

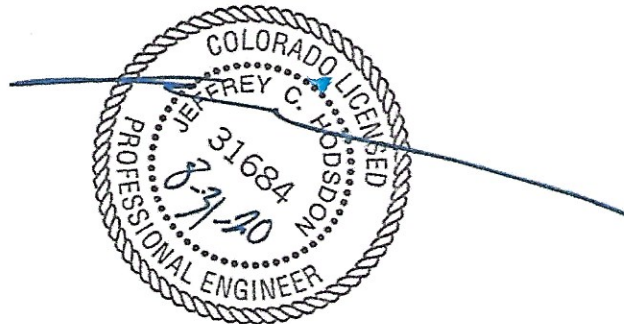


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Windermere  
Traffic Impact Study  
SP-19-003  
(LSC #184640)  
August 31, 2020

**Traffic Engineer's Statement**

This traffic report and supporting information were prepared under my responsible charge and they comport with the standard of care. So far as is consistent with the standard of care, said report was prepared in general conformance with the criteria established by the County for traffic reports.



**Developer's Statement**

I, the Developer, have read and will comply with all commitments made on my behalf within this report.

A handwritten signature in blue ink, appearing to read 'James R. H. H.', is written over a horizontal line.

9/10/2020  
Date



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August 31, 2020

Todd Stephens  
Windsor Ridge Homes  
4164 Austin Bluffs Parkway, Suite 361  
Colorado Springs, CO 80918

RE: Windermere  
El Paso County, CO  
Traffic Impact Study  
LSC #184640

Dear Mr. Stephens:

In response to your request, LSC Transportation Consultants, Inc. has prepared this updated traffic impact analysis for the Windermere residential development. As shown in Figure 1, the site is located north of North Carefree Circle between Marksheffel Road and Antelope Ridge Drive in El Paso County, Colorado. The site is planned to contain 203 single-family homes. Site access is proposed to Antelope Ridge Drive.

## **REPORT CONTENTS**

This report presents:

- The existing roadway and traffic conditions in the site's vicinity including the roadway widths, surface conditions, lane geometries, traffic controls, and posted speed limits;
- Current traffic volume data;
- Estimates of projected 2040 background traffic volumes;
- The projected average weekday and peak-hour vehicle-trips to be generated by the proposed development;
- The assignment of the projected site-generated traffic volumes to the area roadways;
- The projected short-term total traffic volumes on the area roadways;
- The projected levels of service at the key intersections in the vicinity of the site;
- The recommendations for roadway improvements to mitigate the traffic impacts;
- The recommended street classifications for the internal streets within the proposed development; and
- The project's obligation to the County roadway improvement fee program.

### **Previous Traffic Reports Completed in the Area**

LSC completed a traffic study for the Gardens at North Carefree located west of the site. The latest update was dated October 16, 2018. This study accounts for the land use, trip generation, and roadway network included in that study.

### **LAND USE AND ACCESS**

As shown in Figure 1, the site is located north of North Carefree Circle between Marksheffel Road and Antelope Ridge Drive. The Chateau at Antelope Ridge residential development is located just north of the site. There are also existing single-family homes west of the site.

Figure 2 shows the site land use and access plan. The site is planned to contain 203 single-family homes. Access to the site is planned at two full-movement access points to Antelope Ridge Drive. The south access point would align with the existing south intersection of Pronghorn Meadows Circle. The north access is located about 755 feet north of the south intersection of Pronghorn Meadows/Antelope Ridge and about 675 feet south of the north intersection of Pronghorn Meadows/Antelope Ridge.

### **PEDESTRIAN AND BICYCLE ACCESS**

Sidewalks are planned on all of the streets interior to the Windermere development. Sidewalks are also planned adjacent to the site along Antelope Ridge Drive and North Carefree Circle, but not along Marksheffel Road.

### **ROADWAY AND TRAFFIC CONDITIONS**

The roadways in the site's vicinity are shown in Figure 1 and are described below. Copies of the 2016 El Paso County Major Transportation Corridors Plan (MTCP) 2040 Roadway Plan and 2016 MTCP 2060 Corridor Preservation Plan with the site location identified on them have been attached to this report.

