near the intersection of Westridge Knolls Avenue at Timbervale Trail. The parcel number for the property is 222909418001. A vicinity map showing the school's location is provided as **Figure 1**.



Figure 1 – Vicinity Map



- Highlands Ranch Parkway at Desert Willow Road/Westridge Knolls Avenue
- Highlands Ranch Parkway at Wildcat Reserve Parkway/Spring Hill Parkway
- Highlands Ranch Parkway at Foothills Canyon Boulevard
- Westridge Knolls Avenue at Timbervale Trail

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**

#### Eldorado

Eldorado 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 south of the intersection of Highlands Ranch Parkway at Kendrick Castillo Way (Lucent Boulevard). Eldorado has a parking area to the southwest of the school, with two access points on Timbervale Trail, and a designated drop-off lane/bus loop with two access points on Westridge Knolls Avenue. Pedestrian crosswalks are located near the southern access point of the parking lot on Timbervale Trail, and at the intersection of Timbervale Trail and Westridge Knolls Avenue. Eldorado has a maximum Capacity of 800 students but the largest enrollment since 2013 is 588 students.

School bus service is not provided at Eldorado. **Figure 2** depicts Eldorado's local attendance boundary in red 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.

### 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 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 3** 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. Most of the students attending Trailblazer do not live within 1 mile of Eldorado. Therefore, they would qualify for bus service to Eldorado.





Figure 2 – Eldorado Bus Service Map



Figure 3 – Trailblazer Bus Service Map



# **2. EXISTING CONDITIONS**

### 2.1 Site Observation

A site observation was performed at Eldorado on November 11, 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 4:15 PM. Key observations included:

- Long queues on Timbervale Trail
- Increased congestion on Westridge Knolls Avenue
- Sight visibility challenges while exiting parking lot
- Inadequate space for turning movements from drop-off aisle

### 2.2 Roadway Network

The Highlands Ranch roadway network is maintained by Douglas County. Eldorado 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 Westridge Knolls Avenue, Lucent Boulevard at Westridge Knolls Avenue, and Lucent Boulevard at Timbervale Trail with Lucent Boulevard being the main arterial street closest to the school. Westridge Knolls Avenue extends from the school entrance to a signalized intersection at Highlands Ranch Parkway and a non-signalized intersection at Lucent Boulevard. Additionally, signalized intersections are present at Wildcat Reserve Parkway at Highlands Ranch Parkway and Foothills Canyon Boulevard at Highlands Ranch Parkway.

Trailblazer traffic driving to Eldorado will mainly use Highlands Ranch Parkway, mainly from either Spring Hill Parkway or from Foothills Canyon Boulevard. **Figure 4** depicts the most likely route that would be taken from Trailblazer to Eldorado.

School zone flashers operate from 8:10 to 8:50 AM and from 3:20 to 4:00PM. One flasher is located on Timbervale Trail and two are located on Westridge Knolls Avenue, each direction from the school. Flashers are approximately 100 feet off the school property line.



Figure 4 – Route from Trailblazer to Eldorado

### Highlands Ranch Parkway at Desert Willow Road/ Westridge Knolls Avenue

The intersection of Highlands Ranch Parkway at Westridge Knolls Avenue is signalized with permissive left-turn lanes/phases for all approaches. **Figure 5** shows an aerial of the intersection with the current intersection layout.

Eastbound Highlands Ranch Parkway has two through lanes and a dedicated left-turn lane. The left turn lane has approximately 140 feet of storage with a 90-foot taper before transitioning to a striped median. There is no dedicated right turn lane. Westbound Highlands Ranch Parkway has two through lanes with a dedicated left-turn lane. The left turn lane has approximately 130 feet of storage with a 150-foot taper before transitioning to a striped median. There is no dedicated right turn lane on this approach. There is a bike lane in each direction on Highlands Ranch Parkway.

Northbound Westridge Knolls Avenue has one through lane and a dedicated left-turn lane with approximately 145 feet of storage and a 45-foot taper. Southbound Desert Willow Road has a shared through and right turn lane. The dedicated left-turn lane has approximately 90 feet of storage and a 50foot taper. Bike lanes are present on Westridge Knolls Avenue, but they merge with vehicle traffic prior to the intersection.



Figure 5 – Highlands Ranch Parkway at Westridge Knolls Avenue/Desert Willow Road

#### Highlands Ranch Parkway at Wildcat Reserve Parkway/Spring Hill Parkway

The intersection of Highlands Ranch Parkway at Wildcat Reserve Parkway is signalized with protected/permissive left-turn lanes/phases all approaches. **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 on Spring Hill Parkway contains 150 feet of storage with a 100 feet taper.



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

### **Highlands Ranch Parkway at Foothills Canyon Boulevard**

The intersection of Highlands Ranch Parkway at Foothills Canyon Boulevard is signalized with protected/permissive left-turn lanes/phases for traffic on both Highlands Ranch Parkway and on Foothills Canyon Boulevard. Figure 7 shows an aerial of the intersection with the current intersection layout.

Eastbound Highlands Ranch Parkway has two through lanes and a dedicated left-turn lane. The left-turn lane has approximately 140 feet of storage length with 60 feet of taper length, before transitioning to a striped median. There is no dedicated right turn lane. Westbound Highlands Ranch Parkway has two through lanes with a dedicated left-turn lane. The left-turn lane has approximately 180 feet of storage



length with 100 feet of taper length, before transitioning to a striped median. There is a dedicated right turn lane with 120 feet of storage length and a 200 feet taper length. Highlands Ranch Parkway has a bike lane for each direction.

Northbound Foothills Canyon Boulevard has one through lane and a dedicated right-turn lane with approximately 170 feet of storage length and 110 feet of taper length. The left-turn lane has approximately 170 feet of storage length and 80 feet of taper length. Southbound Foothills Canyon Parkway has a shared through and right-turn lane and a dedicated left-turn lane. The dedicated left-turn lane has approximately 100 feet of storage length and 100 feet of taper length. There is a bike lane in each direction, but they merge with vehicle traffic lanes prior to the intersection.



Figure 7 – Highlands Ranch Parkway at Foothills Canyon Boulevard



#### Westridge Knolls Avenue at Timbervale Trail

The intersection of Westridge Knolls Avenue at Timbervale Trail is an unsignalized, 3-way intersection with a stop sign on the Timbervale Trail approach. **Figure 8** shows an aerial of the intersection with the current intersection layout. Each approach to the intersection contains only two lanes, as there are no dedicated lanes for left or right turns. Bike lanes are present on Westridge Knolls Avenue in each direction.



Figure 8 – Westridge Knolls Avenue at Timbervale Trail



### **Roadway Characteristics**

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

Roadway	Spring Hill Parkway	Foothills Canyon Parkway	Highlands Ranch Parkway	Westridge Knolls Avenue	Timbervale Trail
Speed Limit	25 mph	25 mph	45 mph	30 mph	25 mph
Number of Through Lanes	2	2	4	2	2
Lane Width 12 feet		12 feet	12 feet	12 feet	17 feet*
Bike Lane Width	5 feet	6 feet	4-5 feet	5 feet	None
Median	None	None	Striped	None	None
On-Street Parking	None	None	None	Yes, on South Side near Eldorado	Both Sides

Table 1 – Roadway Characteristics

\*Lane width is defined as distance from centerline to edge of pavement

### 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 Knolls Avenue
- Highlands Ranch Parkway at Wildcat Reserve Parkway/Spring Hill Parkway
- Highlands Ranch Parkway at Foothills Canyon Boulevard
- Westridge Knolls Avenue at Timbervale Trail
- Westridge Knolls Avenue at E Bus Access
- Westridge Knolls Avenue at W Bus Access
- Timbervale Trail at N Parking Lot Access
- Timbervale Trail at S Parking Lot Access

Traffic count data is summarized in **Table 2** and is included in **Appendix B**. The existing traffic is shown in **Figure 9**.

### 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 9** 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 9 – Exisitng Traffic



Intersection	Peak Hour	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Highlands Ranch	AM	3	743	108	98	451	36	123	5	197	82	5	7
Village Pkwy	PM	7	637	122	185	841	78	90	3	175	69	5	5
Highlands Ranch	AM	15	813	283	152	344	32	233	25	290	26	34	6
Pkwy & Springhill Pkwy	PM	15	599	258	232	667	50	399	53	346	46	41	29
Highlands Ranch	AM	77	1112	23	60	479	87	45	37	107	109	21	92
Canyon Blvd	PM	138	1009	12	49	956	124	51	73	186	86	7	102
Westridge Village	AM	-	70	88	19	101	-	91	-	16	-	-	-
Pkwy & Baneberry Ct	PM	-	114	94	13	77	-	103	-	16	-	-	-
Baneberry Pl &	AM	4	0	5	9	2	62	2	37	18	78	11	16
Baneberry Ct	PM	7	0	1	16	2	77	4	30	13	53	33	19
Westridge Village	AM	-	40	-	-	108	-	44	-	32	-	-	-
Pkwy & E Bus Access	PM	-	101	-	-	71	-	19	-	14	-	-	-
Westridge Village	AM	10	37	36	39	109	5	-	-	-	3	0	9
Access	PM	21	97	15	18	73	2	-	-	-	3	2	17

#### Table 2 – Traffic Volume Summary

# 2.5 Traffic Safety Analysis

#### **Intersection Crash Analysis**

Crash history was reviewed at the intersections of Highlands Ranch Parkway at Wildcat Reserve Parkway, Highlands Ranch Parkway at Foothills Canyon Boulevard, and Highlands Ranch Parkway at Westridge Knolls Avenue. 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 at 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 3<sup>rd</sup> vehicle and one involved a bicycle.

#### Highlands Ranch Parkway at Foothills Canyon Boulevard

There was a total of 37 crashes at Highlands Ranch Parkway and Foothills Canyon Boulevard over the course of the study period. Six of these involved injuries. Of the 37 crashes, 12 involved a left turn, and 6 were at night. Two of these accidents involved a 3<sup>rd</sup> vehicle and two involved a bicycle.

#### Highlands Ranch Parkway at Westridge Knolls Avenue

There was a total of 22 crashes at Highlands Ranch Parkway and Westridge Knolls Avenue over the course of the study period. Five of these involved injuries. Of the 22 crashes, 5 involved a left turn, and 3 were at night. One of these accidents involved a bicycle and none involved a 3<sup>rd</sup> vehicle. Four of the five left turn accidents resulted in injuries.



Year	Highlands Ranch Pkwy & Wildcat Reserve Pkwy	Highlands Ranch Pkwy & Foothills Canyon Bvld	Highlands Ranch Pkwy & Westridge Knolls Ave
2019	8	5	6
2020	5	2	5
2021	8	7	3
2022	10	6	1
2023	6	11	2
2024	5	6	5

### Table 3 – Annual Crash Summary

#### School Safety

Students are picked up and dropped off primarily via the parking lot to the southwest 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 Timbervale Trail and the south side of Westridge Knolls Avenue. Bike lanes are present on Westridge Knolls Avenue, but these become partially impeded by street parking. A tree hinders visibility at the south exit for left-turning vehicles exiting the parking lot to Timbervale Trail.

Eldorado was provided with a questionnaire to provide any feedback related to traffic and school safety. Eldorado administration generally stated that there are no major concerns, but that they would like another crosswalk. Responses to the questionnaire are provided in Appendix G.

# 3. TRIP PROJECTIONS

### 3.1 Projected Traffic

Douglas County School District (DCSD) is considering a potential school consolidation option that would consolidate Trailblazer Elementary into Eldorado. The consolidation option includes moving 6<sup>th</sup> Grade to the separate middle school. Table 4 provides data on student enrollment for Trailblazer and Eldorado with and without 6th Grade.

School	Ideal Capacity per DCSD	Maximum Historic Enrollment	2023-2024 Enrollment Count**	Projected 2028-2029 Enrollment**
Trailblazer	437	508	269	345
Eldorado	506	588	346	324
Combined	-	-	-	669

Table 4 – School Enrollment

\*\*Enrollment values include Pre-School through 5<sup>th</sup> Grade. 6<sup>th</sup> Grade enrollment was assumed to 1/7 of Kindergarten through 6<sup>th</sup> Grade enrollment.

The projected 2028-2029 combined enrollment is 669 students without 6th Grade. These projected combined enrollment numbers are 16 percent more than the previous maximum Eldorado enrollment.

# 3.2 Trip Generation

Trip generation calculations were calculated based on the number of additional students that will be transferring from Trailblazer to Eldorado. For the purposes of this report, it is assumed the existing 2024 Eldorado traffic and enrollment will see negligible changes by the 2025-2026 school year. Therefore, the

trip generation does not focus on the total future enrollment for Eldorado with the addition of Trailblazer students. The trip generation calculations are therefore only based on the Trailblazer existing traffic and enrollment. The trip generation was calculated multiple ways to account for the transfer of Trailblazer students to Eldorado. 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 Trailblazer to understand the current traffic demand at the school and how that traffic demand is anticipated to change when relocated to Eldorado. The following considerations were taken into account to determine the anticipated number of trips added to Eldorado 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.
- Reduce enrollment by 1/7<sup>th</sup> and subtract the 6<sup>th</sup> grade traffic from the trip generation numbers

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

Peak Hour	Current Enrollment Riders		Traffic Data Ingress/Egress	Ped & Bike	Estimated Street Parking	Calculated Carpooling
AM	214	14	137	39	40	75
PM	514	14	112	83	49	56

······································	Table 5 –	Trailblazer	Existing	Traffic	Considerations
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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 Trailblazer students will be newly eligible to take the bus to school. Assuming the ridership percentage remains the same as the current bus ridership, ridership for these newly eligible students will also be about **70%** which results in an additional **63** students riding the bus to school for a total of **77** students from Trailblazer taking the bus to Eldorado.

Students who currently walk to Trailblazer are unlikely to walk to Eldorado 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 Eldorado. Taking into account the estimated street parking trips, 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 Eldorado is about **137** trips during the morning peak hour and **147** trips during the afternoon peak hour.



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

				Al Gene	M Pea erator	k - Peak	PM Peak - Generator Peak			
LUC	Description	Units	Quant	Total	Ingress	Egress	Total	Ingress	Egress	
-	Existing Data Based Calculation	Students	269	137	69	69	147	74	74	
520	Public Elementary School	Students	269	202	109	93	121	56	65	
530	Private School (K-8)	Students	269	272	152	120	161	76	86	
536	Charter Elementary School	Students	269	288	153	135	194	95	99	

Table 6 – Trip Generation Comparison

# 3.3 Trip Distribution/Assignment

The trip distribution and assignment was evaluated by first reviewing the attendance boundaries for Trailblazer to get an idea of the population density throughout within the boundary limits. Then the distribution of traffic within the Trailblazer boundary and the directions of approach for arriving at Eldorado was estimated by percentage. Note a small percentage of traffic was assumed to come from outside the Trailblazer boundaries based on the existing traffic trends. The resulting Trip Distribution shown in **Figure 10**.



Figure 10 – Trip Distribution

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

- Highlands Ranch Parkway at Westridge Knolls Avenue
- Highlands Ranch Parkway at Wildcat Reserve Parkway/Spring Hill Parkway
- Highlands Ranch Parkway at Foothills Canyon Boulevard
- Westridge Knolls Avenue at Timbervale Trail
- Westridge Knolls Avenue at E Bus Access
- Westridge Knolls Avenue at W Bus Access
- Timbervale Trail at N Parking Lot Access
- Timbervale Trail at S Parking Lot Access

The resulting trip assignment is shown in **Figure 11.** 



Figure 11 – Trip Assignment

17 Trailblazer Elementary to Eldorado Elementary Consolidation Without 6th Grade Traffic Impact Study In addition to the new anticipated trips for Trailblazer students transferring to Eldorado, the existing trips to Trailblazer will also be removed for a few of the key intersections. Certain turning movements accounting for the current arrival of drivers to Trailblazer would be reduced in this new scenario. Using the trip distribution and the existing distribution of ingress and egress trips for Trailblazer, the estimated reduction for certain turning movements was estimated. The resulting reductions are summarized in **Table 7**.

Intersection	Peak Hour	EBL	EBT	WBT	WBR	NBT	SBL	SBT	SBR
Spring Hill Pkwy &	AM	-5			-15	-16	-18	-20	-7
Highlands Ranch Pkwy	PM	-10			-18	-18	-25	-22	-15
Westridge Village Pkwy	AM		-5	-3	-4		-5		-5
& Highland Ranch	PM		-2	-7	-8		-3		-2
Highlands Ranch Pkwy	AM	-18							-15
& Foothills Canyon	PM	-25							-18

Table 7 – Trailblazer Turning Movement Reductions

Additional turning movement reductions were estimated for the Eldorado 6<sup>th</sup> grade traffic that travel to the middle school and no longer travel to Eldorado. As with Trailblazer, it is assumed that the 6<sup>th</sup> grade class accounts for 1/7<sup>th</sup> of the traffic. Therefore, the ingress traffic will be reduced by 28 trips during the morning peak and 17 during the afternoon peak while the egress traffic is anticipated to be reduced by 23 trips during the morning peak and 17 during the afternoon peak. These reductions were distributed across the intersections based on the anticipated trip distribution for the traffic within the existing Eldorado boundaries. The resulting reductions are summarized in **Table 8**. These reductions were also incorporated into the Total traffic calculation.

Intersection	Peak Hour	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Highlands Ranch Pkwy &	AM		-8	-2			-3		-5		-4
Ave/Desert Willow Rd	PM		-3	-3			-3	-1	-2		-1
N Eldorado Parking	AM			-3		-11		-3			-17
Access & Timbervale Trail	PM			-3		-8		-3			-10
S Eldorado Parking	AM			-1		-3			-5	-17	-3
Access & Timbervale Trail	PM			-1		-3			-3	3 -10	-3
Westbridge Knolls Ave &	AM	-3	-9	-8	-2		-6		-8		
Timbervale Trail	PM	-1	-6	-4	-1		-5		-6		
Westbridge Knolls Ave &	AM				-3		-2		-4		
E Bus Access	PM				-3		-1		-1		
Westbridge Knolls Ave &	AM		-3	-3	-2						
W Bus Access	PM		-1	-3	-1						
Spring Hill Pkwy &	AM			-1					-4		
Highlands Ranch Pkwy	PM			-1					-1		
Highlands Ranch Pkwv &	AM	-4		-2	-1				-4		
Foothills Canyon Blvd	PM	-3		-2	-1				-2		

Table 8 – Eldorado Turning Movement Reductions



# **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 Eldorado with the addition of Trailblazer students was calculated by adding the trip assignment to the existing Eldorado traffic data and then subtracting the anticipated turning movement reductions. The resulting total traffic is shown in Figure 12.

# 4.2 Projected Level of Service

The capacity analysis for the total projected traffic from the transfer of Trailblazer students to Eldorado was evaluated using the Synchro. The resulting LOS and delay are summarized in Table 9 for both the existing conditions (without Trailblazer traffic) and for the total traffic conditions (with Trailblazer traffic). Project level of service reports from Synchro are included in Appendix F.





20 Trailblazer Elementary to Eldorado Elementary Consolidation Without 6th Grade Traffic Impact Study

						Exist	ing						Total Tra	affic		
Intersection	Control	Movement	L	os	Dela	y (s)	Queu	e Length (ft)	L	วร	Dela	ıy (s)	Delay D	elta (s)	Queu	e Length (ft)
			AM	РМ	АМ	PM	AM	РМ	АМ	PM	AM	PM	AM	PM	AM	РМ
		Overall	С	С	28.5	31.0	-	-	С	С	34.5	34.0	+6.0	+3.0	-	-
		NBL	В	В	15.1	16.3	39.0	54.0	В	В	16.6	18.0	+1.5	+1.7	34	110
		NBT	В	В	12.6	12.6	52.0	56	В	В	12.5	12.5	-0	-0	589	56
		NBR	В	В	12.6	12.6	52.0	56	В	В	12.5	12.5	-0	-0	589	56
		SBL	В	В	14.5	15.3	21.0	27	В	В	14.5	15.2	0	-0	34	27
Highland Ranch Pwky &		SBT	Α	В	9.6	10.5	36.0	40	Α	В	9.3	10.4	-0	-0	172	40
Desert Willow	Signal	SBR	Α	В	6.9	10.5	36.0	40	Α	В	9.3	10.4	+2.4	-0	172	40
Rd/Westridge Knolls Ave		EBL	В	F	17.3	80.9	34.0	118	В	F	17.3	80.9	0	0	88	118
		EBT	D	С	35.9	32.2	532.0	472	D	D	43.2	37.8	+7.3	+5.6	52	553
		EBR	D	С	35.9	32.2	532.0	472	D	D	43.2	37.8	+7.3	+5.6	52	553
		WBL	С	F	29.3	104.0	34.0	125	С	F	27.8	95.9	-2	-8	21	125
		WBT	В	С	18.9	26.5	172.0	375	В	С	18.9	26.5	0	0	36	375
		WBR	В	С	18.9	26.5	172.0	375	В	С	18.9	26.5	0	0	36	375
		Overall	Α	Α			-	-	D	С	47.7	30.2	+47.7	+30.2	-	-
		NBL	С	С	21.5	23.1	87.0	151.0	С	С	21.5	32.2	0.0	+9.1	87.0	151
		NBT	С	С	29.8	30.5	36.0	65.0	С	С	29.5	30.3	-0.3	-0.2	26.0	56
		NBR	Α	Α	5.4	6.4	1.0	45.0	Α	Α	5.3	5.4	-0.1	-1.0	0.0	33
		SBL	С	С	24.4	25.3	26.0	43.0	С	С	23.0	23.7	-1.4	-1.6	11	24
Highlands Banch Pkwy &		SBT	D	D	50.8	46.6	54.0	80.0	D	С	35.7	34.1	-15.1	-12.5	38	61
Springhill Pkwy	Signal	SBR	D	D	50.8	46.6	54.0	7.0	D	С	35.7	34.1	-15.1	-12.5	38	61
		EBL	С	С	20.3	20.5	21.0	21.0	С	С	21.3	22.1	+1.0	+1.6	47	45
		EBT	F	D	83.6	48.5	541.0	325.0	F	D	98.6	50.5	+15.0	+2.0	584	352
		EBR	С	В	20.8	10.9	178.0	105.0	С	В	20.8	12.8	0.0	+1.9	178	119
		WBL	С	С	20.8	21.9	60.0	91.0	С	С	20.8	22.0	0.0	+0.1	60	91
		WBT	С	D	33.1	39.4	164.0	343.0	С	D	33.6	40.6	+0.5	+1.2	183	370
		WBR	Α	Α	0.2	0.3	0.0	0.0	Α	Α	0.1	0.2	-0.1	-0.1	0	0
		Overall	С	В	20.7	19.3	-	-	С	В	20.5	19.5	-0.2	+0.2	-	-
		NBL	С	С	27.8	25.5	35.0	43.0	С	С	28.9	25.5	+1.1	0.0	35.0	73
		NBT	С	С	23.9	24.5	29.0	56.0	С	С	23.9	24.5	0.0	0.0	29.0	297
		NBR	В	В	18.9	18.6	9.0	51.0	В	В	18.9	18.6	0.0	0.0	9.0	297
		SBL	С	С	27.2	26.0	94.0	76.0	С	С	27.2	26.0	0.0	0.0	94	26
Highlands Banch Pkwy &		SBT	Α	Α	8.1	6.4	41.0	32.0	Α	Α	7.4	6.4	-0.7	0.0	43	284
Foothills Canvon Blvd	Signal	SBR	Α	Α	8.1	6.4	41.0	32.0	Α	Α	7.4	6.4	-0.7	0.0	43	37
,		EBL	Α	В	8.7	17.2	37.0	58.0	Α	С	9.1	21.4	+0.4	+4.2	45	43
		EBT	С	С	25.3	20.8	372.0	297.0	С	С	25.3	20.8	0.0	0.0	372	56
		EBR	С	С	25.3	20.8	372.0	297.0	С	С	25.3	20.8	0.0	0.0	372	51
		WBL	В	Α	12.3	9.7	29.0	26.0	В	Α	12.3	9.7	0.0	0.0	29	76
		WBT	В	С	15.5	20.4	122.0	284.0	В	С	15.5	20.4	0.0	0.0	122	32
		WBR	Α	Α	3.6	4.7	25.0	37.0	Α	Α	3.6	4.7	0.0	0.0	25	32

### Table 9 – LOS and Delay Results



						Со	ntinued									
						Existi	ng						Total Tra	ffic		
Intersection	Control	Movement	LC	os	Dela	y (s)	Queue Le	ngth (ft)	LC	os	Dela	y (s)	Delay D	elta (s)	Queue (1	Length ft)
			AM	РМ	AM	РМ	АМ	РМ	AM	РМ	АМ	РМ	АМ	РМ	AM	PM
		Overall					-	-			-	-	-	-	-	-
		NBL	В	В	10.7	10.4	16	14	В	В	13.0	12.6	+2.3	+2.2	32	28
		NBT	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		NBR	В	В	10.7	10.4	16	14	В	В	13.0	12.6	+2.3	raffic         PM       AM       PM         -       -       -         +2.2       32       28         -       -       -         +2.2       32       28         -       -       -         +2.2       32       28         -       -       -         +2.2       32       28         -       -       -         +2.2       32       28         -       -       -         -       -       -         -       -       -         0       0       0       0         0       0       0       0         -       -       -       -         -       -       -       -         -       -       -       -         -       -       -       -         -       -       -       -         -       -       -       -         -       -       -       -         -       -       -       -         -       -       -       -		
		SBL	-	-	-	-	-	-	-	-	-	-	-	-	Queue Length (ft)           AM         PM           -         -           32         28           -         -           32         28           -         -           32         28           -         -           32         28           -         -           32         28           -         -           32         28           -         -           32         28           -         -           0         0           -         -           0         0           0         0           -         -           -         -           -         -           -         -           -         -           -         -           0         0           2         0           0         0           -         -           -         -           -         -           -         -           0         0           -	-
Westridge Knolls Ave &	Unsignalized	SBT	-	-	-	-	-	-	-	-	-	-	-	-		-
Timbervale Trl	(TWSC or	SBR	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	AWSC)	EBL	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		EBT	Α	Α	0.0	0.0	0	0	Α	Α	0	0	0	0	0	0
		EBR	Α	Α	0.0	0.0	0	0	Α	Α	0	0	0	0	0	0
		WBL	Α	Α	7.7	7.6	4	2	А	А	7.9	7.8	+0.2	+0.2	4	4
		WBT	Α	Α	0.0	0.0	0	0	Α	Α	0	0	0	0	0	0
		WBR	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		Overall	С	С	15.1	15.1	-	-			-	-	-	-	-	-
		NBL	I	-	-	-	-	-	I	I	-	-	-	-	-	-
	Unsignalized	NBT	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		NBR	I	-	-	-	-	-	I	I	-	-	-	-	-	-
		SBL	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Westridge Knolls Ave &		SBT	-	-	-	-	-	-	-	-	-	-	-	-	-	-
W Bus Access	(TWSC or	SBR	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	AWSC)	EBL	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		EBT	Α	Α	0.0	0.0	0	0	А	А	0	0	0	0	0	0
		EBR	Α	Α	0.0	0.0	0	0	Α	Α	0	0	0	0	0	0
		WBL	Α	Α	7.6	7.5	2	0	Α	Α	7.6	7.5	0	0	2	0
		WBT	Α	Α	0.0	0.0	0	0	Α	Α	0	0	0	0	0	0
		WBR	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		Overall			-	-	-	-			-	-	-	-	-	-
		NBL	Α	Α	9.6	9.5	4	2	А	А	9.7	9.6	+0.1	+0.1	4	2
		NBT	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		NBR	А	Α	9.6	9.5	4	2	Α	А	9.7	9.6	+0.1	+0.1	4	2
		SBL	I	-	-	-	-	-	1	-	-	-	-	-	-	-
Wastridga Knalls Ava & F	Unsignalized	SBT	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bus Frit	(TWSC or	SBR	-	-	-	-	-	-	-	-	-	-	-	-	Queue Length (ft)           AM         PM           -         -           32         28           -         -           32         28           -         -           32         28           -         -           32         28           -         -           32         28           -         -           -         -           -         -           -         -           0         0           0         0           -         -           -         -           -         -           -         -           -         -           -         -           -         -           -         -           -         -           -         -           -         -           -         -           -         -           -         -           -         -           -         -           -         -           -	-
	AWSC)	EBL	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		EBT	А	А	0.0	0.0	0	0	А	А	0	0	0	0	0	0
		EBR	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		WBL	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		WBT	А	Α	0.0	0.0	0	0	А	А	0	0	0	0	0	0
		WBR	-	-	-	-	-	-	-	-	-	-	-	-	-	-



						Со	ntinued									
						Existi	ng		Total Traffic							
Intersection	Control	Movement	LOS		Delay (s)		Queue Length (ft)		LOS		Delay (s)		Delay Delta (s)		Queue Length (ft)	
			AM	РМ	АМ	PM	АМ	РМ	AM	РМ	АМ	РМ	АМ	РМ	AM	РМ
		Overall			-	-	-	-			-	-	-	-	-	-
		NBL	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		NBT	Α	Α	0.0	0.0	0	0	Α	Α	0	0	0	0	0	
		NBR	I	-	-	-	-	-	-	-	-	-	-	-	-	-
		SBL	-	-	-	-	-	-	-	-	-	-	-	-	Queue Len (ft)           AM         I           -         -           0         -           -         -           0         -           -         -           0         -           -         -           0         -           -         -           -         -           -         -           -         -           -         -           -         -           -         -           -         -           -         -           0         -           0         -           0         -           0         -           0         -           0         -           0         -           0         -           2         -           0         -           2         -           0         -           2         -           0         -           2         -           0         -           2         - <td>-</td>	-
Timbervale Trl & N	Unsignalized	SBT	Α	Α	0.0	0.0	0	0	Α	Α	0	0	0	raffic $PH$ AM       PN         -       -       -         -       -       -         0       0       0         -       -       -         0       0       0         -       -       -         0       0       0         -       -       -         0       0       0         -       -       -         0       0       0         -       -       -         0       2       2         -       -       -         0       2       2         -       -       -         0       2       2         -       -       -         0       0       0         0       0       0         0       0       0         0       0       0         0       0       0         10       6       0         0       0       0         110       6       0         0       0       0		
Eldorado Parking Access	(TWSC or	SBR	-	-	-	-	-	-	-	-	-	-	-	-	Queue Lengt (ft)           AM         PN           -         -           0         -           -         -           0         -           -         -           0         -           -         -           0         -           -         -           0         -           -         -           0         -           -         -           -         -           -         -           -         -           -         -           12         10           -         -           0         0           0         0           0         0           0         0           0         0           2         0           0         0           2         0           0         0           2         0           0         0           2         0           0         0           2         0           0         0	-
J III	AWSC)	EBL	-	-	-	-	-	-	-	-	-	-	-	-		-
		EBT	-	-	-	-	-	-	-	-	-	-	-	-		-
		EBR	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		WBL	В	Α	10.0	9.9	2	2	В	Α	10.0	9.9	0	0	2	2
		WBT	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		WBR	Α	Α	9.1	8.9	6	4	Α	Α	9.4	9.3	+0.3	+0.4	12	10
		Overall			-	-	-	-			-	-	-	-	-	-
		NBL	А	Α	7.3	7.4	0.0	0	Α	Α	7.3	7.4	0	0	0	0
		NBT	Α	Α	0.0	0.0	0.0	0	Α	Α	0	0	0	0	0	0
		NBR	Α	Α	0.0	0.0	0.0	0	Α	Α	0	0	0	0	0	0
		SBL	Α	Α	7.6	7.5	6.0	4	Α	Α	7.8	7.6	+0.2	+0.1	10	6
Timbervale Trl & N Eldorado Parking Access A Timbervale Trl & S Eldorado Parking Access	Unsignalized	SBT	Α	Α	0.0	0.0	0.0	0	Α	Α	0	0	0	0	0	0
Eldorado Parking Access	(TWSC or	SBR	Α	Α	0.0	0.0	0.0	0	Α	Α	0	0	0	0	0	0
	AWSC)	EBL	В	В	11.8	10.8	2.0	0	В	В	13.7	12.4	+1.9	+1.6	Queue Lengt (ft)           PM         AM         PN           -         -         -           -         -         -           -         -         -           0         0         -           -         -         -           -         -         -           0         0         -           -         -         -           0         0         -           -         -         -           0         0         0           -         -         -           0         2         2           -         -         -           0         2         2           -         -         -           0         2         2           -         -         -           0         0         0           0         0         0           0         0         0           0         0         0           0         0         0           0         0         0           0         0         0	0
		EBT	Α	В	0.0	10.8	0.0	0	Α	Α	0	0	0	-10.8		0
		EBR	В	В	11.8	10.8	0.0	0	В	В	13.7	12.4	+1.9	+1.6	2	0
		WBL	В	В	12.0	10.9	0.0	0	В	В	14.0	12.8	+2.0	+1.9	Queue Long(ft)           AM           -           0           -           0           -           0           -           0           -           0           -           0           -           0           -           0           -           12           -           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           0           2           0           2           0           2           0           2           0           2           0           2           0           2           0           2           0	0
		WBT	Α	Α	0.0	0.0	0.0	0	Α	Α	0	0	0	0	0	0
		WBR	А	А	8.7	8.7	2.0	2	А	Α	8.7	8.7	0	0	2	2





### Signal Warrant Analysis

Major intersections along the assumed route between Trailblazer and Eldorado were analyzed for potential signal needs. MUTCD warrants 4 (Peak Hour) and 7 (Crash experience) were used. No unsignalized intersections within the study area 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 Knolls Avenue/Desert Willow Road, and Highlands Ranch Parkway at Foothills Canyon Boulevard. A right-turn lane is recommended on an arterial street when the LOS operates at an unacceptable level.

The existing traffic data collected shows that the westbound approach of Highlands Ranch Parkway at Westridge Knolls Avenue/Desert Willow Road has 16 right turns during the morning peak hour and 40 during the afternoon peak hour while the eastbound approach has 80 right turns during the morning peak and 88 during the afternoon peak. However, these turning movements are operating at an LOS of A and no right-turn lane is warranted.

### Site Analysis

Based on site observations and feedback from the Eldorado Administration, Eldorado faces the following challenges:

- Long queues on Timbervale Trail
- Increased congestion on Westridge Knolls Avenue
- Sight visibility challenges while exiting the parking lot due to parked vehicles

To address the queueing on Timbervale Trail, the parking lot could be rerouted to increase the number of vehicles that queue onsite. This could be done by closing the entrance at the south end of the parking lot and converting the left-turn exit lane to the parking lot entrance at the north end as seen in **Figure 13**. However, this creates many new inefficiencies. First, if the queue ultimately still extends on to Timbervale Trail, then valuable on-street parking will be lost. Secondly, this creates an inefficiency in the parking lot as the queue will be blocking parking spaces and there will be only one exit lane. Due to these items, it is not recommended to adjust the parking lot.





Figure 13 – Mitigation Measures for Eldorado



# 5. CONCLUSIONS/RECOMMENDATIONS

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

Traffic will be increased with the additional enrollment, but additional bus service will be offered, limiting the impact of the increased enrollment. Consolidation of the schools will increase traffic at Eldorado with more vehicles using on-street parking, the school parking lot, and the pick-off/drop-off lanes. This will increase impacts to the surrounding roadways during pick-up and drop-off times.

Although increased traffic is expected around Eldorado with the increased enrollment, no traffic mitigation measures are recommended. Douglas County recognizes there will be increased delays around the school during 15-minute peak periods at pick-up and drop-off times.



# Appendix A Site Observation Notes



# **TRAFFIC OBSERVATION REPORT**

Project Name DCSD Traff	ïc Study	Project No.	1124175		
<b>Observer</b> Nate Hittle					
Location Eldorado El	ementary School				
<b>Time</b> 8:30 AM		AM / PM	DATE M T	November 1 W Th F	1, 2024 SS
	Queueing	g Data			
Start Time: 8:20 AM					
End Time: 8:45 AM					
Maximum Queueing Length:	450 ft				
Total Storage Length Available:	450 ft				

### **Comments:**

The drop-off lane in the parking lot on the east side of W Timbervale Trail was the most utilized location for parents to drop off students. The cars queued up in the right lane, and the left lane was often used by exiting vehicles to bypass the other queuing vehicles. The drop off at S Westridge Knolls Avenue was less popular, due to its smaller queue storage capacity. However, the queue for this location extended into S Westridge Knolls Avenue. At one point, traffic was at a standstill in both directions for vehicles trying to turn into this area.

### **On-Street Parking Locations and Availability**

### **Comments:**

On-street parking is provided on both sides of W Timbervale Trail. On-street parking was available on S Westridge Knolls Avenue adjacent to the bike lane. The cars parked in this area partially obstructed the bike lane. This was likely due to the snow on the side of the road taking up space in the parking lane. On-street parking was also available on some of the side streets, but it did not appear that these spaces were utilized.

### **Crosswalk Locations and Usage**

### **Comments:**

Crosswalks were located at various locations around the school. The most used crosswalks existed at the intersection of Timbervale Trail and S Westridge Knolls Ave, and at the exit of the parking lot on W Timbervale Trail. Crossing guards were present at both of these locations.



### **Roadway Characteristics**

### **Speed Limit(s) and Location(s):**

The speed limits on S Westridge Knolls Ave and W Timbervale Trail are respectively 30 and 25 mph. The school zone speed limit is 15 mph on both streets.

### Signage:

Signage present on the public roads includes speed limit signs, school zone speed limit signs, stop signs, No Parking signs, school crossing signs, "No U turns in School Zone" signs, and bike lane signs. One-way signs, 10 mph speed advisory signs, and student drop-off signs were present within the parking lot.

### **Bike Lanes:**

Bike lanes are present on S Westridge Knolls Ave. As previously mentioned parked vehicles often impeded this lane,

### **Other Comments:**

The drop-off lane constricts significantly near the end, only allowing one vehicle to pass at once. This constriction can cause difficulties exiting for vehicles in the left drop-off lane.

### Sight Visibility Challenges

### **Comments:**

The left sight line for turning on to Timbervale Trail from the northern access to the parking lot is obstructed by a tree.

### **Congestion Areas**

### **Comments:**

W Timbervale Trail becomes congested in the northbound direction, approaching S Westridge Knolls Ave. The queue length for this approach was estimated to be as long as 200 ft at its peak.

### **General Traffic Observations**

### **Comments:**

The weather at the time of observation was approximately 35° and sunny. The sidewalks were mostly clear of snow. However, some snow present on the sides of the road may have made crossing the road more difficult for pedestrians.



# **TRAFFIC OBSERVATION REPORT**

Project Name DCSD Traff	ïc Study	Project No.	1124175					
<b>Observer</b> Nate Hittle								
Location Eldorado Ele	ementary School							
<b>Time</b> 3:30 PM		AM / PM	DATE M T	November 11, 2 W Th F S	2024 S S			
Queueing Data								
Start Time: 3:10 PM								
End Time: 3:40 PM								
Maximum Queueing Length:	670 ft							
Total Storage Length Available:	450 ft							

### **Comments:**

Vehicles began arriving to the parking lot around 3:00 PM and parked in parking spaces. The lot was completely full by 3:20. Vehicles began parking outside of parking spots, but did not obstruct the flow of traffic. As the queue approached the southern access to W Timbervale Trail, cars began turning around. Eventually, the queue backed up into Timbervale Trail and extended to W Mulberry Ln.

### **On-Street Parking Locations and Availability**

### **Comments:**

On-street parking is provided on both sides of W Timbervale Trail. Both sides of the street were utilized for parking. On-street parking was available on S Westridge Knolls Avenue adjacent to the bike lane. The cars parked in this area partially obstructed the bike lane. This was likely due to the snow on the side of the road taking up space in the parking lane. On-street parking was also available on some of the side streets, but it did not appear that these spaces were utilized.

### **Crosswalk Locations and Usage**

### **Comments:**

Crosswalks were located at various locations around the school. The most used crosswalks existed at the intersection of Timbervale Trail and S Westridge Knolls Ave, and at the exit of the parking lot on W Timbervale Trail. Crossing guards were present at both of these locations. Pedestrians with cars parked on the west side of W Timbervale Trail often did not use a crosswalk.



### **Roadway Characteristics**

### **Speed Limit(s) and Location(s):**

The speed limits on S Westridge Knolls Ave and W Timbervale Trail are respectively 30 and 25 mph. The school zone speed limit is 15 mph on both streets.

### Signage:

Signage present on the public roads includes speed limit signs, school zone speed limit signs, stop signs, No Parking signs, school crossing signs, "No U turns in School Zone" signs, and bike lane signs. One-way signs, 10 mph speed advisory signs, and student drop-off signs were present within the parking lot.

### **Bike Lanes:**

Bike lanes are present on S Westridge Knolls Ave. As previously mentioned parked vehicles often impeded this lane,

### **Other Comments:**

The drop-off lane constricts significantly near the end, only allowing one vehicle to pass at once. This constriction can cause difficulties exiting for vehicles in the left drop-off lane.

### Sight Visibility Challenges

### **Comments:**

The left sight line for turning on to Timbervale Trail from the northern access to the parking lot is obstructed by a tree.

### **Congestion Areas**

### **Comments:**

W Timbervale Trail becomes congested in the northbound direction, approaching S Westridge Knolls Ave. The queue length for this approach was estimated to be 250 ft at its peak. There was also an instance of congestion on southbound Timbervale Trail, which was caused by cars attempting to turn left into the parking lot.

### **General Traffic Observations**

### **Comments:**

The weather at the time of observation was approximately  $55^{\circ}$  and sunny. The sidewalks were mostly clear of snow. However, some snow present on the sides of the road may have made crossing the road more difficult for pedestrians.