**North Carefree Circle** is a six-lane Principal Arterial. In the vicinity of Antelope Ridge Drive, North Carefree Circle has a posted limit of 35 miles per hour (mph).

**Marksheffel Road** is a Principal Arterial extending north from the City of Fountain to Woodmen Road. Marksheffel has two through lanes in each direction, plus a raised median south of North Carefree Circle and one through lane in each direction north of North Carefree Circle. The posted speed limit adjacent to the site is 50 mph. Marksheffel Road is ultimately planned to be widened to six lanes and extended north and west from Woodmen Road to connect to Research Parkway at Black Forest Road. Marksheffel Road is shown as a six-lane Principal Arterial adjacent to the site on the 2016 El Paso County Major Transportation Corridors Plan (MTCP) 2040 Roadway Plan and as an Expressway on the 2016 MTCP 2060 Corridor Preservation Plan. Marksheffel Road is planned to be constructed north from Woodmen Road to Vollmer Road in the short-term future.

**Antelope Ridge Drive** is an Urban Residential Collector that extends north from North Carefree Circle to about one-half mile north of Stetson Hills Boulevard. In the vicinity of the site, Antelope Ridge Drive has one through lane in each direction and a striped center median. The posted speed limit on Antelope Ridge Drive is 35 mph. The intersection of Antelope Ridge Drive/North Carefree Circle is currently stop sign-controlled.

### **Intersection Sight Distance**

#### North Carefree Circle/Antelope Ridge Drive

The intersection sight distance from the southbound approach to the west along North Carefree at the intersection of North Carefree and Antelope Ridge Drive does not meet the sight distance criteria contained in *A Policy on Geometric Design of Highways and Streets* pp. 657-663 (published by AASHTO) for design speeds of 40 mph or 45 mph. The field-measured sight distance is about 425 to 475 feet and the AASHTO standard is about 568 feet for passenger vehicles, given the geometric conditions and an assumed 40-mph design speed (the posted speed is 35 mph). The raised center median is about 17 feet wide including the eastbound left-turn lane. The raised center median to the west contains landscaping rock, which contributes to some extent to the limited sight distance.

#### Site Access Points

The access point locations on Antelope Ridge Drive meet ECM criteria for stopping sight distance and intersection sight distance.

### **Crash History**

No crashes were reported to the Colorado State Patrol (CSP) at the intersection of North Carefree Circle/Antelope Ridge Drive between 2016 and February 2019.

### **Existing Traffic Volumes**

Figure 3 shows the existing morning, mid-afternoon (3:00-4:00 p.m.), and late afternoon peak-hour traffic volumes at the intersection of North Carefree Circle/Antelope Ridge Drive and the south Antelope Ridge Drive/Pronghorn Meadows Circle intersection. Figure 3 also shows the existing morning and late afternoon peak-hour traffic volumes at the intersection of Marksheffel Road/North Carefree Circle. The average weekday traffic volumes shown are estimates by LSC based on traffic counts conducted by LSC in August 2018 and January 2019. The traffic count reports are attached.

### **Existing Levels of Service**

Level of service (LOS) is a quantitative measure of the level of delay at an intersection. Level of service is indicated on a scale from "A" to "F." LOS A represents control delay of less than 10



seconds for unsignalized and signalized intersections. LOS F represents control delay of more than 50 seconds for unsignalized intersections and more than 80 seconds for signalized intersections. Table 1 shows the level of service delay ranges.

**Table 1: Intersection Levels of Service Delay Ranges**

Level of Service	Signalized Intersections	Unsignalized Intersections
	Average Control Delay (seconds per vehicle)	Average Control Delay (seconds per vehicle) <sup>(1)</sup>
A	10.0 sec or less	10.0 sec or less
B	10.1-20.0 sec	10.1-15.0 sec
C	20.1-35.0 sec	15.1-25.0 sec
D	35.1-55.0 sec	25.1-35.0 sec
E	55.1-80.0 sec	35.1-50.0 sec
F	80.1 sec or more	50.1 sec or more
For unsignalized intersections, if V/C ratio is greater than 1.0 the level of service is LOS F, regardless of the projected average control delay per vehicle.		

The intersections of North Carefree Circle/Marksheffel Road and North Carefree Circle/Antelope Ridge Drive and the south Antelope Ridge Drive/Pronghorn Meadows Circle intersection have been analyzed to determine the existing levels of service based on the unsignalized method of analysis procedures outlined in the *Highway Capacity Manual, 6<sup>th</sup> Edition* by the Transportation Research Board. The results of the level of service analysis are shown in Figure 3. The level of service reports are attached.

The eastbound left-turn movement at the intersection of North Carefree Circle/Marksheffel Road is currently operating at LOS F during the morning peak hour and LOS D during the afternoon peak hour.

The southbound left-turn movement at intersection of North Carefree Circle/Antelope Ridge Drive is currently operating at LOS F during the morning peak hour and LOS C during the midday and afternoon peak hours. These are based on *Highway Capacity Manual* procedures analysis and not actual delay measured in the field. The limited sight distance at this intersection may have an effect on delay. The limited sight distance also likely has an effect on motorists' decisions to not use this left-turn movement. If the sight distance were better and/or if the intersection were signalized, the volume of left turns would likely be higher.

All movements at the two-way, stop sign-controlled Pronghorn Meadows Circle/Antelope Ridge Drive south intersection are currently operating at a level of service C or better during the peak hours.

## 2040 BACKGROUND TRAFFIC

Figure 4 shows the projected 2040 background traffic volumes. Background traffic is the traffic estimated to be on the roadways without the Windermere traffic. The estimates assume the

extension of North Carefree Circle east of Marksheffel Road. Background through traffic estimates for North Carefree Circle may be conservative, as traffic increases and the extension of North Carefree Circle into Banning Lewis Ranch will depend largely on the level of growth within Banning Lewis Ranch in this area. Note: The 2040 background traffic volumes account for additional latent southbound left-turn demand at North Carefree/Antelope Ridge Drive, assuming a signal or alternative improvement will be in place, improving the level of service for this turning movement.

## **TRIP GENERATION**

The site-generated vehicle-trips were estimated using the nationally published trip generation rates from *Trip Generation, 10th Edition, 2017* by the Institute of Transportation Engineers (ITE). Table 2 shows the current trip generation estimate. The midday trip generation estimate is based on hourly variation of traffic data recently released by the Institute of Transportation Engineers.

As shown in Table 2, Windermere is projected to generate about 1,916 new vehicle-trips on the average weekday, with about one-half of the vehicles entering and one-half of the vehicles exiting in a 24-hour period. During the morning peak hour, which generally occurs for one hour between 6:30 and 8:30 a.m., about 38 vehicles would enter and 113 vehicles would exit the site. During the midday peak hour, which occurs from 3:00 p.m. to 4:00 pm, about 67 vehicles would enter and 59 vehicles would exit the site. During the afternoon peak hour, which generally occurs for one hour between 4:30 and 6:30 p.m., about 127 vehicles would enter and 74 vehicles would exit the site.

## **DIRECTIONAL DISTRIBUTION AND ASSIGNMENT**

The estimated directional distribution of the site-generated traffic volumes on the adjacent roadways is an important factor in determining the traffic impacts of the site. Figure 5 shows the specific distribution estimates for the short-term and long-term site-generated traffic volumes, respectively. The estimates are based on the following factors: the location of the site with respect to the regional residential employment, commercial, and activity centers and the balance of the Colorado Springs area; the land use proposed for the site; the proposed access system for the site; and the roadway system serving the site. The short-term distribution estimate is based on the existing street network and the long-term distribution estimates assume the extension of Barnes Road and North Carefree Circle east of Marksheffel Road into Banning Lewis Ranch.

When the distribution percentages (from Figure 5) are applied to the trip generation estimates (from Table 2), the site-generated traffic volumes on the adjacent roadways can be determined. Figure 6 shows the short-term site-generated traffic volumes. Figure 7 shows the long-term site-generated traffic volumes.