# **TRAFFIC OBSERVATION REPORT**

Project Name DCSD Traff	fic Study		Project No.	1124175					
<b>Observer</b> Nate Hittle									
<b>Location</b> Trailblazer I	Elementary School								
<b>Time</b> 7:45 - 9:15	AM	I	AM / PM	DATE	##	#			
				Μ	' W	7 Th	F	S	S
	Quei	ueing 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 Traff	fic Study	Project No.	1124175					
Observer Nick Westpl	hal							
<b>Location</b> Trailblazer I	Elementary School							
<b>Time</b> 2:45 - 4:00 I	PM	AM / PM	DATE		19-1	Nov-	24	
			M T	W	Th	F	S	S
	Quei	ueing 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 pleanty 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: 46 DESERT WILLOW RD & W HIGHLANDS RANCH PKWY AM Date: Wednesday, November 13, 2024 Peak Hour: 07:30 AM - 08:30 AM Peak 15-Minutes: 07:30 AM - 07:45 AM

#### **Peak Hour - Motorized Vehicles**





**Peak Hour - Bicycles** 



**Peak Hour - Pedestrians** 

Note: Total study counts contained in parentheses.

	W HIG	HLAN	DS RA	NCH	W HIG	HLAND	OS RANO	СН	DES	ERT WI	LLOW	RD	DES	ERT W	/ILLOW	RD						
Interval		East	Wind			MBRAD	6 <sup>y</sup> und			Northb	ound			South	bound			Rolling	Ped	lestriar	1 Crossir	ngs
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru F	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total	Hour	West	East	South !	North
7:30 AM	0	17	378	25	0	7	152	1	0	21	1	18	0	7	2	10	639	2,134	0	0	0	0
7:45 AM	0	5	304	10	0	3	144	3	0	7	1	25	0	8	2	3	515	2,087	0	0	0	0
8:00 AM	0	4	241	17	0	6	136	3	0	11	0	13	0	4	3	6	444	2,068	0	1	1	0
8:15 AM	0	9	275	28	0	7	134	9	0	10	6	19	0	2	28	9	536	2,056	0	3	0	1
8:30 AM	0	5	310	15	0	6	153	3	0	25	24	26	0	4	11	10	592	1,911	1	1	1	0
8:45 AM	0	9	254	4	0	7	182	3	0	17	1	10	0	4	0	5	496		0	0	1	1
9:00 AM	0	4	207	5	0	8	168	8	0	13	0	10	0	4	1	4	432		0	0	0	0
9:15 AM	0	2	188	8	0	6	157	2	0	5	1	16	0	0	1	5	391		0	1	0	1
Count Total	0	55	2,157	112	0	50	1,226	32	0	109	34	137	0	33	48	52	4,045	5	1	6	3	3
 Peak Hour	0	35	1,198	80	0	23	566	16	0	49	8	75	0	2	1 35	5 2	8 2,13	34	0	4	1	1



Location: 46 DESERT WILLOW RD & W HIGHLANDS RANCH 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.

	W HIG	HLAN	IDS RA	NCH	W HIG	HLAND	OS RAN	СН	DES	ERT WI	LLOW	RD	DES	ERT W	/ILLOW	/ RD						
Interval		East	Wind			MBR40	bund			Northb	ound			South	bound			Rolling	Pec	lestriar	1 Crossir	ngs
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total	Hour	West	East	South	North
2:30 PM	0	4	168	6	1	14	249	5	0	19	1	8	0	4	0	8	487	2,455	0	0	1	1
2:45 PM	0	15	290	19	0	6	238	9	0	11	2	7	0	4	4	10	615	2,684	0	1	1	0
3:00 PM	0	22	331	32	0	22	232	12	0	15	1	10	0	7	6	10	700	2,700	1	0	2	1
3:15 PM	0	13	249	25	0	16	281	6	0	11	2	14	0	4	18	14	653	2,589	2	4	0	1
3:30 PM	0	19	288	20	0	17	260	11	0	33	26	18	0	8	7	9	716	2,458	2	0	0	2
3:45 PM	0	11	266	11	0	12	270	11	0	13	5	16	0	10	2	4	631		2	7	0	0
4:00 PM	0	14	241	16	0	17	253	7	0	9	4	15	0	2	2	9	589		1	0	0	0
4:15 PM	1	10	178	11	0	12	258	2	0	13	2	15	0	5	5	10	522		0	2	1	0
Count Total	1	108	2,011	140	1	116	2,041	63	0	124	43	103	0	44	44	74	4,913		8	14	5	5
 Peak Hour	0	65	1,134	88	0	67	1,043	40	0	72	34	58	3 0	29	9 33	3 3	7 2,70	00	7	11	2	4



Location: 48 W TIMBERVALE TRAIL & N ELDORADO PARKING 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.

	N ELD	ORAD	O PAR	KING	N ELD	ORADO	) PAR	KING	W TI	MBERV	ALE TI	RAIL	W TI	MBERV	'ALE T	RAIL						
Interval		₽£666	ବିଶିନ୍ଧିର			<b>W6St</b>	ର୍ଭ୍ୟିଲd			Northb	ound			South	bound			Rolling	Pec	lestriar	n Crossi	ngs
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total	Hour	West	East	South	North
7:45 AM	0	0	0	0	0	0	0	5	0	0	13	0	0	0	25	0	43	331	0	0	0	0
8:00 AM	0	0	0	0	0	1	0	3	0	0	13	0	0	0	23	0	40	316	0	0	0	0
8:15 AM	0	0	0	0	0	3	0	19	0	0	14	0	0	0	53	0	89	292	3	5	0	0
8:30 AM	0	0	0	0	0	16	0	52	0	0	40	0	0	0	51	0	159		0	27	0	0
8:45 AM	0	0	0	0	0	0	0	4	0	0	20	0	0	0	4	0	28		0	0	0	0
9:00 AM	0	0	0	0	0	0	0	1	0	0	10	0	0	0	5	0	16		0	0	0	0
Count Total	0	0	0	0	0	20	C	) 84	0	0	110	) 0	0	0	161	0	375		3	32	0	0
 Peak Hour	0	0	0	0	0	20	0	79	0	0	80	) (	0 0	0	152	2	0 33	31	3	32	0	0



Location: 48 W TIMBERVALE TRAIL & N ELDORADO PARKING 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.

	N ELD	ORAD	O PAR	KING	N ELDO	ORADO	) PARK	NG	W TI	MBERV	ALE T	RAIL	W TI	MBER	ALE T	RAIL						
Interval		₽£G(6	55isd			₩6£{6	ର୍ଦ୍ଦିନd			Northb	ound			South	bound			Rolling	Ped	lestriar	n Crossi	ngs
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru I	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total	Hour	West	East	South	North
 2:45 PM	0	0	0	0	0	0	0	0	0	0	7	0	1	0	12	0	20	270	3	0	0	0
3:00 PM	0	0	0	0	0	1	0	0	0	0	12	0	0	0	38	0	51	289	2	0	0	0
3:15 PM	0	0	0	0	0	6	0	4	0	0	9	0	1	0	63	0	83	285	6	20	5	6
3:30 PM	0	0	0	0	0	9	0	43	0	0	37	0	0	0	27	0	116		14	26	3	21
3:45 PM	0	0	0	0	0	2	0	10	0	0	17	0	0	0	10	0	39		1	5	0	3
4:00 PM	0	0	0	0	0	0	0	10	0	0	17	0	0	0	20	0	47		5	8	0	4
Count Total	0	0	0	0	0	18	0	67	0	0	99	0	2	0	170	C	) 356		31	59	8	34
 Peak Hour	0	0	0	0	0	18	0	57	0	0	75	5 0	) 1	(	) 138	3	0 28	39	23	51	8	30



Location: 50 W TIMBERVALE TRAIL & S WESTRIDGE KNOLLS AVE 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.

	S WEST	RIDGE	KNOL	LSAVE	S WESTF	RIDGE	KNOLLS	S AVE	W TI	MBERV	ALE TR	RAIL	W TI	MBER\	/ALE T	RAIL						
Interval		Eastb	ound			Westb	ound			Northb	ound			South	bound			Rolling	Pec	lestriar	n Crossi	ngs
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru F	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total	Hour	West	East	South	North
7:45 AM	0	0	11	9	0	16	5	0	0	6	0	12	0	0	0	0	59	402	0	0	0	1
8:00 AM	0	0	13	7	0	16	7	0	0	5	0	11	0	0	0	0	59	386	0	1	1	2
8:15 AM	0	0	17	37	0	18	7	0	0	17	0	12	0	0	0	0	108	351	2	8	0	10
8:30 AM	0	0	16	28	0	22	16	0	0	37	0	57	0	0	0	0	176		0	7	6	7
8:45 AM	0	0	10	1	0	3	3	0	0	11	0	15	0	0	0	0	43		0	0	0	0
9:00 AM	0	0	3	2	0	3	5	0	0	6	0	5	0	0	0	0	24		0	0	0	1
Count Total	0	0	70	84	0	78	43	0	0	82	0	112	0	0	0	C	) 469	)	2	16	7	21
 Peak Hour	0	0	57	81	0	72	35	0	0	65	0	92	2 0	(	) (	)	0 40	02	2	16	7	20



Location: 50 W TIMBERVALE TRAIL & S WESTRIDGE KNOLLS AVE 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.

	S WEST	RIDGE	KNOL	LS AVE	S WESTR	IDGE	KNOLLS	S AVE	W TI	<b>IBERV</b>	ALE TR	RAIL	W TI	MBER\	/ALE T	RAIL						
Interval		Eastb	ound			Westb	ound			Northb	ound			South	bound			Rolling	Ped	lestriar	n Crossii	ngs
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru F	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total	Hour	West	East	South	North
 2:45 PM	0	0	9	7	0	7	10	0	0	5	0	2	0	0	0	0	40	349	0	0	0	0
3:00 PM	0	0	12	26	0	14	14	0	0	7	0	4	0	0	0	0	77	361	1	0	1	0
3:15 PM	0	0	15	39	1	32	12	0	0	5	0	6	0	0	0	0	110	355	3	3	8	5
3:30 PM	0	0	11	10	0	11	5	0	0	43	0	42	0	0	0	0	122		1	9	15	6
3:45 PM	0	0	6	6	0	2	10	0	0	10	0	18	0	0	0	0	52		0	5	1	7
4:00 PM	0	0	14	5	0	14	11	0	0	9	0	18	0	0	0	0	71		0	0	0	5
Count Total	0	0	67	93	1	80	62	0	0	79	0	90	0	0	0	C	) 472		5	17	25	23
 Peak Hour	0	0	44	81	1	59	41	0	0	65	C	70	) 0	(	) (	C	0 36	61	5	17	25	18



Location: 51 E ELDORADO BUS ACCESS & S WESTRIDGE KNOLLS AVE 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**

S WESTRIDGE KNOLLS AVES WESTRIDGE KNOLLS AVE E ELDORADO BUS ACCESS E ELDORADO BUS ACCESS

	Interval		Eastb	ound			Westb	ound			Northb	ound			South	bound			Rolling	Ped	lestriar	n Crossii	ngs
	Start Time	U-Turn	Left	Thru	Right	U-Turr	Left	Thru R	ight	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total	Hour	West	East	South	North
	7:45 AM	0	0	22	1	1	4	21	0	0	0	0	0	0	0	0	0	49	280	0	0	0	1
	8:00 AM	0	0	21	3	0	0	23	0	0	0	0	0	0	0	0	0	47	262	0	0	2	1
	8:15 AM	0	0	21	7	0	14	27	0	0	0	0	0	0	0	0	0	69	231	0	0	0	0
	8:30 AM	0	0	63	11	0	5	36	0	0	0	0	0	0	0	0	0	115		0	0	3	0
	8:45 AM	0	0	24	0	0	1	6	0	0	0	0	0	0	0	0	0	31		0	0	0	0
	9:00 AM	0	0	8	0	0	0	8	0	0	0	0	0	0	0	0	0	16		0	0	0	1
С	ount Total	0	0	159	22	1	24	121	0	0	0	0	0	0	0	0	(	) 327	,	0	0	5	3
F	Peak Hour	0	0	127	22	1	23	107	0	0	0	0	0 0	) 0	(	) (	)	0 28	80	0	0	5	2



Location: 51 E ELDORADO BUS ACCESS & S WESTRIDGE KNOLLS AVE PM Date: Wednesday, November 13, 2024 Peak Hour: 03:15 PM - 04:15 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**

S WESTRIDGE KNOLLS AVES WESTRIDGE KNOLLS AVE E ELDORADO BUS ACCESS E ELDORADO BUS ACCESS

		0							• · · · -	0			00200			200.1	00200						
	Interval		Eastb	ound			Westb	ound			Northb	ound		_	South	bound			Rolling	Ped	lestriar	n Crossir	igs
_	Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total	Hour	West	East	South	North
	2:45 PM	0	0	10	1	0	1	16	0	0	1	0	0	0	0	0	0	29	218	0	0	0	0
	3:00 PM	0	0	15	1	1	1	28	0	0	0	0	0	0	0	0	0	46	226	0	0	1	0
	3:15 PM	0	0	20	1	0	5	45	0	0	0	0	0	0	0	0	0	71	240	0	0	1	2
	3:30 PM	0	0	53	1	0	2	16	0	0	0	0	0	0	0	0	0	72		0	0	3	3
	3:45 PM	0	0	21	3	0	0	13	0	0	0	0	0	0	0	0	0	37		0	0	2	2
	4:00 PM	0	0	31	1	0	4	24	0	0	0	0	0	0	0	0	0	60		1	0	10	2
	Count Total	0	0	150	8	1	13	142	0	0	1	0	0	0	0	0	C	315		1	0	17	9
	Peak Hour	0	0	125	6	0	11	98	0	0	0	0	0	0	(	) (	0	0 24	0	1	0	16	9



Location: 52 W ELDORADO BUS ACCESS & S WESTRIDGE KNOLLS AVE 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**

S WESTRIDGE KNOLLS AVES WESTRIDGE KNOLLS AVE W ELDORADO BUS ACCESSW ELDORADO BUS ACCESS

	Interval		Eastb	ound			Westb	ound			Northb	ound			South	bound			Rolling	Ped	lestriar	n Crossir	ngs
S	tart Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru F	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total	Hour	West	East	South	North
7	7:45 AM	0	0	23	0	0	0	25	0	0	1	0	3	0	0	0	0	52	284	0	0	0	1
8	3:00 AM	0	0	21	0	0	0	22	0	0	1	0	2	0	0	0	0	46	263	0	0	0	1
8	3:15 AM	0	0	21	0	0	0	35	0	0	6	0	6	0	0	0	0	68	235	0	0	2	0
8	3:30 AM	0	0	63	0	0	0	32	0	0	9	0	14	0	0	0	0	118		0	0	0	0
8	3:45 AM	0	0	24	0	0	0	7	0	0	0	0	0	0	0	0	0	31		0	0	0	0
ç	9:00 AM	0	0	8	0	0	0	8	0	0	0	0	2	0	0	0	0	18		0	1	0	0
Cour	nt Total	0	0	160	0	0	0	129	0	0	17	0	27	0	0	0	C	) 333		0	1	2	2
Pea	ak Hour	0	0	128	0	0	0	114	0	0	17	0	25	0	(	) (	C	0 28	34	0	0	2	2



Location: 52 W ELDORADO BUS ACCESS & S WESTRIDGE KNOLLS AVE PM Date: Wednesday, November 13, 2024 Peak Hour: 03:15 PM - 04:15 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**

S WESTRIDGE KNOLLS AVES WESTRIDGE KNOLLS AVE W ELDORADO BUS ACCESSW ELDORADO BUS ACCESS

	0=0							· · · · -				00100	=== 0				·					
Interval		Eastb	ound			Westb	ound			Northb	ound			South	bound			Rolling	Ped	lestriar	n Crossi	ngs
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total	Hour	West	East	South	North
2:45 PM	0	0	10	0	0	0	17	0	0	0	0	0	0	0	0	0	27	219	0	0	0	0
3:00 PM	0	0	16	0	0	0	30	0	0	0	0	0	0	0	0	0	46	228	0	0	1	4
3:15 PM	0	0	18	0	0	0	49	0	0	1	0	0	0	0	0	0	68	242	0	0	0	2
3:30 PM	0	0	55	0	0	0	16	0	0	2	0	5	0	0	0	0	78		0	0	0	3
3:45 PM	0	0	21	0	0	0	9	0	0	5	0	1	0	0	0	0	36		0	0	1	1
4:00 PM	0	0	31	0	0	0	26	0	0	1	0	2	0	0	0	0	60		0	0	1	1
Count Total	0	0	151	0	0	0	147	0	0	9	0	8	0	0	0	C	) 315		0	0	3	11
Peak Hour	0	0	125	0	0	0	100	0	0	9	0	8	0	(	) (	)	0 24	2	0	0	2	7



Location: 53 W TIMBERVALE TRAIL & S ELDORADO PARKING 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.

	S ELD	ORAD	O PAR	KING	S ELDO	RADO	) PARKI	NG	W TI	MBERV	ALE TI	RAIL	W TI	<b>MBERV</b>	ALE T	RAIL						
Interval		₽£G66	56isd			₩6£{6	Scind			Northb	ound		_	South	bound			Rolling	Ped	lestriar	n Crossi	ngs
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru F	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total	Hour	West	East	South	North
7:45 AM	0	3	0	0	0	0	0	0	0	0	11	0	0	18	7	0	39	296	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	12	0	0	15	8	0	35	283	0	0	3	0
8:15 AM	0	4	0	0	0	1	0	0	0	0	10	16	2	40	10	0	83	264	2	0	21	0
8:30 AM	0	1	0	1	0	6	0	19	0	2	18	22	0	46	19	5	139		3	0	17	1
8:45 AM	0	0	0	0	0	1	0	1	0	0	19	0	0	0	5	0	26		0	0	0	0
9:00 AM	0	1	0	0	0	1	0	0	0	0	9	0	0	1	4	0	16		0	0	0	0
Count Total	0	9	0	1	0	9	0	20	0	2	79	38	2	120	53	5	5 338		5	0	41	1
 Peak Hour	0	8	0	1	0	7	0	19	0	2	51	38	2	119	) 44	4	5 29	96	5	0	41	1



Location: 53 W TIMBERVALE TRAIL & S ELDORADO PARKING 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.

	S ELD	ORAD	O PAR	KING	S ELDO	RADO	) PARKI	NG	W TI	MBERV	ALE TR	RAIL	W TI	MBER\	ALE T	RAIL						
Interval		₽£GG	ə Şişd			W6Stb	ର୍ଦ୍ଦିନd			Northb	ound			South	bound			Rolling	Ped	lestriar	n Crossir	ngs
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru F	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total	Hour	West	East	South	North
 2:45 PM	0	0	0	0	0	0	0	0	0	0	7	0	1	0	10	0	18	249	3	0	0	0
3:00 PM	0	1	1	0	0	0	0	0	0	0	13	1	0	19	20	1	56	263	6	0	0	0
3:15 PM	0	1	0	0	0	0	0	0	0	2	9	15	1	42	16	1	87	246	6	1	7	0
3:30 PM	0	1	1	1	0	5	0	19	0	0	11	6	0	8	24	12	88		11	4	36	1
3:45 PM	0	0	0	0	0	2	0	1	0	0	16	1	0	0	10	2	32		3	0	7	0
4:00 PM	0	0	0	1	0	2	0	4	0	0	13	0	0	0	19	0	39		1	8	2	0
Count Total	0	3	2	2	0	9	0	24	0	2	69	23	2	69	99	16	320		30	13	52	1
 Peak Hour	0	3	2	1	0	7	0	20	0	2	49	23	3 1	69	) 7(	) 1	6 26	63	26	5	50	1



Location: 42 S 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 - Bicycles** 

#### **Peak Hour - Motorized Vehicles**







**Peak Hour - Pedestrians** 

Note: Total study counts contained in parentheses.

	SH	ACKBI	ERRY	ST	S HA	ACKBE	RRY ST	Г	S SF	RINGH	IILL PK	WY	S SF	PRING	HILL PP	ίWΥ						
Interval		Eastb	ound			Westb	ound			Northb	ound			South	bound			Rolling	Pec	lestriar	n Crossir	ngs
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru F	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total	Hour	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	0	0	1
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	i 12	. 0	0	12	3	295		2	0	1	4
 Peak Hour	0	42	29	57	0	16	10	39	0	14	- 33	3 9	9 0	(	) 12	2	3 26	64	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 - Bicycles** 

#### **Peak Hour - Motorized Vehicles**







**Peak Hour - Pedestrians** 

Note: Total study counts contained in parentheses.

	SH	ACKBI	ERRY	ST	S HA	ACKBE	RRY ST		S SF	RINGH	IILL PK	WY	S SF	PRING	HILL Pł	ΚWY						
Interval		Eastb	ound			Westb	ound			Northb	ound			South	bound			Rolling	Pec	lestriar	n Crossir	ngs
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru F	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total	Hour	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	1	3	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	C	) 319		2	22	5	10
 Peak Hour	0	29	14	34	0	14	11	13	0	50	34	20	) 0	(	) 42	2	0 26	61	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 - Bicycles** 

#### **Peak Hour - Motorized Vehicles**







**Peak Hour - Pedestrians** 

Note: Total study counts contained in parentheses.