## **SHORT-TERM TOTAL TRAFFIC**

Figure 8 shows the projected short-term total traffic volumes. The short-term total traffic volumes are the sum of the existing traffic volumes (from Figure 3) plus the short-term

site-generated traffic volumes (from Figure 6). The short-term total traffic volumes identify the short-term impacts of the development.

## **2040 TOTAL TRAFFIC**

Figure 9 shows the projected 2040 total traffic volumes. The 2040 total traffic volumes are the sum of the 2040 background traffic volumes (from Figure 4) plus the long-term site-generated traffic volumes (from Figure 7).

## **PROJECTED INTERSECTION LEVELS OF SERVICE**

The intersections of North Carefree/Marksheffel, North Carefree/Antelope Ridge, Antelope Ridge/Pronghorn Meadows (south), and the proposed north site access point to Antelope Ridge were analyzed to determine the projected levels of service for the short-term total and 2040 background and total traffic volumes, based on the unsignalized intersection analysis procedures from the *Highway Capacity Manual 6<sup>th</sup> Edition* and/or the Synchro signalized intersection procedures. Figures 4, 8, and 9 show the level of service analysis results. The level of service reports are attached.

### **North Carefree/Marksheffel**

The eastbound left-turn movement at the intersection of North Carefree Circle/Marksheffel Road is currently operating at LOS F during the morning peak hour and LOS D during the afternoon peak hour. The City of Colorado Springs has recently completed a traffic signal warrant analysis for this intersection and has indicated it will be converted to traffic signal control, once funding is available. The intersection of North Carefree/Marksheffel is projected to operate at an overall LOS D or better during the peak hours, based on the projected short-term and 2040 total traffic volumes. By 2040, the northbound and eastbound left-turn movements are projected to operate at LOS E during the morning peak hour. These movements have projected delays in the LOS E range simply because they arrive at the traffic signal at the beginning of the red phase at an intersection with many phases and a long cycle length. These movements would not be considered “failing” since their volume-to-capacity ratios are less than one. The justification is that to progress through traffic along an arterial corridor, the traffic signal offsets and left-turn phase times have been adjusted to favor the through band, which can result in higher delay for the left-turn movements even though there is sufficient capacity for them.

### **North Carefree/Antelope Ridge**

The southbound left turn from the stop sign-controlled North Carefree Circle/Antelope Ridge Drive intersection is currently operating at a LOS F during the morning peak hours. With the addition of the projected short-term site-generated traffic, this movement is projected to operate at LOS F during the mid-afternoon peak hour (3:00-4:00 p.m.) and at LOS E during the afternoon peak hour. By 2040, the southbound left-turn and right-turn movements and

eastbound left-turn movement are projected to operate at LOS F during peak hours, based on both background and total traffic volumes (with or without this project). If signalized, this intersection is projected to operate at a satisfactory level of service. There may also be viable alternatives to signalization of this intersection to improve the level of service.

### **Antelope Ridge Full-Movement Access Points**

The proposed full-movement site access points to Antelope Ridge Drive are projected to operate at LOS D or better for all movements during the peak hours as stop sign-controlled intersections, based on the short-term and 2040 total traffic volumes.

### **QUEUING ANALYSIS**

A queuing analysis was performed using Synchro/SimTraffic to determine if the existing turn lanes at the intersection of North Carefree Circle/Antelope Ridge Drive will be sufficient to accommodate the projected queues, based on the short-term and 2040 total traffic volumes. The analysis assumed the intersection of North Carefree/Antelope Ridge has been signalized. The short-term and 2040 total morning peak-hour traffic volumes were entered into the Synchro model. The simulation was run five times. The queuing reports are attached.

Based on the projected short-term total traffic morning peak-hour volumes, the projected maximum southbound queue on Antelope Ridge Drive approaching North Carefree Circle is about 433 feet. The southbound left-turn lane is projected to be blocked during 14 percent of the morning peak hour and the southbound through lane is projected to extend beyond the south access point during one percent of the morning peak hour. By 2040, the queue in the southbound through lane is projected to extend beyond the south intersection during 91 percent of the morning peak hour, if the intersection of Antelope Ridge/North Carefree remains unsignalized. If signalized the maximum southbound left-turn queue is projected to be 333 feet long.

Based on the projected 2040 total traffic morning peak-hour volumes, the projected maximum eastbound left-turn queue on North Carefree Circle approaching Antelope Ridge Drive is about 245 feet if the intersection remains two-way stop sign-controlled and 184 feet if the intersection is signalized. The existing eastbound left-turn lane is about 350 feet long.

### **TRAFFIC SIGNAL WARRANT ANALYSIS**

The intersection of North Carefree Circle/Antelope Ridge Drive has been analyzed to determine if either an Eight-Hour or a Four-Hour Vehicular Volume Traffic Signal Warrant would be met, based on the short-term or 2040 total traffic volumes. Tables 3 and 4 show a detailed analysis for the short-term and 2040 total traffic volumes, respectively.

The traffic signal warrant analysis was performed, based on eight hours of manual traffic counts conducted at the intersection of North Carefree/Antelope Ridge in August 2018. Future off-peak

traffic volumes were based on hourly variation of traffic data recently released by the Institute of Transportation Engineers. The minor approach volume for the short-term traffic signal warrant analysis includes all the southbound left-turning vehicles plus about 25 percent of the southbound right-turning vehicles. This is based on the assumption that, if this intersection were signalized, these vehicles would reroute their trips and make a left turn toward Marksheffel Road. The 2040 background and total traffic volumes shown in Figures 4 and 9 already assume this shift in the existing traffic pattern, so the minor approach volumes shown in Table 4 include only the southbound left-turn movements.

As shown in Table 3, only three of hours analyzed are projected to meet the threshold for the Eight-Hour Vehicular Volume Traffic Signal Warrant and only one of the hours analyzed is projected to meet the threshold for the Four-Hour Vehicular Volume Traffic Signal Warrant, based on the short-term total traffic volumes. As shown in Table 4, by 2040, the signal would likely meet a Four-Hour Vehicular Volume Traffic Signal Warrant, but not an Eight-Hour Vehicular Volume Traffic Signal Warrant.

Another of the MUTCD traffic signal warrants is Crash Experience. However, no crashes were reported at the intersection, between 2016 and February 2019.

Note: Once a signal warrant (or warrants) is satisfied, this does not mean that a signal will necessarily be installed. The decision to install a traffic signal rests with El Paso County.

## **SUBDIVISION STREET CLASSIFICATIONS**

Figure 10 shows the recommended classification for all of the internal streets within Windermere. All of the internal streets should be classified as either Urban Local or Urban Local (Low Volume).

## **DEVIATION REQUESTS**

There are no deviations proposed to the criteria contained in the *El Paso County Engineering Criteria Manual* for the streets within the Windermere development.

## **CONCLUSIONS AND RECOMMENDATIONS**

### **Trip Generation**

- Windermere is projected to generate about 1,916 new vehicle-trips on the average weekday, with about one-half of the vehicles entering and one-half of the vehicles exiting in a 24-hour period. During the morning peak hour, which generally occurs for one hour between 6:30 and 8:30 a.m., about 38 vehicles would enter and 113 vehicles would exit the site. During the midday peak hour, which occurs from 3:00 to 4:00 p.m., about 67 vehicles would enter and 59 vehicles

would exit the site. During the afternoon peak hour, which generally occurs for one hour between 4:30 and 6:30 p.m., about 127 vehicles would enter and 74 vehicles would exit the site.