	SH	ACKBI	ERRY	ST	S HA	ACKBE	RRY ST	-	SPI	RINGHI	LL PKV	NY	SP	RINGH	ILL PK	NY						
Interval		Eastb	ound			Westb	ound			Northb	ound			South	bound			Rolling	Pec	lestriar	n Crossi	ngs
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru F	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total	Hour	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	C	) 17	0	56	5 12	2 2	6 2´	10	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 - Bicycles** 

#### **Peak Hour - Motorized Vehicles**







**Peak Hour - Pedestrians** 

Note: Total study counts contained in parentheses.

	SH	ST	S HA	ACKBE	RRY ST	Г	SPI	RINGHI	LL PKV	NY	SP	RINGH	ILL PK	NY								
Interval		Eastb	ound			Westb	ound			Northb	ound			South	bound			Rolling	Pec	lestriar	n Crossi	ngs
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru I	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total	Hour	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	C	) 15	5 0	2	1 12	2 1	2 18	89	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.

	N TR	AILBL	AZER E	BUS	N TRA	AILBLA	ZER BL	JS	SF	IACKBE	ERRY	ST	SF	IACKB	ERRY	ST						
Interval		₽£G6	5 Si Sid			<b>M6515</b>	ର୍ଦ୍ଦିନd			Northb	ound		_	South	bound			Rolling	Ped	lestriar	n Crossii	ngs
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru I	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total	Hour	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	C	) 144		4	4	0	1
 Peak Hour	0	0	0	0	0	16	0	12	0	0	49	) (	0	(	) 44	1	0 12	21	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.

		N TR	BUS	N TRA	ILBLA	ZER B	US	SH	ACKBE	ERRY	ST	SH	ACKB	ERRY	ST								
	Interval		₽£G6	5 Si Sid			<b>W6&amp;</b> 6	ର୍ଦ୍ଦିକାd			Northb	ound			South	bound			Rolling	Peo	lestriar	n Crossi	ngs
	Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	ı Right	U-Turn	Left	Thru	Right	Total	Hour	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	2 0	1	0	59	C	152		8	11	1	13
	Peak Hour	0	0	0	0	0	14	0	5	0	0	49	9 0	) 1	(	) 48	3	0 11	17	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.

	S TR	AILBL/	AZER I	BUS	S TR/	AILBLA	ZER Bl	JS	SH	ACKBI	ERRY	ST	SH	ACKB	ERRY	ST						
Interval		₽£666	56i6d			<b>Weste</b>	Sind			Northb	ound			South	bound			Rolling	Pec	lestriar	1 Crossir	ngs
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total	Hour	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	5 16	2	11	47	·	170	)	13	5	28	1
 Peak Hour	1	1	2	7	0	0	0	0	0	8	47	7 15	5 2	11	1 43	3	4 1	41	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.

		S TR	BUS	S TRA	AILBLA	ZER B	US	SH	ACKBE	ERRY	ST	SH	ACKB	ERRY	ST								
	Interval		₽£G(6	ବିଶିନ୍ଧିର			₩6£{6	& Ind			Northb	ound			South	bound			Rolling	Ped	lestriar	n Crossii	ngs
	Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total	Hour	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	i 13	0	5	68	2	182		10	12	35	0
	Peak Hour	0	3	1	2	0	0	0	0	0	8	44	l 13	8 0	Ę	5 56	6	1 13	33	8	9	31	0



# Appendix C Existing Traffic Signal Timing Plans

### Timing Sheet

### Station: 100 - HR Pkwy & Desert Willow/Westridge Knolls (Standard File)

#### Phase [1.1.1]

	<b>φ</b> 1	¢2	<b>¢</b> 3	<b>¢</b> 4	<b>φ</b> 5	<b>¢</b> 6	<b>φ</b> 7	<b>\$8</b>	<b>φ</b> 9	<b>φ</b> 10	<b>φ</b> 11	<b>φ</b> 12	<b>¢</b> 13	<b>¢</b> 14	<b>¢</b> 15	<b>¢</b> 16
		(ET)		(81)		(WT)		(NT)								
Walk	0	5	0	5	0	5	0	5	0	0	0	0	0	0	0	0
Ped Clearance	0	10	0	22	0	10	0	22	0	0	0	0	0	0	0	0
Min Green	0	25	0	5	0	25	0	5	0	0	0	0	0	0	0	0
Gap Ext	0	3	0	2	0	3	0	2	0	0	0	0	0	0	0	0
Max1	0	45	0	25	0	45	0	45	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	0	4.5	0	3	0	4.5	0	3	3	3	3	3	3	3	3	3
Red Clr	0	2	0	2	0	2	0	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]

	<b>φ</b> 1	<b>φ</b> 2	<b>¢</b> 3	<b>φ</b> 4	<b>φ</b> 5	<b>¢</b> 6	<b>φ</b> 7	<b>¢</b> 8	<b>φ</b> 9	<b>φ</b> 10	<b>ø</b> 11	<b>φ</b> 12	<b>¢</b> 13	<b>¢</b> 14	<b>¢</b> 15	<b>¢</b> 16
		(ET)		(ST)		(WT)		(NT)								
Enable		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									
Guar Passage																
Rest In Walk		ON				ON										
Cond Service																
Add Init Calc																

## Phase Option+ [1.1.3]/[1.1.5]

	<b>φ</b> 1	<b>φ</b> 2	<b>\$</b> 3	<b>φ</b> 4	<b>φ</b> 5	<b>\$</b> 6	<b>φ</b> 7	<b>\$</b>	<b>φ</b> 9	<b>φ</b> 10	<b>ø</b> 11	<b>ø</b> 12	<b>ø</b> 13	<b>φ</b> 14	<b>¢</b> 15	<b>¢</b> 16
Reservice																
Ped Clr Thru Yellow																
Skip Red-NoCall																
Red Rest						1				1						
Max 2																
Max Inhibit																
Ped Delay																
Red Rest On Gap																
Conflicting P																
Green Ped Delay Time																
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

#### Douglas County

#### Timing Sheet

#### Station: 100 - HR Pkwy & Desert Willow/Westridge Knolls (Standard File)

#### Ring Sequence [1.2.4]

Ring	P1	P2	P3	P4	P5	P6	P7	P8
Ring 1	1	2	3	4				
Ring 2	5	6	7	8				
Ring 3								
Ring 4								

#### Unit Parameters [1.2.1]

StartUp Flash	Auto Ped Clear	Red Revert	Local Flash Start	Allow < 3 sec Yel	Allow Skip Yel	MCE Timeout	Enable Run	Start Red Time	Phase Mode	Startup Calls	Diamond Mode	Stop Time Over Preempt	Free Ring Sequence	Clearance Decide	Min Ped Clear Time	RingAlgo
	OFF	5	RST	OFF	OFF		ON	6	STD8	OFF	4PH	OFF	1	OFF	OFF	

#### Alarms, Parameters [1.4.1]

Auto Flash Parameter

Yellow	Red	Mode	Source
	60		

### Detector, Vehicle Parameters 1-16 [5.1]

Detector #	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Yellow Lock																
Red Lock																
Extend	ON	ON	ON	ON	ON		ON	ON	ON	ON	ON		ON	ON	ON	ON
Added Initial																
Call	ON	ON	ON	ON		ON	ON	ON	ON	ON		ON	ON	ON	ON	ON
Call Phase	1	2	2	2	2	2	3	4	4	4	4	4	1	3	5	6
Switch Phase	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Delay Time	0	0	0	0	0	0	0	7.5	0	3	0	0	0	0	0	0

### Detector, Vehicle Parameters 17-32 [5.1]

Detector #	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
Yellow Lock																
Red Lock																
Extend	ON	ON	ON		ON	ON	ON	ON	ON		ON	ON				
Added Initial																
Call	ON	ON		ON	ON	ON	ON	ON		ON	ON	ON				
Call Phase	6	6	6	6	7	8	8	8	8	8	5	7	0	0	0	0
Switch Phase	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Delay Time	0	0	0	0	0	7.5	0	3	0	0	0	0	0	0	0	0

#### Detector, Ped Detectors 1-16 [5.4]

,				-												
Detector	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Call Phase	0	2	0	4	0	6	0	8								
No Activity	0	0	0	0	0	0	0	0								
Max Presence	15	15	15	15	15	15	15	15								
Erratic Cnt	0	0	0	0	0	0	0	0								

#### Douglas County

#### Timing Sheet

#### Station: 100 - HR Pkwy & Desert Willow/Westridge Knolls (Standard File)

#### 1 2 3 4 5 6 7 19 20 22 23 24 Channel 8 10 11 12 13 14 15 16 17 18 21 9 PH/OLP # 1 2 3 4 5 6 7 8 1 2 3 4 2 4 6 8 1 3 5 Type Flash Alt Hz Dimming Green Dimming Yellow Dimming Red Dimming Cyc + +++++ +

#### Channels/SDLC, Assign to Phases [1.8.1]

#### Channel/SDLC +, Assign to Phases [1.8.4]

. ,		2			-																			-
Channel	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	10	21	22	23	24
Flash Red																								
Flash Yellow																								
Flash Green																								
Inh Red Flash in Preempt																								
Color Flash Rate	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Override Type	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Olap Ovrd	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

#### Overlap General Parameters [1.5.1]

		.1		
Conflict Lock	Lock Inhibit	Program Card	Use Parent	Canadian Fast Flash
OFF	OFF	ON	ALWAYS	

#### Overlap Program Parameters [1.5.2.1]

Overlap		Iı	nclude	d Phas	es			N	lodifer	Phase	es		Туре	Green	Yellow	Red
Overlap 1													-GRYEL		3.5	1.5
Overlap 2													-GRYEL		3.5	1.5
Overlap 3													NORMAL		3.5	1.5
Overlap 4													NORMAL		3.5	1.5
Overlap 5													NORMAL		3.5	1.5
Overlap 6													NORMAL		3.5	1.5
Overlap 7													NORMAL		3.5	1.5
Overlap 8													NORMAL		3.5	1.5

#### Overlap Conflict Parameters+ [1.5.2.2]

Overlap		Co	nflicti	ng Pha	ases			Con	flictin	g Over	laps			C	onflict	ing Pe	ds	
Overlap 1																		
Overlap 2																		
Overlap 3																		
Overlap 4																		
Overlap 5																		
Overlap 6																		
Overlap 7																		
Overlap 8																		

#### Overlap Program Parameters+ [1.5.2.3]

#	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Leading Green																
FYA MCE Disable																
FYA After Preempt																
FYA Skip Red																
PedCallClear																
FYA ImmedReturn																
FYARedB4Ped																
Transit Input	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FYA Delay Time	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FYA Ext Overlap	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
GrnExtInh 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
GrnExtInh 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
GrnExtInh 3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
GrnExtInh 4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
GrnExtInh 5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
GrnExtInh 6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
GrnExtInh 7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
GrnExtInh 8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear Time	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FYAGapMin	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FYAGapMax	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

FYAGapExt	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FYAGapDet1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FYAGapDet2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FYAGapDet3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FYAGapDet4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

### Station: 100 - HR Pkwy & Desert Willow/Westridge Knolls (Standard File)

Preemption	Times[3.1	1/Phases[	3.21/0	otionsl	3.31	
		//	<u> </u>		0.01	

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

	-	-	-			
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	6	4
Dwell Cyc Veh 2	0	0	0	8	0	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	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

[3.6]			-			
Preempt	1	2	3	4	5	6
Enable			ON	ON	ON	ON
Туре	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

|--|

Coordination, Modes,+ [2.1] Modes

Modes+

Operational	Correct	Maximum	Force-Off	Mode	Leave	Leave	Recycle	Stop In	External	Auto Reset	Latch Sec	Coord Easy	Yield	Coord NTCIP Vield	Closed Loop	
	SHRT/LNG	MAX INH	FLOAT		Delore	mu		Walk		neset	Foff	Float	value	Sign	Active	
														Sign		
				RESERVED	TIMED	TIMED	NO_RECYCLE	ON	OFF	ON	OFF	OFF	0	+	ON	OFF

#### Coordination, Pattern 1-16 [2.4]

	,		- L1													
Pattern	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Cycle Time	120	120	100													
Offset Time	35	78	74													
Split Number	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Seq Number	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

### Coordination, Pattern 17-32 [2.4]

				-												
Pattern	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
Cycle Time																
Offset Time																
Split Number	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
Seq Number	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

#### Coordination, Pattern+ 1-8 [2.5]

Pattern	1	2	3	4	5	6	7	8
Short	10	10	10	10	10	10	10	10
Long	34	34	34	34	34	34	34	34
Dwell								
No Short P 1								
No Short P 2								
No Short P 3								
No Short P 4								
Early Yield								
Offset	ENDGRN							
CNA								
Max 2								
Float								
Min Veh Perm								
Min Ped Perm								
Percentage								
MI								
Ret Hold	ON							
ASC								
Ph Opt Table								
Ph Time Table								
Det Grp								
Call Inh								
Olp Off 1								
Olp Off 2								
Olp Off 3								
Olp Off 4								
Olp Off 5								
Olp Off 6								
Olp Off 7								
Olp Off 8								
Dia Mode	DFT							
Force Mode	DFT							

#### Timing Sheet

### Station: 100 - HR Pkwy & Desert Willow/Westridge Knolls (Standard File)

Pattern	9	10	11	12	13	14	15	16
Short	10	10	10	10	10	10	10	10
Long	34	34	34	34	34	34	34	34
Dwell								
No Short P 1								
No Short P 2								
No Short P 3								
No Short P 4								
Early Yield								
Offset	ENDGRN							
CNA								
Max 2								
Float								
Min Veh Perm								
Min Ped Perm								
Percentage								
MI								
Ret Hold	ON							
ASC								
Ph Opt Table								
Ph Time Table								
Det Grp								
Call Inh								
Olp Off 1								
Olp Off 2								
Olp Off 3								
Olp Off 4								
Olp Off 5								
Olp Off 6								
Olp Off 7								
Olp Off 8								
Dia Mode	DFT							
Force Mode	DFT							

### Coordination, Pattern+ 9-16 [2.5]

### Coordination, Pattern+ 17 - 24 [2.5]

Pattern	17	18	19	20	21	22	23	24
Short	10	10	10	10	10	10	10	10
Long	34	34	34	34	34	34	34	34
Dwell								
No Short P 1								
No Short P 2								
No Short P 3								
No Short P 4								
Early Yield								
Offset	ENDGRN							
CNA								
Max 2								
Float								
Min Veh Perm								
Min Ped Perm								
Percentage								
MI								
Ret Hold	ON							
ASC								
Ph Opt Table								
Ph Time Table								
Det Grp								
Call Inh								
Olp Off 1								
Olp Off 2								
Olp Off 3								
Olp Off 4								
Olp Off 5								
Olp Off 6								
Olp Off 7								
Olp Off 8								
Dia Mode	DFT							
Force Mode	DFT							

### Station: 100 - HR Pkwy & Desert Willow/Westridge Knolls (Standard File)

Coordination	, Splits	5 [2.7.1	]													
Split Table 1	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time		88		32		88		32								
Mode	NON	MAX	NON	NON	NON	MAX	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord Phase		ON														
Sult Table 2	1	1	2	4	5	6	7	0	0	10	11	12	12	14	15	16
Split Table 2	1	2	3	4	3	0	/	22	9	10	- 11	12	15	14	15	10
Mode	NON	MAY	NON	32 NON	NON	MAY	NON	32 NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord Phase	NON	ON	NON	NON	NON	MAA	non	NON	NON	NON	non	NON	NON	NON	NON	NON
Coord Thate	1	011	1	1	1	1	1		1	1	1	1			1	
		-									-		-			
Split Table 3	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time		68		32		68		32								
Mode	NON	MAX	NON	NON	NON	MAX	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord Phase		ON														
Split Table 4	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time																
Mode	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord Phase																
Split Table 5	1	2	2	4	5	6	7	8	0	10	11	12	13	14	15	16
Time	1		5	4	3	0	/	0	,	10	- 11	12	15	14	15	10
Mode	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord Phase	non	non	non	non	non	non	non	non	non	non	non	Holt	non	non	non	non
a 11 m 11 d																
Split Table 6	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Mode Count Phone	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord Phase																
Split Table 7	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time																
Mode	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord Phase																
Split Table 8	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time	-	-				, v		Ű	-	10						10
Mode	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord Phase																
							-	0		10		10	10		17	47
Split Table 9	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Mode	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord Phase	INDIN	NON	NON	INDIN	NON	NON	NON	INDIN	NON	INDIN	NON	NON	NON	INDIN	NON	INDIN
Coord I hase																
Split Table 10	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time																
Mode	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord Phase																
Split Table 11	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time	-	-	-	-	-	-							-		~	÷
Mode	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord Phase																
Sulit Table 12	-			4	F		-	P	0	10	11	12	12	14	15	17
Time	1	2	3	4	5	0	/	ð	9	10	- 11	12	13	14	15	10
Mode	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
ivioue	non	non	INDIN	non	non	non	non	non	non	non	non	non	non	non	NON	non
Coord Phase																

Douglas Count	y					,	Timing	Sheet					11/2	27/2024	10:56	16 AM
Station : 100 -	HR Pkv	wy & D	esert W	illow/W	Vestridg	ge Knol	ls ( Star	ndard Fi	ile)							
Split Table 13	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time																
Mode	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord Phase																
Split Table 14	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time																
Mode Coord Phase	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coold Thase																
		-						-		1 10						
Split Table 15	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Mode	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord Phase					11011						11011		11011		11011	non
Split Table 16	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time		-	5		5		, '	0		10		12	15	14	15	10
Mode	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord Phase																
Split Table 17	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time																
Mode	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord Phase																
Split Table 18	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord Phase	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coold Thate		1														
Split Table 10	1	2	2	4	5	6	7	0	0	10	11	12	12	14	15	16
Time	1		5	4	3	0	/	0	,	10	- 11	12	15	14	13	10
Mode	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord Phase																
Split Table 20	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time																
Mode	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord Phase																
Split Table 21	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Mode	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord Phase	non	NON	non	NON	NON	NON	non	NON	NON	non	NON	NON	NON	NON	NON	non
Split Table 22	1	2	3	4	5	6	7	8	0	10	11	12	13	14	15	16
Time	1		5	-		0		0	,	10	- 11	12	15	14	13	10
Mode	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord Phase																
Split Table 23	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time																
Mode	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord Phase																
Split Table 24	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time	NOV	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Mode Coord Phace	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
		1	1													
Douglas Count	ty						Timing	Sheet					11/	27/2024	10:56	:16 A
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<b>Station :</b> 100 -	HR Pkv	vy & D	esert W	/illow/V	Vestridg	ge Knol	ls ( Staı	ndard Fi	ile)		1		r	1		
Split Table 25	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	10
Time																
Mode	NON	NON	NON	NON	NON	NON	NON	NON	NON	NO						
Coord Phase																
Snlit Table 26	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	1
Time		-		-	5	•	,		<i>,</i>	10		12	10	11	10	
Mode	NON	NON	NON	NON	NON	NON	NON	NON	NON	NO						
Coord Phase	HOIT	non	non	HOIT	non	non	non	HOIT	non	HOIT	non	non	non	non	11011	110
Coold I hase		1	1	1	1	1	1	1	1	1	1	1	1	1		I
Split Table 27	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	1
Time																
Mode	NON	NON	NON	NON	NON	NON	NON	NON	NON	NC						
Coord Phase																
Split Table 28	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	1
Time		-				ů		, v	-	10						
Mode	NON	NON	NON	NON	NON	NON	NON	NON	NON	NC						
Coord Phase														non		
Coord Thuse		1	1	1	1	1	1	1	1	1	1	1	1			
					-		-			10		10	12			
Split Table 29	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	1
lime	NON	NON	NON	NON	NON	NON	NON	NON	NON	NG						
Mode	NON	NON	NON	NON	NON	NON	NON	NON	NON	NC						
Coord Phase																
Split Table 30	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	1
Time			-		-	-		-								
Mode	NON	NON	NON	NON	NON	NON	NON	NON	NON	NC						
Coord Phase																
Split Table 31	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	1
Time																
Mode	NON	NON	NON	NON	NON	NON	NON	NON	NON	NC						
Court Discou																
Coord Phase																
Coord Phase																-
Split Table 32	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	1
Split Table 32 Time	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	1
Split Table 32 Time Mode	1 NON	2 NON	3 NON	4 NON	5 NON	6 NON	7 NON	8 NON	9 NON	10 NON	11 NON	12 NON	13 NON	14 NON	15 NON	1 NO