### **Projected Levels of Service**

- The eastbound left-turn movement at the intersection of North Carefree Circle/Marksheffel Road is currently operating at LOS F during the morning peak hour and LOS D during the afternoon peak hour. The City of Colorado Springs has recently completed a traffic signal warrant analysis for this intersection and has indicated it will be converted to traffic signal control, once funding is available. The intersection of North Carefree/Marksheffel is projected to operate at an overall LOS D or better during the peak hours, based on the projected short-term and 2040 total traffic volumes. By 2040, the northbound and eastbound left-turn movements are projected to operate at LOS E during the morning peak hour. These movements have projected delays in the LOS E range simply because they arrive at the traffic signal at the beginning of the red phase at an intersection with many phases and a long cycle length. These movements would not be considered “failing” since their volume-to-capacity ratios are less than one. The justification is that to progress through traffic along an arterial corridor, the traffic signal offsets and left-turn phase times have been adjusted to favor the through band, which can result in higher delay for the left-turn movements, even though there is sufficient capacity for them.
- The southbound left turn from the stop sign-controlled North Carefree Circle/Antelope Ridge Drive intersection is currently operating at a LOS F during the morning peak hours. With the addition of the projected short-term site-generated traffic, this movement is projected to operate at LOS F during the mid-afternoon (3:00-4:00 p.m.) and LOS E during the afternoon peak hour. By 2040, the southbound left-turn and right-turn movements and eastbound left-turn movement are projected to operate at LOS F during peak hours, based on both background and total traffic volumes (with or without this project). If signalized, this intersection is projected to operate at a satisfactory level of service. There may also be viable alternatives to the conventional, four-leg signalized intersection to improve the level of service.
- The proposed full-movement site access points to Antelope Ridge Drive are projected to operate at LOS D or better for all movements during the peak hours as stop sign-controlled intersections, based on the short-term and 2040 total traffic volumes.

### **Intersection Sight Distance**

- The access point locations on Antelope Ridge Drive meet ECM criteria for stopping sight distance and intersection sight distance.

### **Traffic Signal Warrant**

- The intersection of North Carefree Circle/Antelope Ridge Drive is not projected to meet an Eight-Hour or Four-Hour Vehicular Volume Traffic Signal Warrant, based on the projected short-term total traffic volumes. By 2040, but not prior, a Four-Hour Vehicular Volume warrant is projected to be met, based on assumed linear growth rates in through traffic. The timing of a warrant being met will depend, in part, on the growth in through traffic on North Carefree Circle. Refer to the Traffic Signal Warrant Analysis section of this report for additional detail.

### **Roadway Improvements**

- Based on the short-term total traffic volumes and the criteria contained in the ECM, a southbound left-turn lane is projected to be warranted on Antelope Ridge Drive approaching the north site access point. A southbound left-turn lane would not be required approaching the south access point. However, in the vicinity of the site, Antelope Ridge Drive has an existing painted median. Antelope Ridge should be restriped to provide southbound left-turn lanes approaching both site access points. Based on a design speed of 40 mph the left-turn lanes should be 180 feet long plus a 160-foot taper.
- Based on the short-term and 2040 total traffic volumes and the criteria contained in the ECM, a northbound right-turn deceleration lane is projected to be warranted on Antelope Ridge Drive approaching the north site access point, but not the south access point. Based on a design speed of 40 mph, the right-turn lane should be 155 feet long plus a 160-foot taper.
- In order to mitigate the intersection sight distance deficiency at North Carefree/Antelope Ridge Drive until through volumes are sufficiently high for a traffic signal warrant to be met, and/or as potential alternatives to signalization, the County could consider the following:
  - Reducing eastbound North Carefree to two-through lanes and utilizing the width of the inside lane to create a wider median area. This wider median could be used for a two-stage left-turning movement for southbound left turns. A variation of this concept that might be considered is the use of a “channelized T” configuration (the access on the south side of the intersection would become a right-in/right-out). The relatively short distance to the Marksheffel intersection may eliminate this option from consideration or require a variation to the traditional channelized T (which uses a left-turn acceleration lane).
  - Another option could be to convert the intersection to a “three-quarter movement” by prohibiting the southbound left turn and enhancing the U-turn capability at the intersection to the west. The left-turn lane queuing would need to be evaluated, and treatments could be investigated to deal with the competing northbound right turns, but there are three through lanes and an acceleration lane just east of the Akers intersection, which easily accommodates

U-turns of most vehicles. Installation of a raised northbound right-turn island would separate westbound U-turning traffic from northbound right-turning traffic, eliminating this conflict. This concept could be considered a variation of the “Michigan Left” where motorists are forced to turn right and are provided a downstream opportunity to complete a U-turn as opposed to being offered a left-turn opportunity at an intersection.