### Station: 100 - HR Pkwy & Desert Willow/Westridge Knolls (Standard File)

### TB Coor, Advanced Scheduler [4.3]

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	N	on	th		1.4		T		0		N	n	Da	y o	IV	vee	ĸ	г	6	1	<u>y o</u>	1 1	10r	ith		-	0			1	2	2	4	~		7	0		2	4	2	1	4	1.5			0	0	3	1	n	DI
Plan	J	ŀ	M	A	M	J	J	Α	S	0	N	D	S	М	Т	w	Т	F	S	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	D	ay Plan
1	1	1	1	1	1	1	1	1	1	1	1	1	<b>—</b>	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	-	1
2	1	1	1	1	1	1	1	1	1	1	1	1	1			_			1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	-	2
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Douglas County							Fiming	Sheet					11/2	27/2024	4 10:56	:16 AM
Station : 100 - H	R Pkwy	& Des	sert Wi	illow/W	Vestridg	ge Knol	ls ( Staı	ndard Fi	ile)							
Day Plan Table 8	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
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Day Plan Table 9	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
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Day Plan Table 10	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
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Day Plan Table 13	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
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Day Plan Table 14	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
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Day Plan Table 15	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
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Day Plan Table 16	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
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Action																
																·
Day Plan Tabla 19	1	2	2	4	5	6	7	0	0	10	11	12	12	14	15	16
Hour	1	- 2	3	4	3	0	/	0	,	10	- 11	12	15	14	15	10
Minute																
Action																
Dav Plan Table 19	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Hour	<u> </u>	-	-		-											-*
Minute																
Action																
Day Plan Table 20	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Hour																
Minute																
Action																

### Timing Sheet

### Station: 100 - HR Pkwy & Desert Willow/Westridge Knolls (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						
10	10				0	0						
10	10				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						
20	20				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						
3/					0	0						
38					0	0						
40					0	0						
40					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						
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	251				0	0						
99	254				0	0						

#### Douglas County

#### Timing Sheet

#### Station: 100 - HR Pkwy & Desert Willow/Westridge Knolls (Standard File)

Alter	nate	Phas	se Pro	ogram	1, In	terva	al Tim	es [1	.1.6.1	]
Phase	Walk	Ped Clear	Min Green	Passage	Max1	Max2	Yellow	Red Clear	Assign Ph	Bike Clear
1	0	0	0	0	0	0	0	0	0	
2	0	0	0	0	0	0	0	0	0	
3	0	0	0	0	0	0	0	0	0	
4	0	0	0	0	0	0	0	0	0	
5	0	0	0	0	0	0	0	0	0	
6	0	0	0	0	0	0	0	0	0	
7	0	0	0	0	0	0	0	0	0	
8	0	0	0	0	0	0	0	0	0	

### ] Alternate Phase Program 2, Interval Times [1.1.6.1]

Phase	Walk	Ped Clear	Min Green	Passage	Max1	Max2	Yellow	Red Clear	Assign Ph	Bike Clear
1	0	0	0	0	0	0	0	0	0	
2	0	0	0	0	0	0	0	0	0	
3	0	0	0	0	0	0	0	0	0	
4	0	0	0	0	0	0	0	0	0	
5	0	0	0	0	0	0	0	0	0	
6	0	0	0	0	0	0	0	0	0	
7	0	0	0	0	0	0	0	0	0	
8	0	0	0	0	0	0	0	0	0	

### Alternate Phase Program 1, >Phase Options [1,1,6,2]

Column	Non Act1	Lock Call	Soft Recall	Dual Entry	Sim Gap Enb	Guar Pass	RIW	Cond Service	Reservice	Red Rest	Max 2	Ped Delay	Conf Phs1	Conf Phs1	Assign Phase
1		ON			ON									0	0
2		ON			ON									0	0
3		ON			ON									0	0
4		ON			ON									0	0
5		ON			ON									0	0
6		ON			ON									0	0
7		ON			ON									0	0
8		ON			ON									0	0

### Alternate Phase Program 2, Phase Options [1.1.6.2]

Column	Non Act1	Lock Call	Soft Recall	Dual Entry	Sim Gap Enb	Guar Pass	RIW	Cond Service	Reservice	Red Rest	Max 2	Ped Delay	Conf Phs1	Conf Phs1	Assign Phase
1		ON			ON									0	0
2		ON			ON									0	0
3		ON			ON									0	0
4		ON			ON									0	0
5		ON			ON									0	0
6		ON			ON									0	0
7		ON			ON									0	0
8		ON			ON									0	0

### Alternate Phase Program 3, Phase Options [1.1.6.2]

Column	Non Act1	Lock Call	Soft Recall	Dual Entry	Sim Gap Enb	Guar Pass	RIW	Cond Service	Reservice	Red Rest	Max 2	Ped Delay	Conf Phs1	Conf Phs1	Assign Phase
1		ON			ON									0	0
2		ON			ON									0	0
3		ON			ON									0	0
4		ON			ON									0	0
5		ON			ON									0	0
6		ON			ON									0	0
7		ON			ON									0	0
8		ON			ON									0	0

Alternate Phase Program 1, Calls and Redirection
[1.1.6.3]

ENTRY	Ca	ll Pl	nase	s<	From	to	From	to	From	to	From	to	Assigned Ph
1	0	0	0	0	0	0	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0	0	0	0	0	0	0
6	0	0	0	0	0	0	0	0	0	0	0	0	0
7	0	0	0	0	0	0	0	0	0	0	0	0	0
8	0	0	0	0	0	0	0	0	0	0	0	0	0

# Alternate Phase Program 2, Calls and Redirection [1.1.6.3]

ENTRY	0	Call F	Phase	es	From	to	From	to	From	to	From	to	Assigned Ph
1	0	0	0	0	0	0	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0	0	0	0	0	0	0
6	0	0	0	0	0	0	0	0	0	0	0	0	0
7	0	0	0	0	0	0	0	0	0	0	0	0	0
8	0	0	0	0	0	0	0	0	0	0	0	0	0

### Timing Sheet

### Station: 100 - HR Pkwy & Desert Willow/Westridge Knolls (Standard File)

					_		• _ ·									
Detector #	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Volume																
Occupancy																
Yellow Lock																
Red Lock																
Extend																
Added Initial																
Queue																
Call																
Call Phase	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Switch Phase	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Delay Time	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Extend Time	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Queue Limit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
No Activity	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Max Presence	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Erratic Cnt	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Fail Time	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Green Occupancy																
Yellow Occupancy																
Red Occupancy																
Ext Mode	NORM	NORM	NORM	NORM	NORM	NORM	NORM	NORM	NORM	NORM						
Delay Phase 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Delay Phase 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Source	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Det Number	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

### Detector Alternate Program 1, Vehicle Parameters [5.5.1]

#### Detector Alternate Program 2, Vehicle Parameters [5.5.1]

Detector #	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Volume																
Occupancy																
Yellow Lock																
Red Lock																
Extend																
Added Initial																
Queue																
Call																
Call Phase	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Switch Phase	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Delay Time	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Extend Time	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Queue Limit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
No Activity	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Max Presence	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Erratic Cnt	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Fail Time	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Green Occupancy																
Yellow Occupancy																
Red Occupancy																
Ext Mode	NORM															
Delay Phase 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Delay Phase 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Source	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Det Number	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

### User Input map [1.8.9.1]

	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
Pin 1	2	16	8	22	3	17	9	23
Pin 2	6	20	12	26	198	199	196	189
Pin 3	15	1	21	7	27	13	28	14
Pin 4	189	189	189	189	4	18	10	24
Pin 5	130	134	132	136	200	201	202	203
Pin 6	189	5	19	11	25	178	208	207
Pin 7	192	193	194	195	196	197	189	189
Pin 8	189	189	189	189	189	189	189	189

### User Output map [1.8.9.2]

	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
Pin 1	14	62	4	28	52	3	27	51
Pin 2	13	61	2	26	50	1	25	49
Pin 3	16	64	8	32	56	7	31	55
Pin 4	15	63	6	30	54	5	29	53
Pin 5	37	39	38	40	42	41	115	114
Pin 6	18	66	12	36	60	11	35	59
Pin 7	17	65	10	34	58	9	33	57
Pin 8	115	115	115	115	115	115	115	115



## Appendix D Existing Level of Service Reports

Lanes, Volumes, Timings 36: Westridge Knolls Ave & Highlands Ranch Pkwy

12/19/2024
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	٦	-	$\mathbf{r}$	4	-	•	1	Ť	1	1	ŧ	~
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	۲.	<b>≜</b> 16		ሻ	<b>4</b> 16		ሻ	î,		ሻ	î,	
Traffic Volume (vph)	35	1198	80	23	566	16	49	8	75	21	35	28
Future Volume (vph)	35	1198	80	23	566	16	49	8	75	21	35	28
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	130		0	150		0	150		0	100		0
Storage Lanes	1		0	1		0	1		0	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		0.991			0.996			0.865			0.934	
Flt Protected	0.950			0.950			0.950			0.950		
Satd, Flow (prot)	1770	3507	0	1770	3525	0	1770	1611	0	1770	1740	0
Flt Permitted	0.357		-	0.104		-	0.713		-	0.698		
Satd, Flow (perm)	665	3507	0	194	3525	0	1328	1611	0	1300	1740	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd, Flow (RTOR)		9			4			17			30	
Link Speed (mph)		45			45			30			30	
Link Distance (ft)		502			817			552			297	
Travel Time (s)		7.6			12.4			12.5			6.8	
Peak Hour Factor	0.92	0.92	0 92	0.92	0.92	0.92	0 92	0.92	0 92	0 92	0.92	0.92
Adi Flow (vnh)	38	1302	87	25	615	17	53	9.02	82	23	38	30
Shared Lane Traffic (%)	00	1002	01	20	010		00	J	02	20	00	00
Lane Group Flow (vph)	38	1389	0	25	632	0	53	91	0	23	68	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)	Lon	12	rught	Lon	12	rugin	Lon	12	rtight	Lon	12	rugitu
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane		10			10			10			10	
Headway Eactor	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)	1.00	1.00	60	1.00	1.00	60	60	1.00	60	1.00	1.00	1.00
	Perm	NΔ	00	Perm	NΔ	00	Perm	NΔ	00	Perm	NΔ	00
Protected Phases	T OIIII	2		T OITH	6		r onn	8		i onn	4	
Permitted Phases	2	2		6	0		8	0		4	т	
Minimum Split (s)	31.5	31.5		31.5	31 5		32.0	32.0		32.0	32.0	
Total Solit (s)	45.0	45.0		45.0	45.0		45.0	45.0		45.0	45.0	
Total Split (%)	50.0%	50.0%		50.0%	50.0%		50.0%	50.0%		50.0%	50.0%	
Maximum Green (s)	38.5	38.5		38.5	38.5		10.0	10.0		10.0	10.0	
Vellow Time (s)	15	15		15	15		40.0	40.0		40.0	40.0	
All Ped Time (s)	4.J 2.0	4.5 2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Total Lost Time (s)	6.5	6.5		6.5	6.5		5.0	5.0		5.0	0.0 5.0	
	0.5	0.5		0.5	0.5		5.0	5.0		5.0	5.0	
Leau/Lay												
Walk Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Flash Dont Walk (s)	10.0	10.0		10.0	10.0		22.0	22.0		22.0	22.0	
Pedestrian Calle (#/br)	0.0	10.0		10.0	10.0		22.0	22.0		22.0	22.0	
Act Effet Green (s)	28 E	38 5		28 5	28 5		10.0	10 0		10 0	10 0	
Actuated a/C Patio	0.43	0.43		0.12	0.43		0.44	-+0.0 Ω 44		0.14	-+0.0 Ω 4.4	
v/c Patio	0.43	0.40		0.43	0.45		0.44	0.44		0.44	0.44	
viciNalio	0.15	0.32		0.50	0.42		0.09	0.15		0.04	0.09	

Existing AM 10:36 am 02/12/2024 Baseline

### Lanes, Volumes, Timings 36: Westridge Knolls Ave & Highlands Ranch Pkwy

12/19/2024	
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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay	17.3	35.9		29.3	18.9		15.1	12.6		14.5	9.6	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	17.3	35.9		29.3	18.9		15.1	12.6		14.5	9.6	
LOS	В	D		С	В		В	В		В	А	
Approach Delay		35.4			19.3			13.5			10.8	
Approach LOS		D			В			В			В	
Queue Length 50th (ft)	13	380		9	127		17	24		7	12	
Queue Length 95th (ft)	34	#532		34	172		39	52		21	36	
Internal Link Dist (ft)		422			737			472			217	
Turn Bay Length (ft)	130			150			150			100		
Base Capacity (vph)	284	1505		82	1510		590	725		577	790	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.13	0.92		0.30	0.42		0.09	0.13		0.04	0.09	
Intersection Summary												
Area Type:	Other											
Cycle Length: 90												
Actuated Cycle Length: 90												
Offset: 0 (0%), Referenced	to phase 2:	EBTL, Sta	art of Gree	en								
Natural Cycle: 70												
Control Type: Pretimed												
Maximum v/c Ratio: 0.92												
Intersection Signal Delay: 2	8.5			In	tersectior	n LOS: C						
Intersection Capacity Utiliza	ation 54.6%			IC	U Level o	of Service	А					
Analysis Period (min) 15												
# 95th percentile volume	exceeds cap	bacity, que	eue may l	be longer	•							
Queue shown is maximu	um after two	cycles.										
Splits and Phases: 36: W	/estridge Kn	olls Ave &	& Highlan	ds Ranch	Pkwy							

→ø2 (R)	Ø4
45 s	45 s
₩ Ø6	<b>√</b> Ø8
45 s	45 s

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

	۶	-	$\mathbf{\hat{z}}$	4	+	*	1	1	۲	1	Ŧ	~
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	<u>۲</u>	<b>^</b>	1	ሻሻ	<u>^</u>	1	ሻሻ	•	1	<u>۲</u>	eî 👘	
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	No	No	No	No	No	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	Yes	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	0.04	1.03	0.59	0.25	0.31	0.05	0.25	0.06	0.52	0.17	0.34	

Existing AM 10:36 am 02/12/2024 Baseline

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

12/19/2024	1
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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	С	F	С	С	С	А	С	С	А	С	D	
Approach Delay		66.8			27.6			13.4			40.4	
Approach LOS		Е			С			В			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	
ntersection Summary												
Area Type: 0	Other											
Cycle Length: 130												
Actuated Cycle Length: 130												
Offset: 0 (0%), Referenced to	phase 2:	EBTL, Sta	rt of Gree	en								
Natural Cycle: 90												
Control Type: Pretimed												
Maximum v/c Ratio: 1.03												
Intersection Signal Delay: 42	.3			In	tersection	LOS: D						
Intersection Capacity Utilizati	ion 59.6%			IC	U Level c	of Service	В					
Analysis Period (min) 15												
<ul> <li>Volume exceeds capacity</li> </ul>	y, queue is	theoretic	ally infinit	e.								
Queue shown is maximun	n after two	cycles.										
# 95th percentile volume ex	xceeds cap	pacity, que	eue may l	be longer.								
Queue shown is maximun	n after two	cycles.										
Splits and Phases: 67: Springhill Pkwy & Highlands Ranch Pkwy												

<b>Ø</b> 1	🖉 🖈 Ø2 (R)	<b>Ø</b> 3	Ø4
25 s	40 s	40 s	25 s
▶ <sub>Ø5</sub> ♦	26	Ø7 Ø8	
15 s 50 s		15 s 50 s	

### Lanes, Volumes, Timings 70: Foothills Canyon Blvd & Highlands Ranch Pkwy

12/13/2024	12/1	9/2	024
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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	<u> </u>	A12		<u>۲</u>	<b>^</b>	1	۲	•	1	<u> </u>	f,	
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	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24	Ū		24	Ū		12	Ū		12	Ū
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	

Existing AM 10:36 am 02/12/2024 Baseline

### 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	А	С		В	В	А	С	С	В	С	А	
Approach Delay		24.2			13.5			22.0			17.4	
Approach LOS		С			В			С			В	
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	5											
Offset: 38.5 (45%), Refere	enced to phas	e 2:EBTL	and 6:W	BTL, Stai	t of Yellov	N						
Natural Cycle: 80												
Control Type: Pretimed												
Maximum v/c Ratio: 0.81												
Intersection Signal Delay:	20.7			In	tersectior	LOS: C						
Intersection Capacity Utiliz	zation 62.1%			IC	U Level o	of Service	В					
Analysis Period (min) 15												

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

<b>Ø</b> 1	Ø2 (R)	<b>₩</b> Ø4
10 s	45 s	30 s
	● ● Ø6 (R)	Mø8
10 s	45 s	30 s

Lanes, Volumes, Timings 36: Westridge Knolls Ave & Highlands Ranch Pkwy

12/19/2024
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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	۲	<b>≜1</b> ≱		<u>۲</u>	<b>≜1</b> }		1	f)		<u> </u>	ĥ	
Traffic Volume (vph)	65	1134	88	67	1043	40	72	34	58	29	33	37
Future Volume (vph)	65	1134	88	67	1043	40	72	34	58	29	33	37
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	130		0	150		0	150		0	100		0
Storage Lanes	1		0	1		0	1		0	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		0.989			0.995			0.905			0.921	
Flt Protected	0.950			0.950			0.950			0.950		
Satd, Flow (prot)	1770	3500	0	1770	3522	0	1770	1686	0	1770	1716	0
Flt Permitted	0.112			0.104			0.708			0.692		-
Satd, Flow (perm)	209	3500	0	194	3522	0	1319	1686	0	1289	1716	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd, Flow (RTOR)		11			5			22			30	
Link Speed (mph)		45			45			30			30	
Link Distance (ft)		502			817			552			297	
Travel Time (s)		7.6			12.4			12.5			6.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adi Flow (vph)	71	1233	96	73	1134	43	78	37	63	32	36	40
Shared Lane Traffic (%)		1200	00	10	1101	10	10	01	00	02	00	10
Lane Group Flow (vph)	71	1329	0	73	1177	0	78	100	0	32	76	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)	Lon	12	rugitt	Lon	12	rugin	Lon	12	rugit	Lon	12	ragin
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane		10			10			10			10	
Headway Eactor	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	1.00	60	60	1.00	60	60	1.00	60	60	1.00	60
Turn Type	Perm	NA	00	Perm	NA		Perm	NA	00	Perm	NA	00
Protected Phases		2		T OIIII	6		r onn	8		i onn	4	
Permitted Phases	2	2		6	U		8	U		4	т	
Minimum Split (s)	31.5	31.5		31.5	31.5		24.0	24 0		24.0	24.0	
Total Solit (s)	45.0	45.0		45.0	45.0		45.0	45 0		45 0	45.0	
Total Split (%)	50.0%	50.0%		50.0%	50.0%		50.0%	50.0%		50.0%	50.0%	
Maximum Green (s)	38.5	38.5		38.5	38.5		39.0	39.0		39.0	39.0	
Yellow Time (s)	4 5	4 5		4 5	4 5		3.0	3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		3.0	3.0		3.0	3.0	
Lost Time Adjust (s)	2.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.5	6.5		6.5	6.5		6.0	6.0		6.0	6.0	
Lead/Lag	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Lead-Lag Ontimize?												
Walk Time (s)	70	70		70	70		70	70		70	70	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/br)	0	0		0	0		0	0		0	0	
Act Effct Green (s)	38.5	38.5		38.5	38.5		39.0	39.0		39.0	39.0	
Actuated g/C Ratio	0.43	0 43		0 43	0 43		0.43	0 43		0.43	0 43	
v/c Ratio	0.80	0.88		0.89	0.78		0.14	0.13		0.06	0.10	
	5.00			2.00								

Existing PM 4:45 pm 11/05/2024

### Lanes, Volumes, Timings 36: Westridge Knolls Ave & Highlands Ranch Pkwy

12/19/2024	
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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay	80.9	32.2		104.0	26.5		16.3	12.6		15.3	10.5	
Queue Delay	0.0	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0										
Total Delay	al Delay 80.9 32.2 104.0 26.5 16.3 12.6 15.3 10.5											
LOS	FC FC BB BB											
Approach Delay	proach Delay 34.6 31.0 14.2 11.9											
oproach LOS C C B B												
Queue Length 50th (ft)	eue Length 50th (ft) 34 352 37 292 26 26 10 15											
Queue Length 95th (ft)	eue Length 95th (ft) #118 #472 #125 375 54 56 27 40											
Internal Link Dist (ft)		422			737			472			217	
Turn Bay Length (ft)	130			150			150			100		
Base Capacity (vph)	89	1503		82	1509		571	743		558	760	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn         0												
Storage Cap Reductn	iorage Cap Reductn 0 0 0 0 0 0 0 0 0											
leduced v/c Ratio 0.80 0.88 0.89 0.78 0.14 0.13 0.06 0.10												
tersection Summary												
rea Type: Other												
Sycle Length: 90												
Actuated Cycle Length: 90												
Offset: 0 (0%), Referenced	to phase 2:I	EBTL, Sta	rt of Gre	en								
Natural Cycle: 60												
Control Type: Pretimed												
Maximum v/c Ratio: 0.89												
Intersection Signal Delay: 3	Intersection Signal Delay: 31.0 Intersection LOS: C											
Intersection Capacity Utiliza	tion 76.8%			IC	U Level c	of Service	D					
Analysis Period (min) 15												
# 95th percentile volume e	exceeds cap	bacity, que	eue may	be longer								
Queue shown is maximu	ım after two	cycles.										
Splits and Phases: 36: W	estridge Kn	olls Ave 8	k Highlan	ds Ranch	Pkwy							

→ø2 (R)	▼Ø4
45 s	45 s
₩ Ø6	<b>▲</b> ¶ <sub>Ø8</sub>
45 s	45 s

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

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	<u>۲</u>	<b>^</b>	1	ሻሻ	<b>^</b>	1	ሻሻ	•	1	<u>۲</u>	eî 👘	
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	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	Yes	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	

Existing PM 4:45 pm 11/05/2024

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

12/19	/2024
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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	С	D	В	С	D	А	С	С	А	С	D	
Approach Delay		36.9			33.1			16.4			38.1	
Approach LOS		D			С			В			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: 13	0											
Offset: 13 (10%), Reference	ed to phase	2:EBTL a	nd 6:WB	TL, Start (	of Green							
Natural Cycle: 90												
Control Type: Pretimed												
Maximum v/c Ratio: 0.70												
Intersection Signal Delay: 2	<u>29.3</u>			In	tersectior	n LOS: C						
Intersection Capacity Utilization	ation 57.1%			IC	CU Level	of Service	В					
Analysis Period (min) 15												
Splits and Phases: 67: S	pringhill Pkw	/y & Highl	lands Rar	nch Pkwy								

<b>√</b> Ø1	🚽 🗘 🖉 🖉 🖉	<b>▲</b> Ø3	Ø4
25 s	40 s	40 s	25 s
∕ ø₅	● ● Ø6 <b>(!</b> )	Ø7 Ø8	
15 s	50 s	15 s 50 s	

### Lanes, Volumes, Timings 70: Foothills Canyon Blvd & Highlands Ranch Pkwy

12/19/2024	4
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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	۲	<b>≜1</b> ≱		1	<b>^</b>	1	۲	•	1	1	4Î	
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
Adi, 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	No	No	No	No	No	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		2011	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	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	

Existing PM 4:45 pm 11/05/2024

### 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	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	В	С		А	С	А	С	С	В	С	А	
Approach Delay		20.4			18.2			21.1			15.0	
Approach LOS		С			В			С			В	
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%), Referenc	ed to phase	2:EBTL a	nd 6:WB	TL, Start o	of Green							
Natural Cycle: 80												
Control Type: Pretimed												
Maximum v/c Ratio: 0.67												
Intersection Signal Delay: 1	9.3			In	tersection	LOS: B						
Intersection Capacity Utiliza	ation 59.3%			IC	U Level c	of Service	В					
Analysis Period (min) 15												

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

<b>√</b> Ø1	Ø2 (R)	₩ Ø4
10 s	45 s	30 s
∕ ø₅	Ø6 (R)	<b>1</b> 08
10 s	45 s	30 s

12/19/2024

0.7					
EBT	EBR	WBL	WBT	NBL	NBR
4			- <del>4</del>	Y	
127	22	24	107	0	0
127	22	24	107	0	0
0	0	0	0	0	0
Free	Free	Free	Free	Stop	Stop
-	None	-	None	-	None
-	-	-	-	0	-
,# 0	-	-	0	0	-
0	-	-	0	0	-
92	92	92	92	92	92
2	2	2	2	2	2
138	24	26	116	0	0
	0.7 EBT 127 127 0 Free - - - ,# 0 0 92 2 138	0.7 EBT EBR 127 22 127 22 127 22 0 0 Free Free Free Free None - None - 92 92 2 2 138 24	0.7 EBT EBR WBL 127 22 24 127 22 24 127 22 24 0 0 0 Free Free Free - None - - None - - 92 92 92 92 92 138 24 26	0.7 EBT EBR WBL WBT 127 22 24 107 127 22 24 107 127 22 24 107 0 0 0 0 Free Free Free Free - None - None - 0 - 0 0 - 0 92 92 92 92 2 2 2 2 138 24 26 116	0.7         EBT       EBR       WBL       WBT       NBL         127       22       24       107       0         127       22       24       107       0         127       22       24       107       0         127       22       24       107       0         127       22       24       107       0         127       22       24       107       0         127       22       24       107       0         127       22       24       107       0         0       0       0       0       0       0         Free       Free       Free       Free       Stop         -       0       -       -       0       0         0       -       -       0       0       0         #       0       -       -       0       0         #       0       -       -       0       0         #       0       -       -       0       0         #       0       2       2       2       2       2

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	162	0	318	150
Stage 1	-	-	-	-	150	-
Stage 2	-	-	-	-	168	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1417	-	675	896
Stage 1	-	-	-	-	878	-
Stage 2	-	-	-	-	862	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	• -	-	1417	-	662	896
Mov Cap-2 Maneuver	• -	-	-	-	662	-
Stage 1	-	-	-	-	878	-
Stage 2	-	-	-	-	845	-
Approach	ER		\//R		NR	
Approach			1.4			
HOM CONTROL Delay, S	0		1.4		0	
					A	
Minor Lane/Major Mvr	mt 🛛	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)		-	-	-	1417	-
HCM Lane V/C Ratio		-	-	-	0.018	-
HCM Control Delay (s	3)	0	-	-	7.6	0
HCM Lane LOS		A	-	-	A	Α
HCM 95th %tile Q(veh	h)	-	-	-	0.1	-

Int Delay, s/veh	1.4						
Movement	EBT	EBR	WBL	WBT	NBL	NBR	
Lane Configurations	•			•	Y		
Traffic Vol, veh/h	128	0	0	114	17	25	
Future Vol, veh/h	128	0	0	114	17	25	
Conflicting Peds, #/hr	0	0	0	0	0	0	
Sign Control	Free	Free	Free	Free	Stop	Stop	
RT Channelized	-	None	-	None	-	None	
Storage Length	-	-	-	-	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	139	0	0	124	18	27	

Major/Minor	Major1	ľ	/lajor2		Minor1		
Conflicting Flow All	0	-	-	-	263	139	
Stage 1	-	-	-	-	139	-	
Stage 2	-	-	-	-	124	-	
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	-	0	0	-	726	909	
Stage 1	-	0	0	-	888	-	
Stage 2	-	0	0	-	902	-	
Platoon blocked, %	-			-			
Mov Cap-1 Maneuve	r -	-	-	-	726	909	
Mov Cap-2 Maneuve	r -	-	-	-	726	-	
Stage 1	-	-	-	-	888	-	
Stage 2	-	-	-	-	902	-	
Approach	EB		WB		NB		
HCM Control Delay, s	s 0		0		9.6		
HCM LOS					А		
Minor Lane/Major Mv	mt	NBLn1	EBT	WBT			
Capacity (veh/h)		825	-	-			
HCM Lane V/C Ratio		0.055	-	-			
HCM Control Delay (	s)	9.6	-	-			
HCM Lane LOS		А	-	-			
HCM 95th %tile Q(ve	h)	0.2	-	-			

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Intersection						
Int Delay, s/veh	5.6					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	- î÷			र्च	- Y	
Traffic Vol, veh/h	57	81	72	35	65	92
Future Vol, veh/h	57	81	72	35	65	92
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
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	62	88	78	38	71	100

Major/Minor	Major1	1	Major2		Minor1		
Conflicting Flow All	0	0	150	0	300	106	
Stage 1	-	-	-	-	106	-	
Stage 2	-	-	-	-	194	-	
Critical Hdwy	-	-	4.12	-	6.42	6.22	
Critical Hdwy Stg 1	-	-	-	-	5.42	-	
Critical Hdwy Stg 2	-	-	-	-	5.42	-	
Follow-up Hdwy	-	-	2.218	-	3.518	3.318	
Pot Cap-1 Maneuver	-	-	1431	-	691	948	
Stage 1	-	-	-	-	918	-	
Stage 2	-	-	-	-	839	-	
Platoon blocked, %	-	-		-			
Mov Cap-1 Maneuver	• -	-	1431	-	652	948	
Mov Cap-2 Maneuver		-	-	-	652	-	
Stage 1	-	-	-	-	918	-	
Stage 2	-	-	-	-	792	-	
Approach	EB		WB		NB		
HCM Control Delay, s	s 0		5.2		10.7		
HCM LOS					В		
Minor Lane/Major Mvi	mt N	BLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)		798	-	-	1431	-	
HCM Lane V/C Ratio		0.214	-	-	0.055	-	
HCM Control Delay (s	5)	10.7	-	-	7.7	0	
HCM Lane LOS		В	-	-	А	А	
HCM 95th %tile Q(vel	h)	0.8	-	-	0.2	-	

#### Intersection Int Delay, s/veh 2.8 WBL WBR NBT NBR SBL SBT Movement Lane Configurations ٦ ۴ ŧ ŧ 20 152 Traffic Vol, veh/h 79 80 0 0 Future Vol, veh/h 20 79 80 0 0 152 Conflicting Peds, #/hr 0 0 0 0 0 0 Stop Sign Control Stop Free Free Free Free RT Channelized None -None -None -Storage Length 0 0 ----Veh in Median Storage, # 0 -0 -\_ 0 Grade, % 0 0 0 ---Peak Hour Factor 92 92 92 92 92 92 Heavy Vehicles, % 2 2 2 2 2 2 Mvmt Flow 22 86 87 0 0 165

Major/Minor	Minor1	N	lajor1	Ма	ajor2		
Conflicting Flow All	252	87	0	-	-	-	
Stage 1	87	-	-	-	-	-	
Stage 2	165	-	-	-	-	-	
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	737	971	-	0	0	-	
Stage 1	936	-	-	0	0	-	
Stage 2	864	-	-	0	0	-	
Platoon blocked, %			-			-	
Mov Cap-1 Maneuver	737	971	-	-	-	-	
Mov Cap-2 Maneuver	737	-	-	-	-	-	
Stage 1	936	-	-	-	-	-	
Stage 2	864	-	-	-	-	-	
Approach	WB		NB		SB		
HCM Control Delay, s	9.3		0		0		

HCM LOS A

Minor Lane/Major Mvmt	NBTWBLn1WBL	n2 SBT
Capacity (veh/h)	- 737 9	71 -
HCM Lane V/C Ratio	- 0.029 0.0	- 88
HCM Control Delay (s)	- 10 9	9.1 -
HCM Lane LOS	- B	Α -
HCM 95th %tile Q(veh)	- 0.1 (	).3 -

Int Delay, s/veh

4.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		4		٦		1		4			4	
Traffic Vol, veh/h	8	0	1	7	0	19	2	51	38	121	44	5
Future Vol, veh/h	8	0	1	7	0	19	2	51	38	121	44	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None									
Storage Length	-	-	-	0	-	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	9	0	1	8	0	21	2	55	41	132	48	5

Major/Minor	Minor2		I	Minor1			Major1			Ν	lajor2			
Conflicting Flow All	405	415	51	395	-	76	53	0	(	0	96	0	0	
Stage 1	315	315	-	80	-	-	-	-		-	-	-	-	
Stage 2	90	100	-	315	-	-	-	-		-	-	-	-	
Critical Hdwy	7.12	6.52	6.22	7.12	-	6.22	4.12	-		-	4.12	-	-	
Critical Hdwy Stg 1	6.12	5.52	-	6.12	-	-	-	-		-	-	-	-	
Critical Hdwy Stg 2	6.12	5.52	-	6.12	-	-	-	-		-	-	-	-	
Follow-up Hdwy	3.518	4.018	3.318	3.518	-	3.318	2.218	-		-	2.218	-	-	
Pot Cap-1 Maneuver	556	528	1017	565	0	985	1553	-		-	1498	-	-	
Stage 1	696	656	-	929	0	-	-	-		-	-	-	-	
Stage 2	917	812	-	696	0	-	-	-		-	-	-	-	
Platoon blocked, %								-		-		-	-	
Mov Cap-1 Maneuver	506	479	1017	525	-	985	1553	-		-	1498	-	-	
Mov Cap-2 Maneuver	506	479	-	525	-	-	-	-		-	-	-	-	
Stage 1	695	596	-	928	-	-	-	-		-	-	-	-	
Stage 2	897	811	-	632	-	-	-	-		-	-	-	-	

Approach	EB	WB	NB	SB	
HCM Control Delay, s	11.8	9.6	0.2	5.4	
HCM LOS	В	А			

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1V	VBLn1V	VBLn2	SBL	SBT	SBR
Capacity (veh/h)	1553	-	-	536	525	985	1498	-	-
HCM Lane V/C Ratio	0.001	-	-	0.018	0.014	0.021	0.088	-	-
HCM Control Delay (s)	7.3	0	-	11.8	12	8.7	7.6	0	-
HCM Lane LOS	А	А	-	В	В	А	А	А	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0	0.1	0.3	-	-

Int Delay, s/veh

0.4					
EBT	EBR	WBL	WBT	NBL	NBR
4			- <del>4</del>	Y	
125	6	11	98	0	0
125	6	11	98	0	0
0	0	0	0	0	0
Free	Free	Free	Free	Stop	Stop
-	None	-	None	-	None
-	-	-	-	0	-
,# 0	-	-	0	0	-
0	-	-	0	0	-
92	92	92	92	92	92
2	2	2	2	2	2
136	7	12	107	0	0
	0.4 EBT 125 125 0 Free - # 0 0 92 2 136	0.4 EBT EBR 125 6 125 6 125 6 0 0 Free Free - None - None - 0 4 0 - 2 2 2 136 7	0.4 EBT EBR WBL 125 6 11 125 6 11 125 6 11 125 6 11 0 0 0 Free Free Free None - Free 7 0 - 10 -	0.4         EBR         WBL         WBT           125         6         11         98           125         6         11         98           125         6         11         98           125         6         11         98           0         0         0         0           Free         Free         Free         Free           None         -         None         -           # 0         -         -         0           0         -         -         0           92         92         92         92           126         7         12         107	0.4           EBT         EBR         WBL         WBT         NBL           125         6         11         98         0           125         6         11         98         0           125         6         11         98         0           125         6         11         98         0           125         6         11         98         0           125         6         11         98         0           125         6         11         98         0           125         6         11         98         0           125         6         11         98         0           0         0         0         0         0         0           Free         Free         Free         Free         Stop         0           -         -         0         0         0         0           0         -         -         0         0         0           92         92         92         92         2         2           136         7         12         107         0

Major/Minor	Major	1	Μ	ajor2		Minor1	
Conflicting Flow All		0	0	143	0	271	140
Stage 1		-	-	-	-	140	-
Stage 2		-	-	-	-	131	-
Critical Hdwy		-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1		-	-	-	-	5.42	-
Critical Hdwy Stg 2		-	-	-	-	5.42	-
Follow-up Hdwy		-	- 2	2.218	-	3.518	3.318
Pot Cap-1 Maneuver		-	-	1440	-	718	908
Stage 1		-	-	-	-	887	-
Stage 2		-	-	-	-	895	-
Platoon blocked, %		-	-		-		
Mov Cap-1 Maneuver	•	-	-	1440	-	712	908
Mov Cap-2 Maneuver	-	-	-	-	-	712	-
Stage 1		-	-	-	-	887	-
Stage 2		-	-	-	-	887	-
Approach	E	3		WB		NB	
HCM Control Delay		0		0.8		0	
HCM LOS	,	•		0.0		Ă	
						,,	
							14/DT
Minor Lane/Major Mvi	mt	NBLr	า1	EBT	EBR	WBL	WBT
Capacity (veh/h)			-	-	-	1440	-
HCM Lane V/C Ratio			-	-	-	0.008	-
HCM Control Delay (s	s)		0	-	-	7.5	0
HCM Lane LOS			А	-	-	A	A
HCM 95th %tile Q(vel	h)		-	-	-	0	-

0.7					
EBT	EBR	WBL	WBT	NBL	NBR
•			•	۰¥	
125	0	0	100	9	8
125	0	0	100	9	8
0	0	0	0	0	0
Free	Free	Free	Free	Stop	Stop
-	None	-	None	-	None
-	-	-	-	0	-
# 0	-	-	0	0	-
0	-	-	0	0	-
92	92	92	92	92	92
2	2	2	2	2	2
136	0	0	109	10	9
	0.7 EBT 125 125 0 Free - # 0 0 92 2 136	0.7 EBT EBR 125 0 125 0 125 0 0 0 Free Free - None  # 0 - 0 - 92 92 2 2 136 0	0.7 EBT EBR WBL 125 0 00 125 0 00 125 0 00 Comparison 00 Free Free Free - None -  # 0 92 92 92 92 2 2 2 136 0 0	0.7         EBR         WBL         WBT           ↑         0         0         100           125         0         0         100           125         0         0         100           125         0         0         100           0         0         0         0           Free         Free         Free         Free           None         -         None         -           #         0         -         -         -           #         0         -         0         0         0           92         92         92         92         92         2         2           136         0         0         0         109 </td <td>0.7           EBT         EBR         WBL         WBT         NBL           125         0         0         100         9           125         0         0         100         9           125         0         0         100         9           0         0         0         0         0         9           125         0         0         100         9           125         0         0         0         9           0         0         0         0         0           Free         Free         Free         Free         Stop           -         None         -         None         -           -         0         0         0         0           #0         -         -         0         0           #0         -         -         0         0           #0         -         -         0         0           #0         -         0         0         0           #0         -         2         2         2         2           #0         0         0         0</td>	0.7           EBT         EBR         WBL         WBT         NBL           125         0         0         100         9           125         0         0         100         9           125         0         0         100         9           0         0         0         0         0         9           125         0         0         100         9           125         0         0         0         9           0         0         0         0         0           Free         Free         Free         Free         Stop           -         None         -         None         -           -         0         0         0         0           #0         -         -         0         0           #0         -         -         0         0           #0         -         -         0         0           #0         -         0         0         0           #0         -         2         2         2         2           #0         0         0         0

Major/Minor	Major1	Ν	/lajor2	1	Minor1			
Conflicting Flow All	0	-	-	-	245	136		
Stage 1	-	-	-	-	136	-		
Stage 2	-	-	-	-	109	-		
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	-	0	0	-	743	913		
Stage 1	-	0	0	-	890	-		
Stage 2	-	0	0	-	916	-		
Platoon blocked, %	-			-				
Mov Cap-1 Maneuver	• -	-	-	-	743	913		
Mov Cap-2 Maneuver		-	-	-	743	-		
Stage 1	-	-	-	-	890	-		
Stage 2	-	-	-	-	916	-		
Approach	EB		WB		NB			
HCM Control Delay, s	<u> </u>		0		9.5			
HCM LOS	•				A			
Minor Lane/Major My	mt	NBL n1	EBT	WBT				
Capacity (veh/h)		814						i
HCM Lane V/C Ratio		0.023	-	-				

HCM Lane V/C Ratio	0.023	-	-	
HCM Control Delay (s)	9.5	-	-	
HCM Lane LOS	А	-	-	
HCM 95th %tile Q(veh)	0.1	-	-	

Intersection						
Int Delay, s/veh	5.1					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	et -			÷.	Y	
Traffic Vol, veh/h	44	81	60	41	65	70
Future Vol, veh/h	44	81	60	41	65	70
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
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	48	88	65	45	71	76

Major/Minor	Major1	Ν	Major2	l	Minor1		
Conflicting Flow All	0	0	136	0	267	92	
Stage 1	-	-	-	-	92	-	
Stage 2	-	-	-	-	175	-	
Critical Hdwy	-	-	4.12	-	6.42	6.22	
Critical Hdwy Stg 1	-	-	-	-	5.42	-	
Critical Hdwy Stg 2	-	-	-	-	5.42	-	
Follow-up Hdwy	-	-	2.218	-	3.518	3.318	
Pot Cap-1 Maneuver	-	-	1448	-	722	965	
Stage 1	-	-	-	-	932	-	
Stage 2	-	-	-	-	855	-	
Platoon blocked, %	-	-		-			
Mov Cap-1 Maneuver	-	-	1448	-	689	965	
Mov Cap-2 Maneuver	-	-	-	-	689	-	
Stage 1	-	-	-	-	932	-	
Stage 2	-	-	-	-	816	-	
Approach	EB		WB		NB		
HCM Control Delay, s	0		4.5		10.4		
HCM LOS	•				В		
					_		
Minor Lane/Maior Myn	nt Ni	BI n1	FBT	EBR	WBI	WBT	
Canacity (veh/h)		809			1448		
HCM Lane V/C Ratio	0	) 181	_	_	0.045	-	
HCM Control Delay (s)		10.4	-	-	7 6	0	
HCM Lane LOS		B	_	-	A	A	
HCM 95th %tile Q(veh	)	0.7	-	-	0.1	-	

#### Intersection Int Delay, s/veh 2.4 WBL WBR NBT NBR SBL SBT Movement Lane Configurations ٦ ۴ ŧ ŧ 18 138 Traffic Vol, veh/h 57 0 0 75 Future Vol, veh/h 18 57 75 0 0 138 Conflicting Peds, #/hr 0 0 0 0 0 0 Stop Sign Control Stop Free Free Free Free RT Channelized None -None -None -Storage Length 0 0 ----Veh in Median Storage, # 0 -0 --0 Grade, % 0 0 0 ---Peak Hour Factor 92 92 92 92 92 92 Heavy Vehicles, % 2 2 2 2 2 2 Mvmt Flow 20 62 82 0 0 150

Major/Minor	Minor1	Ν	lajor1	M	ajor2	
Conflicting Flow All	232	82	0	-	-	-
Stage 1	82	-	-	-	-	-
Stage 2	150	-	-	-	-	-
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	756	978	-	0	0	-
Stage 1	941	-	-	0	0	-
Stage 2	878	-	-	0	0	-
Platoon blocked, %			-			-
Mov Cap-1 Maneuver	756	978	-	-	-	-
Mov Cap-2 Maneuver	756	-	-	-	-	-
Stage 1	941	-	-	-	-	-
Stage 2	878	-	-	-	-	-
Approach	WB		NB		SB	
HCM Control Delay, s	9.1		0		0	

			,	
НСМ	LO	S		А

Minor Lane/Major Mvmt	NBTWBLn1WBLn2	SBT
Capacity (veh/h)	- 756 978	-
HCM Lane V/C Ratio	- 0.026 0.063	-
HCM Control Delay (s)	- 9.9 8.9	-
HCM Lane LOS	- A A	-
HCM 95th %tile Q(veh)	- 0.1 0.2	-

Int Delay, s/veh

3.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		4		۲.		1		4			4	
Traffic Vol, veh/h	3	2	1	7	0	20	2	49	23	70	70	16
Future Vol, veh/h	3	2	1	7	0	20	2	49	23	70	70	16
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None									
Storage Length	-	-	-	0	-	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	3	2	1	8	0	22	2	53	25	76	76	17

Major/Minor	Minor2			Minor1			Major1			Major2			
Conflicting Flow All	318	319	85	308	-	66	93	0	0	78	0	0	
Stage 1	237	237	-	70	-	-	-	-	-	-	-	-	
Stage 2	81	82	-	238	-	-	-	-	-	-	-	-	
Critical Hdwy	7.12	6.52	6.22	7.12	-	6.22	4.12	-	-	4.12	-	-	
Critical Hdwy Stg 1	6.12	5.52	-	6.12	-	-	-	-	-	-	-	-	
Critical Hdwy Stg 2	6.12	5.52	-	6.12	-	-	-	-	-	-	-	-	
Follow-up Hdwy	3.518	4.018	3.318	3.518	-	3.318	2.218	-	-	2.218	-	-	
Pot Cap-1 Maneuver	635	598	974	644	0	998	1501	-	-	1520	-	-	
Stage 1	766	709	-	940	0	-	-	-	-	-	-	-	
Stage 2	927	827	-	765	0	-	-	-	-	-	-	-	
Platoon blocked, %								-	-		-	-	
Mov Cap-1 Maneuver	596	566	974	615	-	998	1501	-	-	1520	-	-	
Mov Cap-2 Maneuver	596	566	-	615	-	-	-	-	-	-	-	-	
Stage 1	765	671	-	939	-	-	-	-	-	-	-	-	
Stage 2	906	826	-	721	-	-	-	-	-	-	-	-	
Annroach	ER			\//R			NR			SB			

Approach	EB	WB	NB	SB	
HCM Control Delay, s	10.8	9.3	0.2	3.4	
HCM LOS	В	А			

Minor Lane/Major Mvmt	NBL	NBT	NBR E	BLn1V	VBLn1V	VBLn2	SBL	SBT	SBR
Capacity (veh/h)	1501	-	-	625	615	998	1520	-	-
HCM Lane V/C Ratio	0.001	-	-	0.01	0.012	0.022	0.05	-	-
HCM Control Delay (s)	7.4	0	-	10.8	10.9	8.7	7.5	0	-
HCM Lane LOS	А	А	-	В	В	А	А	А	-
HCM 95th %tile Q(veh)	0	-	-	0	0	0.1	0.2	-	-



## Appendix E Crash Diagrams and Listings

### HIGHLANDS RANCH PKWY & WESTRIDGE KNOLLS AVE 2019 - 2024

### 22 Crashes

Clear



### HIGHLANDS RANCH PKWY & WESTRIDGE KNOLLS AVE 2019 - 2024

#### 22 Crashes

Clear

a . 1	1	4 11 11				T 1 ' ' '	μ <u>τ 1 1'11 1</u>		
Casetrackingi	dAccidenttin	ne Accidentdate	Primarystreet	Crossstreet	Onroadaddress	Numberinjured	Numberkilled	Harmfuleventl	
190022017	11.38 am	2/20/2019	HIGHLANDS	WESTRIDGE		)	0	Front to Rear	
190022017	11.50 um	2,20,2019	RANCH PKWY	KNOLLS AVE			°	r ront to recur	
1000/030/	12.23 pm	1/25/2010	HIGHLANDS WESTRIDGE 0		)	0	Front to Side		
190049304	12.23 pm	4/23/2019	RANCH PKWY	KNOLLS AVE		)	0	From to Side	
100062886	2.22	5/20/2010	WESTRIDGE	HIGHLANDS		)	0	Enant ta Cila	
190062886	2:22 pm	5/29/2019	KNOLLS AVE	RANCH PKWY		)	0	Front to Side	
100000401	- 10		HIGHLANDS	WESTRIDGE			0		
190080481	7:18 am	//12/2019	RANCH PKWY	KNOLLS AVE		)	0	Front to Side	
			HIGHLANDS	DESERT				Side to Side -	
190104024	6:35 pm	9/13/2019	RANCH PKWY	WILLOW RD		)	0	Same Direction	
			DESERT	HIGHLANDS					
190104235	2:08 pm	9/14/2019	WILLOW RD	RANCH PKWY	0	)	0	Front to Side	
			HIGHLANDS	DESERT					
200002896	8:26 pm	1/8/2020	RANCH PKWV	WILLOW RD		)	0	Front to Side	
	-			WESTRIDGE					
200063208	11:14 am	7/4/2020		WESTRIDGE		)	0	Front to Rear	
			KANCH PKW I	KNULLS AVE				D' 1 /	
200064428	7:15 pm	7/7/2020	HIGHLANDS	WESTRIDGE	1		0	Bicycle /	
	1		RANCHPKWY	KNOLLS AVE				Motorized Bicycle	
200073227	1:01 pm	8/6/2020	HIGHLANDS	DESERT		)	0	Bicycle /	
	nor pii	0/0/2020	RANCH PKWY	WILLOW RD		, 	°	Motorized Bicycle	
200085911	9·14 am	9/18/2020	HIGHLANDS	WESTRIDGE		)	0	Front to Side	
200003711	9.14 am	5/10/2020	RANCH PKWY	KNOLLS AVE		,	0		
210065645	2.05 pm	8/12/2021	HIGHLANDS	WESTRIDGE		)	0	Front to Side	
210003043	5.05 pm	0/15/2021	RANCH PKWY	KNOLLS AVE		)	0	riolit to side	
210075501	2.24	0/17/2021	HIGHLANDS	WESTRIDGE		,	0	Enant ta Cila	
2100/5591	3:24 pm	9/1//2021	RANCH PKWY	KNOLLS AVE	3	)	0	Front to Side	
	1.00	10/5/0001	HIGHLANDS	DESERT		0			
210097656	1:23 pm	12/7/2021	RANCH PKWY	WILLOW RD		)	0	Front to Rear	
			HIGHLANDS	WESTRIDGE			-		
220024861	3:44 pm	3/31/2022	RANCH PKWY	KNOLLS AVE	C	)	0	Front to Front	
			HIGHLANDS	WESTRIDGE					
230035444	5:09 pm	4/26/2023	RANCH PKWY	KNOLLS AVE	0	)	0	Front to Rear	
			HIGHLANDS	WESTRIDGE				Piovele /	
230038020	6:35 pm	5/4/2023	D ANCH DVWV	WESTRIDUE	1	l	0	Motorized Disuela	
								Motorized Bicycle	
240042045	5:02 pm	5/6/2024	HIGHLANDS	DESERI	2	2	0	Front to Rear	
	-		RANCH PKWY	WILLOW RD					
240089341	3:08 pm	9/27/2024	HIGHLANDS	WESTRIDGE		)	0	Front to Rear	
	1		RANCHPKWY	KNOLLS AVE			-		
240089353	3·41 nm	9/24/2024	HIGHLANDS	WESTRIDGE		)	0	Front to Rear	
210009555	5.11 pin	572 112021	RANCH PKWY	KNOLLS AVE			0	r ront to redu	
240095800	10.11 pm	10/15/2024	HIGHLANDS	WESTRIDGE		)	0	Front to Side	
270093009	10.11 pm	10/13/2024	RANCH PKWY	KNOLLS AVE		0	0	Front to Side	
240009512	8.54	10/24/2024	HIGHLANDS	DESERT	1			Enort to Enort	
240098312	8:54 pm	10/24/2024	RANCH PKWY	WILLOW RD		L	V	FIONT TO FROM	

### HIGHLANDS RANCH PKWY & WESTRIDGE VILLAGE PKWY 2019 - 2024

#### 18 Crashes

Clear

Casetrackingi	dAccidenttim	neAccidentdate	Primarystreet	Crossstreet	Onroadaddress	Numberinjured	Numberkilled	Harmfulevent1	
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 0 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	DEER CREEK		0	Pedestrian	
210013207	8:38 am	2/15/2021	HIGHLANDS RANCH PKWY	WESTRIDGE VILLAGE PKWY	VESTRIDGE VILLAGE 0 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 1 PKWY		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

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Lanes, Volumes, Timings 36: Westridge Knolls Ave & Highlands Ranch Pkwy

	12	12	0/	2	0	24
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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ሻ	<b>≜</b> 16		ሻ	<b>≜</b> 16		ሻ	î,		۳.	ĥ	
Traffic Volume (vph)	35	1198	141	21	566	16	115	8	70	21	31	28
Future Volume (vph)	35	1198	141	21	566	16	115	8	70	21	31	28
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	130		0	150		0	150		0	100		0
Storage Lanes	1		0	1		0	1		0	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		0.984			0.996	0.00		0.866			0.930	
Flt Protected	0.950	01001		0.950	01000		0.950	0.000		0.950	01000	
Satd, Flow (prot)	1770	3483	0	1770	3525	0	1770	1613	0	1770	1732	0
Flt Permitted	0.357	0.00	•	0 104		•	0 715		•	0 702		
Satd Flow (perm)	665	3483	0	194	3525	0	1332	1613	0	1308	1732	0
Right Turn on Red		0100	Yes		0020	Yes	1002	1010	Yes	1000		Yes
Satd Flow (RTOR)		17	100		4	100		17	100		30	100
Link Sneed (mnh)		45			45			30			30	
Link Distance (ff)		502			817			552			297	
Travel Time (s)		7.6			12.4			12.5			6.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0 92	0.92	0.0	0.92
Adi Flow (vnh)	38	1302	153	23	615	17	125	0.52 Q	76	23	34	30
Shared Lane Traffic (%)	50	1002	100	20	015	17	125	5	10	25	54	50
Lane Group Flow (uph)	28	1/55	٥	23	632	٥	125	85	٥	23	64	٥
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	ZJ No	No.	No
Lane Alignment	Loft	Loft	Pight	Loft	Loff	Pight	Loft	Loft	Pight	Loft	Loff	Pight
Median Width(ft)	Leit	12	Tagit	Leit	12	Right	Leit	12	Night	Leit	12	Right
Link Offeet(ft)		12			12			0			12	
Crosswalk Width/ft)		16			16			16			16	
		10			10			10			10	
Headway Eactor	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)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	00.1	1.00	1.00	1.00
	Dorm	NIA	00	Dorm	NΙΛ	00	Dorm	NΙΔ	00	Dorm	NIA	00
Protocted Phases	reiiii	1NA 2		Feilli	NA 6		Feilii	N/A Q		Feilii		
Protected Phases	2	2		6	0		0	0		1	4	
Minimum Split (a)	21 5	21 5		21 5	21 5		22.0	22.0		22.0	22.0	
Total Split (s)	31.5	31.5		31.0	31.0		32.0 45.0	32.0 45.0		32.0 45.0	32.0 45.0	
Total Split (S)	40.0	45.0		40.0	40.0		40.0	40.0		40.0	40.0	
Novimum Croon (a)	30.0%	30.0%		30.0%	00.0%		10.0%	10.0%		10.0%	30.0%	
Velley Time (a)	30.5	30.3 4 E		30.5	30.3		40.0	40.0		40.0	40.0	
fellow filme (s)	4.0	4.0		4.0	4.0		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	
Lost Time Adjust (S)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (S)	0.5	0.5		0.0	0.0		5.0	5.0		5.0	5.0	
Lead/Lag												
Walk Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Flash Dont Walk (c)	10.0	10.0		10.0	10.0		22.0	22.0		22 N	22.0	
Padastrian Calle (#/br)	10.0	10.0		10.0	10.0		22.0	22.0		22.0	22.0	
Act Effet Green (s)	38 5	38 5		38 5	28 5		10.0	10 0		10 0	10.0	
Actuated a/C Patio	0 42	0.42		0.42	0.42		40.0	40.0		40.0	40.0	
No Datio	0.43	0.43		0.43	0.43		0.44	0.44		0.44	0.44	
v/c rtaliu	0.13	0.97		0.20	0.42		0.21	0.12		0.04	0.00	

Total AM 10:36 am 02/12/2024 Baseline

### Lanes, Volumes, Timings 36: Westridge Knolls Ave & Highlands Ranch Pkwy

12/20/2024
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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay	17.3	43.2		27.8	18.9		16.6	12.5		14.5	9.3	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	17.3	43.2		27.8	18.9		16.6	12.5		14.5	9.3	
LOS	В	D		С	В		В	В		В	А	
Approach Delay		42.6			19.2			14.9			10.7	
Approach LOS		D			В			В			В	
Queue Length 50th (ft)	13	411		8	127		42	22		7	11	
Queue Length 95th (ft)	34	#576		32	172		79	49		21	33	
Internal Link Dist (ft)	nternal Link Dist (ft) 422 737 472 217											
Turn Bay Length (ft)	130			150			150			100		
Base Capacity (vph)	284	1499		82	1510		592	726		581	786	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.13	0.97		0.28	0.42		0.21	0.12		0.04	0.08	
Intersection Summary												
Area Type:	Other											
Cycle Length: 90												
Actuated Cycle Length: 90												
Offset: 0 (0%), Referenced	to phase 2:I	EBTL, Sta	irt of Gree	en								
Natural Cycle: 70												
Control Type: Pretimed												
Maximum v/c Ratio: 0.97												
Intersection Signal Delay: 32.8 Intersection LOS: C												
Intersection Capacity Utilization 60.2% ICU Level of Service B												
Analysis Period (min) 15												
# 95th percentile volume	exceeds cap	pacity, que	eue may l	be longer	•							
Queue shown is maximum after two cycles.												
Splits and Phases: 36: Westridge Knolls Ave & Highlands Ranch Pkwy												

Ø2 (R)	₩Ø4
45 s	45 s
₩ Ø6	≪\ ø8
45 s	45 s
Lanes, Volumes, Timings 36: Westridge Knolls Ave & Highlands Ranch Pkwy

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	۲.	<b>≜1</b> }		ሻ	<b>≜1</b> }		ሻ	ĥ		5	4Î	
Traffic Volume (vph)	65	1134	159	64	1043	40	143	33	56	26	32	37
Future Volume (vph)	65	1134	159	64	1043	40	143	33	56	26	32	37
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	130		0	150		0	150		0	100		0
Storage Lanes	1		0	1		0	1		0	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		0.982			0.995			0.906			0.920	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3476	0	1770	3522	0	1770	1688	0	1770	1714	0
Flt Permitted	0.112			0.104			0.708			0.694		
Satd. Flow (perm)	209	3476	0	194	3522	0	1319	1688	0	1293	1714	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		21			5			22			30	
Link Speed (mph)		45			45			30			30	
Link Distance (ft)		502			817			552			297	
Travel Time (s)		7.6			12.4			12.5			6.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	71	1233	173	70	1134	43	155	36	61	28	35	40
Shared Lane Traffic (%)												
Lane Group Flow (vph)	71	1406	0	70	1177	0	155	97	0	28	75	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12	Ū		12	Ū		12	Ū		12	Ū
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	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Minimum Split (s)	31.5	31.5		31.5	31.5		24.0	24.0		24.0	24.0	
Total Split (s)	45.0	45.0		45.0	45.0		45.0	45.0		45.0	45.0	
Total Split (%)	50.0%	50.0%		50.0%	50.0%		50.0%	50.0%		50.0%	50.0%	
Maximum Green (s)	38.5	38.5		38.5	38.5		39.0	39.0		39.0	39.0	
Yellow Time (s)	4.5	4.5		4.5	4.5		3.0	3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		3.0	3.0		3.0	3.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.5	6.5		6.5	6.5		6.0	6.0		6.0	6.0	
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)	38.5	38.5		38.5	38.5		39.0	39.0		39.0	39.0	
Actuated g/C Ratio	0.43	0.43		0.43	0.43		0.43	0.43		0.43	0.43	
v/c Ratio	0.80	0.94		0.85	0.78		0.27	0.13		0.05	0.10	

Total PM 4:45 pm 11/05/2024

Synchro 11 Report Page 1

# Lanes, Volumes, Timings 36: Westridge Knolls Ave & Highlands Ranch Pkwy

12/20/	2024
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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay	80.9	37.8		95.9	26.5		18.0	12.5		15.2	10.4	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	80.9	37.8		95.9	26.5		18.0	12.5		15.2	10.4	
LOS	F	D		F	С		В	В		В	В	
Approach Delay		39.9			30.4			15.9			11.7	
Approach LOS		D			С			В			В	
Queue Length 50th (ft)	34	386		35	292		55	25		9	15	
Queue Length 95th (ft)	#118	#542		#119	375		100	54		25	40	
Internal Link Dist (ft)		422			737			472			217	
Turn Bay Length (ft)	130			150			150			100		
Base Capacity (vph)	89	1498		82	1509		571	743		560	759	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.80	0.94		0.85	0.78		0.27	0.13		0.05	0.10	
Intersection Summary												
Area Type:	Other											
Cycle Length: 90												
Actuated Cycle Length: 90												
Offset: 0 (0%), Referenced	to phase 2:	EBTL, Sta	irt of Gree	en								
Natural Cycle: 60												
Control Type: Pretimed												
Maximum v/c Ratio: 0.94												
Intersection Signal Delay: 3	33.1			In	tersectior	n LOS: C						
Intersection Capacity Utiliza	ation 79.0%			IC	U Level o	of Service	D					
Analysis Period (min) 15												
# 95th percentile volume	exceeds cap	pacity, que	eue may	be longer	•							
Queue shown is maximu	um after two	cycles.										
Splits and Phases: 36. M	lastridaa Kn	olle Ave &	Highlen	de Ranch	Pkwa							
opina anu i nases. 30. M	realinge Mi		<u>k i nymän</u>		ткиу							

Ø2 (R)	▼Ø4
45 s	45 s
₩ Ø6	<b>√</b> Ø8
45 s	45 s

Intersection						
Int Delay, s/veh	0.5					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	el 🗧			÷.	Y	
Traffic Vol, veh/h	127	31	21	107	0	0
Future Vol, veh/h	127	31	21	107	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
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
Mumt Flow						

Major/Minor	Major	1	N	Major2		Minor1	
Conflicting Flow All		0	0	172	0	317	155
Stage 1		-	-	-	-	155	-
Stage 2		-	-	-	-	162	-
Critical Hdwy		-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1		-	-	-	-	5.42	-
Critical Hdwy Stg 2		-	-	-	-	5.42	-
Follow-up Hdwy		-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver		-	-	1405	-	676	891
Stage 1		-	-	-	-	873	-
Stage 2		-	-	-	-	867	-
Platoon blocked, %		-	-		-		
Mov Cap-1 Maneuver		-	-	1405	-	664	891
Mov Cap-2 Maneuver		-	-	-	-	664	-
Stage 1		-	-	-	-	873	-
Stage 2		-	-	-	-	851	-
Annroach	F	R		W/R		NR	
HCM Control Delay	<u> </u>	0		1.2		0	
HCMIOS		U		۲.۲		Δ	
						~	
Minor Lane/Major Mvr	nt	NBL	_n1	EBT	EBR	WBL	WBT
Capacity (veh/h)			-	-	-	1405	-
HCM Lane V/C Ratio			-	-	-	0.016	-
HCM Control Delay (s	)		0	-	-	7.6	0
HCM Lane LOS			А	-	-	А	Α
HCM 95th %tile Q(ver	1)		-	-	-	0.1	-

Int Delay, s/veh

Int Delay, s/veh	1.8							
Movement	EBT	EBR	WBL	WBT	NBL	NBR		
Lane Configurations	•			•	Y			
Traffic Vol, veh/h	128	0	0	111	27	25		
Future Vol, veh/h	128	0	0	111	27	25		
Conflicting Peds, #/hr	0	0	0	0	0	0		
Sign Control	Free	Free	Free	Free	Stop	Stop		
RT Channelized	-	None	-	None	-	None		
Storage Length	-	-	-	-	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	139	0	0	121	29	27		

Major1	Ν	/lajor2		Minor1	
0	-	_	-	260	139
-	-	-	-	139	-
-	-	-	-	121	-
-	-	-	-	6.42	6.22
-	-	-	-	5.42	-
-	-	-	-	5.42	-
-	-	-	-	3.518	3.318
-	0	0	-	729	909
-	0	0	-	888	-
-	0	0	-	904	-
-			-		
	-	-	-	729	909
	-	-	-	729	-
-	-	-	-	888	-
-	-	-	-	904	-
EB		WB		NB	
; 0		0		9.8	
				A	
mt	NBI n1	FBT	WBT		
	806				
	0.07	-	_		
2)	9.8	-	-		
,	Δ	_	_		
h)	0.2	_	_		
	<u>Major1</u> 0	Major1         N           0         -           -         -           -         -           -         -           -         -           -         -           -         -           -         -           -         0           -         0           -         0           -         0           -         0           -         0           -         0           -         0           -         0           -         -           -         -           -         -           -         -           -         -           -         -           -         -           -         -           -         -           -         -           -         -           -         -           -         -           -         -           -         -           -         -           -         -           -         0 <td>Major1         Major2           0         -           -         -           -         -           -         -           -         -           -         -           -         -           -         -           -         -           -         -           -         0           0         0           -         0           -         0           -         0           -         -           -         -           -         -           -         -           -         -           -         -           -         -           -         -           -         -           -         -           -         -           -         -           -         -           -         -           -         -           -         -           -         -           -         -           -         -      -         0</td> <td>Major1         Major2           0         -         -           -         -         -           -         -         -           -         -         -           -         -         -           -         -         -           -         -         -           -         -         -           -         0         0           -         0         0           -         0         0           -         0         0           -         0         0           -         -         -           -         -         -           -         -         -           -         -         -           -         -         -           -         -         -           -         -         -           -         -         -           -         -         -           -         -         -           -         -         -           -         -         -           -         0         0  &lt;</td> <td>Major1         Major2         Minor1           0         -         -         260           -         -         139           -         -         121           -         -         -         121           -         -         -         121           -         -         -         121           -         -         -         121           -         -         -         5.42           -         -         -         5.42           -         -         -         5.42           -         -         -         5.42           -         -         -         3.518           -         0         0         -           -         0         0         -           -         0         0         9.4           -         -         -         729           -         -         -         729           -         -         -         904           -         -         -         904           -         -         -         90           s         0</td>	Major1         Major2           0         -           -         -           -         -           -         -           -         -           -         -           -         -           -         -           -         -           -         -           -         0           0         0           -         0           -         0           -         0           -         -           -         -           -         -           -         -           -         -           -         -           -         -           -         -           -         -           -         -           -         -           -         -           -         -           -         -           -         -           -         -           -         -           -         -           -         -      -         0	Major1         Major2           0         -         -           -         -         -           -         -         -           -         -         -           -         -         -           -         -         -           -         -         -           -         -         -           -         0         0           -         0         0           -         0         0           -         0         0           -         0         0           -         -         -           -         -         -           -         -         -           -         -         -           -         -         -           -         -         -           -         -         -           -         -         -           -         -         -           -         -         -           -         -         -           -         -         -           -         0         0  <	Major1         Major2         Minor1           0         -         -         260           -         -         139           -         -         121           -         -         -         121           -         -         -         121           -         -         -         121           -         -         -         121           -         -         -         5.42           -         -         -         5.42           -         -         -         5.42           -         -         -         5.42           -         -         -         3.518           -         0         0         -           -         0         0         -           -         0         0         9.4           -         -         -         729           -         -         -         729           -         -         -         904           -         -         -         904           -         -         -         90           s         0

12/20/20	)24
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Intersection						
Int Delay, s/veh	5.9					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	ef 👘			र्च	Y	
Traffic Vol, veh/h	66	128	64	45	115	92
Future Vol, veh/h	66	128	64	45	115	92
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
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	72	139	70	49	125	100

Major/Minor	Major1	ľ	Major2		Minor1	
Conflicting Flow All	0	0	211	0	331	142
Stage 1	-	-	-	-	142	-
Stage 2	-	-	-	-	189	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1360	-	664	906
Stage 1	-	-	-	-	885	-
Stage 2	-	-	-	-	843	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1360	-	629	906
Mov Cap-2 Maneuver	-	-	-	-	629	-
Stage 1	-	-	-	-	885	-
Stage 2	-	-	-	-	798	-
Approach	ED		\//D		ND	
HCM Control Delay, s	0		4.6		12.1	
HCM LOS					В	
Minor Lane/Major Mvr	nt N	BLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)		728	-	-	1360	-
HCM Lane V/C Ratio	(	0.309	-	-	0.051	-
HCM Control Delay (s	)	12.1	-	-	7.8	0
HCM Lane LOS		В	-	-	А	А

0.2

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1.3

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HCM 95th %tile Q(veh)

#### Intersection Int Delay, s/veh 3.2 WBL WBR NBT NBR SBL SBT Movement Lane Configurations ٦ 1 ŧ ŧ 17 191 Traffic Vol, veh/h 123 0 0 78 Future Vol, veh/h 17 123 78 0 0 191 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 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 18 134 85 0 0 208

Major/Minor	Minor1	N	lajor1	Ma	ajor2		
Conflicting Flow All	293	85	0	-	-	-	
Stage 1	85	-	-	-	-	-	
Stage 2	208	-	-	-	-	-	
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	698	974	-	0	0	-	
Stage 1	938	-	-	0	0	-	
Stage 2	827	-	-	0	0	-	
Platoon blocked, %			-			-	
Mov Cap-1 Maneuver	698	974	-	-	-	-	
Mov Cap-2 Maneuver	698	-	-	-	-	-	
Stage 1	938	-	-	-	-	-	
Stage 2	827	-	-	-	-	-	
Approach	WB		NB		SB		
HCM Control Delay s	94		0		0		
HCM LOS			0		U		
1000 200	/\						

Minor Lane/Major Mvmt	NBTWBLn1WBLn2	SBT
Capacity (veh/h)	- 698 974	-
HCM Lane V/C Ratio	- 0.026 0.137	-
HCM Control Delay (s)	- 10.3 9.3	-
HCM Lane LOS	- B A	-
HCM 95th %tile Q(veh)	- 0.1 0.5	-

Int Delay, s/veh

4.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		4		۲.		1		4			4	
Traffic Vol, veh/h	8	0	1	6	0	16	2	51	33	159	41	5
Future Vol, veh/h	8	0	1	6	0	16	2	51	33	159	41	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None									
Storage Length	-	-	-	0	-	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	9	0	1	7	0	17	2	55	36	173	45	5

Major/Minor	Minor2			Minor1			Major1			Major2			
Conflicting Flow All	480	489	48	471	-	73	50	0	0	91	0	0	
Stage 1	394	394	-	77	-	-	-	-	-	-	-	-	
Stage 2	86	95	-	394	-	-	-	-	-	-	-	-	
Critical Hdwy	7.12	6.52	6.22	7.12	-	6.22	4.12	-	-	4.12	-	-	
Critical Hdwy Stg 1	6.12	5.52	-	6.12	-	-	-	-	-	-	-	-	
Critical Hdwy Stg 2	6.12	5.52	-	6.12	-	-	-	-	-	-	-	-	
Follow-up Hdwy	3.518	4.018	3.318	3.518	-	3.318	2.218	-	-	2.218	-	-	
Pot Cap-1 Maneuver	496	480	1021	503	0	989	1557	-	-	1504	-	-	
Stage 1	631	605	-	932	0	-	-	-	-	-	-	-	
Stage 2	922	816	-	631	0	-	-	-	-	-	-	-	
Platoon blocked, %								-	-		-	-	
Mov Cap-1 Maneuver	443	423	1021	457	-	989	1557	-	-	1504	-	-	
Mov Cap-2 Maneuver	443	423	-	457	-	-	-	-	-	-	-	-	
Stage 1	630	534	-	931	-	-	-	-	-	-	-	-	
Stage 2	905	815	-	556	-	-	-	-	-	-	-	-	

Approach	EB	WB	NB	SB	
HCM Control Delay, s	12.8	9.9	0.2	6	
HCM LOS	В	А			

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1V	VBLn1V	VBLn2	SBL	SBT	SBR	
Capacity (veh/h)	1557	-	-	473	457	989	1504	-	-	
HCM Lane V/C Ratio	0.001	-	-	0.021	0.014	0.018	0.115	-	-	
HCM Control Delay (s)	7.3	0	-	12.8	13	8.7	7.7	0	-	
HCM Lane LOS	А	А	-	В	В	А	А	А	-	
HCM 95th %tile Q(veh)	0	-	-	0.1	0	0.1	0.4	-	-	

IIILEISECIIOII						
Int Delay, s/veh	0.2					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	el 👘			÷.	Y	
Traffic Vol, veh/h	125	18	8	110	0	0
Future Vol, veh/h	125	18	8	110	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage	e,#0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mymt Flow	136	20	9	120	0	0

Major/Minor	Major1	N	Major2		Minor1		
Conflicting Flow All	0	0	156	0	284	146	
Stage 1	-	-	-	-	146	-	
Stage 2	-	-	-	-	138	-	
Critical Hdwy	-	-	4.12	-	6.42	6.22	
Critical Hdwy Stg 1	-	-	-	-	5.42	-	
Critical Hdwy Stg 2	-	-	-	-	5.42	-	
Follow-up Hdwy	-	-	2.218	-	3.518	3.318	
Pot Cap-1 Maneuver	-	-	1424	-	706	901	
Stage 1	-	-	-	-	881	-	
Stage 2	-	-	-	-	889	-	
Platoon blocked, %	-	-		-			
Mov Cap-1 Maneuver	-	-	1424	-	701	901	
Mov Cap-2 Maneuver	-	-	-	-	701	-	
Stage 1	-	-	-	-	881	-	
Stage 2	-	-	-	-	883	-	
Approach	EB		WB		NB		
HCM Control Delay s	0		0.5		0		
HCMLOS	•				A		
	-1 NI	DL 4	EDT				
	nt ini	BLUI	ERI	EBK	VVBL	VVBI	
Capacity (veh/h)		-	-	-	1424	-	
HCM Lane V/C Ratio		-	-	-	0.006	-	
HCM Control Delay (s)	)	0	-	-	1.5	0	
HCM Lane LOS	,	A	-	-	A	A	
HCM 95th %tile Q(veh	)	-	-	-	0	-	

1.1					
EBT	EBR	WBL	WBT	NBL	NBR
•			•	Y	
125	0	0	97	21	7
125	0	0	97	21	7
0	0	0	0	0	0
Free	Free	Free	Free	Stop	Stop
-	None	-	None	-	None
-	-	-	-	0	-
# 0	-	-	0	0	-
0	-	-	0	0	-
92	92	92	92	92	92
2	2	2	2	2	2
136	0	0	105	23	8
	1.1 EBT 125 125 0 Free - # 0 0 92 2 136	1.1 EBT EBR 125 0 125 0 125 0 0 0 Free Free - None  # 0 - 0 - 92 92 2 2 136 0	1.1       EBR       WBL         €BT       EBR       WBL         125       0       0         125       0       0         125       0       0         125       0       0         125       0       0         125       0       0         0       0       0         Free       Free       Free         None       -         0       -       -         92       92       92         22       2       2         136       0       0	1.1         EBR         WBL         WBT           ↑         0         0         97           125         0         0         97           125         0         0         97           125         0         0         97           125         0         0         97           125         0         0         97           0         0         0         97           125         0         0         97           0         0         0         97           125         0         0         0           Free         Free         Free         Free           -         -         -         -           #         0         -         -         0           0         -         -         0         0           92         92         92         92         2           136         0         0         105	1.1         EBT       EBR       WBL       WBT       NBL         125       0       0       97       21         125       0       0       97       21         125       0       0       97       21         125       0       0       97       21         125       0       0       97       21         0       0       0       0       0         Free       Free       Free       Free       Stop         -       None       -       None       -         -       0       0       0       0       0         #0       -       -       0       0         #0       -       -       0       0         #0       -       -       0       0         #0       -       -       0       0         #0       -       -       0       0         #0       -       -       0       0         #10       -       2       2       2       2         #12       2       2       2       2       2       2     <

Major/Minor	Major1	ľ	Major2		Minor1			
Conflicting Flow All	0	-	-	-	241	136		
Stage 1	-	-	-	-	136	-		
Stage 2	-	-	-	-	105	-		
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	-	0	0	-	747	913		
Stage 1	-	0	0	-	890	-		
Stage 2	-	0	0	-	919	-		
Platoon blocked, %	-			-				
Mov Cap-1 Maneuver	-	-	-	-	747	913		
Mov Cap-2 Maneuver	-	-	-	-	747	-		
Stage 1	-	-	-	-	890	-		
Stage 2	-	-	-	-	919	-		
Approach	EB		WB		NB			
HCM Control Delay, s	0		0		9.8			
HCM LOS					A			
Minor Lane/Major Mvr	nt	NBLn1	EBT	WBT				
Canacity (yeh/h)		783						

Capacity (veh/h)	783	-	-
HCM Lane V/C Ratio	0.039	-	-
HCM Control Delay (s)	9.8	-	-
HCM Lane LOS	А	-	-
HCM 95th %tile Q(veh)	0.1	-	-

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Intersection						
Int Delay, s/veh	5.4					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	- <b>î</b> >			<u>କ</u> ୀ	۰¥	
Traffic Vol, veh/h	56	135	56	53	120	64
Future Vol, veh/h	56	135	56	53	120	64
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
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	61	147	61	58	130	70

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0 208	0 315	135	
Stage 1	-		- 135	-	
Stage 2	-		- 180	-	
Critical Hdwy	-	- 4.12	- 6.42	6.22	
Critical Hdwy Stg 1	-		- 5.42	-	
Critical Hdwy Stg 2	-		- 5.42	-	
Follow-up Hdwy	-	- 2.218	- 3.518	3.318	
Pot Cap-1 Maneuver	-	- 1363	- 678	914	
Stage 1	-		- 891	-	
Stage 2	-		- 851	-	
Platoon blocked, %	-	-	-		
Mov Cap-1 Maneuver	• -	- 1363	- 647	914	
Mov Cap-2 Maneuver	· -		- 647	-	
Stage 1	-		- 891	-	
Stage 2	-		- 812	-	
Approach	FB	WB	NB		
HCM Control Delay	. 0	4	11.9		
HCM LOS	. 0		B		

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	720	-	-	1363	-
HCM Lane V/C Ratio	0.278	-	-	0.045	-
HCM Control Delay (s)	11.9	-	-	7.8	0
HCM Lane LOS	В	-	-	А	А
HCM 95th %tile Q(veh)	1.1	-	-	0.1	-

Int Delay, s/veh	3						
Movement	WBL	WBR	NBT	NBR	SBL	SBT	
Lane Configurations	٦	1	1			1	
Traffic Vol, veh/h	15	108	73	0	0	188	
Future Vol, veh/h	15	108	73	0	0	188	
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	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	16	117	79	0	0	204	

Minor1	М	lajor1	Major2		
283	79	0	-	-	-
79	-	-	-	-	-
204	-	-	-	-	-
6.42	6.22	-	-	-	-
5.42	-	-	-	-	-
5.42	-	-	-	-	-
3.518	3.318	-	-	-	-
707	981	-	0	0	-
944	-	-	0	0	-
830	-	-	0	0	-
		-			-
707	981	-	-	-	-
707	-	-	-	-	-
944	-	-	-	-	-
830	-	-	-	-	-
	Minor1 283 79 204 6.42 5.42 5.42 3.518 707 944 830 707 707 944 830	Minor1         M           283         79           79         -           204         -           6.42         6.22           5.42         -           3.518         3.318           707         981           944         -           707         981           707         -           944         -           830         -           707         -           944         -           830         -	Minor1         Major1           283         79         0           79         -         -           204         -         -           6.42         6.22         -           5.42         -         -           3.518         3.318         -           707         981         -           830         -         -           707         981         -           707         981         -           707         981         -           830         -         -           944         -         -           830         -         -           830         -         -           944         -         -           830         -         -           944         -         -           830         -         -	Minor1         Major1         Ma           283         79         0         -           79         -         -         -           204         -         -         -           6.42         6.22         -         -           5.42         -         -         -           3.518         3.318         -         -           707         981         -         0           944         -         -         0           707         981         -         -           707         981         -         -           707         981         -         -           830         -         -         -           944         -         -         -           830         -         -         -	Minor1         Major1         Major2           283         79         0         -         -           79         -         -         -         -           204         -         -         -         -           6.42         6.22         -         -         -           5.42         -         -         -         -           3.518         3.318         -         -         -           707         981         -         0         0           944         -         -         0         0           -         -         -         -         -           707         981         -         -         -           707         981         -         -         -           707         981         -         -         -           707         981         -         -         -           944         -         -         -         -           830         -         -         -         -

Approach	WB	NB	SB	
HCM Control Delay, s	9.3	0	0	
HCM LOS	А			

Minor Lane/Major Mvmt	NBTWBLn1WBLn2	SBT
Capacity (veh/h)	- 707 981	-
HCM Lane V/C Ratio	- 0.023 0.12	-
HCM Control Delay (s)	- 10.2 9.2	-
HCM Lane LOS	- B A	-
HCM 95th %tile Q(veh)	- 0.1 0.4	-

Int Delay, s/veh

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		4		<u> </u>		1		4			4	
Traffic Vol, veh/h	3	2	1	6	0	17	2	49	20	119	67	16
Future Vol, veh/h	3	2	1	6	0	17	2	49	20	119	67	16
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	0	-	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	3	2	1	7	0	18	2	53	22	129	73	17

Major/Minor	Minor2			Minor1			Major1			Major2			
Conflicting Flow All	417	419	82	409	-	64	90	0	0	75	0	0	
Stage 1	340	340	-	68	-	-	-	-	-	-	-	-	
Stage 2	77	79	-	341	-	-	-	-	-	-	-	-	
Critical Hdwy	7.12	6.52	6.22	7.12	-	6.22	4.12	-	-	4.12	-	-	
Critical Hdwy Stg 1	6.12	5.52	-	6.12	-	-	-	-	-	-	-	-	
Critical Hdwy Stg 2	6.12	5.52	-	6.12	-	-	-	-	-	-	-	-	
Follow-up Hdwy	3.518	4.018	3.318	3.518	-	3.318	2.218	-	-	2.218	-	-	
Pot Cap-1 Maneuver	546	525	978	553	0	1000	1505	-	-	1524	-	-	
Stage 1	675	639	-	942	0	-	-	-	-	-	-	-	
Stage 2	932	829	-	674	0	-	-	-	-	-	-	-	
Platoon blocked, %								-	-		-	-	
Mov Cap-1 Maneuver	499	478	978	513	-	1000	1505	-	-	1524	-	-	
Mov Cap-2 Maneuver	499	478	-	513	-	-	-	-	-	-	-	-	
Stage 1	674	582	-	941	-	-	-	-	-	-	-	-	
Stage 2	914	828	-	611	-	-	-	-	-	-	-	-	

Approach	EB	WB	NB	SB	
HCM Control Delay, s	11.8	9.6	0.2	4.5	
HCM LOS	В	A			

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1V	VBLn1V	WBLn2	SBL	SBT	SBR	
Capacity (veh/h)	1505	-	-	535	513	1000	1524	-	-	
HCM Lane V/C Ratio	0.001	-	-	0.012	0.013	0.018	0.085	-	-	
HCM Control Delay (s)	7.4	0	-	11.8	12.1	8.7	7.6	0	-	
HCM Lane LOS	А	А	-	В	В	А	А	А	-	
HCM 95th %tile Q(veh)	0	-	-	0	0	0.1	0.3	-	-	



# Appendix G School Questionnaire

## Review: DCSD Traffic and Pedestrian Safety Questionnaire

	Respondent			
	9 Anonymous	13:53 Time to complete		
1.	What school do you represent?	S	core	/ 0 pts
	Eldorado			
2.	Please provide your name.	S	core	/ 0 pts
	Julie Crawford			
3.	Please provide your email.	S	core	/ 0 pts
	jccrawford@dcsdk12.org			
4.	Please provide feedback on crosswalks. Are crosswalks provided in adequate in general abide by crosswalk locations? Are additional crosswalk locations de	locations? Do families S esired?	core	/ 0 pts
	I would love to have one more crosswalk but all in all our system runs really well.			
5.	Please provide feedback on pickup/drop-off. Where are your schools pickup locations? Is there adequate length or do vehicle queues extend on to public	and drop-off S roadways?	core	/ 0 pts
	We have two drop off locations. The front (called Kiss and Go) and the back (called the Quick an length.	nd Go). I believe it is adequate		
6.	If available, can you provide your school's written pickup and drop-off proced to nick.westphal@dibblecorp.com.	lures? Please send S	core	/ 0 pts
	Here is a google doc: https://docs.google.com/document/d/1bLLVnabfutQW2-y_Wm15D7BJJJel	DhrxWl-TykAo-wkM/edit?tab=t.0		
7.	Please provide feedback on parking lot safety. Is there an adequate number of there any sight visibility challenges when exiting a parking lot (e.g. parked veh If so, where?	of parking spaces? Are S nicles blocking views)?	Score	/ 0 pts
	We are all good			

8. Please provide feedback on roadway safety. Do vehicles in general follow traffic laws such as speed limits, stop signs, no parking zones, etc.?	Score	/ 0 pts
Yes for the most part		
9. Does your school have a designated bus drop-off area? Are there any conflicts between buses and other vehicles?	Score	/ 0 pts
Yes and yes sometimes since we have the quick and go in the back bus loop	]	
10. Please provide any general information related to vehicle and pedestrian safety at or around your school that you would like to share.	Score	/ 0 pts

No answer provided.