- Figure 10 shows the recommended classification for all of the internal streets within Windermere. All of the internal streets should be classified as either Urban Local or Urban Local (Low Volume).

### **Marksheffel/North Carefree Intersection**

The City of Colorado Springs has recently completed a traffic signal warrant analysis for this intersection and has indicated it will be converted to traffic signal control, once funding is available.

### **County Road Free Program**

The applicant will be required to participate in the County Road Impact Fee Program. Assuming this development joins the ten-mil PID, the building permit fee portion is \$1,221 per single-family dwelling unit. The net fee for the proposed 203 lots would be \$247,863.

\* \* \* \* \*

Please contact me if you have any questions regarding this report.

Respectfully Submitted,

LSC TRANSPORTATION CONSULTANTS, INC.

By: \_\_\_\_\_  
Jeffrey C. Hodsdon, P.E.  
Principal

JCH/KDF:jas

Enclosures: Table 2-4  
Figures 1-10  
Traffic Count Reports  
Level of Service Reports  
MTCP Maps



## Tables and Figures

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Table 2 Trip Generation Estimate Windermere																
Land Use Code	Land Use Description	Trip Generation Units	Trip Generation Rates <sup>(1)</sup>							Total Trips Generated						
			Average Weekday Traffic	Morning		School Afternoon		Afternoon		Average Weekday Traffic	Morning		School Afternoon		Afternoon	
				Peak Hour In	Peak Hour Out	Peak Hour <sup>(2)</sup> In	Peak Hour <sup>(2)</sup> Out	Peak Hour In	Peak Hour Out		Peak Hour In	Peak Hour Out	Peak Hour In	Peak Hour Out		
210	Single-Family Detached Housing	203 DU <sup>(3)</sup>	9.44	0.19	0.56	0.33	0.29	0.62	0.37	1,916	38	113	67	59	127	74
Notes: (1) Source: "Trip Generation, 10th Edition, 2017" by the Institute of Transportation Engineers (ITE) (2) Based on 2018 ITE data on the hourly distribution of vehicle trips for Land Use 210 from 3:00 to 4:00 PM (3) DU = dwelling unit																
Source: LSC Transportation Consultants, Inc.																

(1) Source: "Trip Generation, 10th Edition, 2017" by the Institute of Transportation Engineers (ITE)

(3) DU = dwelling unit

Source: LSC Transportation Consultants, Inc.

**Table 3**  
**Windermere**  
**Traffic Signal Warrant Analysis of North Carefree Circle/Antelope Ridge Drive**  
**MUTCD Warrants 1 and 2**  
**Short-Term Total Traffic**

Traffic Volumes										Warrant 1, Eight Hour Vehicular Volume Evaluation <sup>(5)</sup>								Warrant 2, Four Hour Vehicular Volume Evaluation <sup>(5)</sup>			
										Warrant Thresholds				Warrant Threshold Met?				Existing		Short-Term	
										Condition A		Condition B		Existing		Short-Term		Warrant Threshold Minor	Warrant Theshold Met?	Warrant Threshold Minor	Warrant Theshold Met?
										Major <sup>(2)</sup>	Minor <sup>(3)</sup>	Major	Minor	A	B	A	B	Minimum		Minimum	
Hour	Existing <sup>(1)</sup>	Minor <sup>(3)</sup>	EB LT	WB TH	WB RT	SB LT	SB RT	Major <sup>(2)</sup>	Minor <sup>(3)</sup>	Major	Minor	Major	Minor	A	B	A	B				
6:30-7:30 AM	596	141	6	0	6	14	23	608	155	600	150	900	75	No	No	Yes	No	292	No	287	No
7:30-8:30 AM	620	227	12	0	12	25	39	644	252	600	150	900	75	Yes	No	Yes	No	282	No	272	No
or																					
7:00 - 8:00 AM	834	260	15	0	15	29	45	864	289	600	150	900	75	Yes	No	Yes	No	192	Yes	184	Yes
11:00 AM - Noon	368	41	21	0	20	12	20	409	53	600	150	900	75	No	No	No	No	406	No	386	No
Noon - 1:00 PM	433	41	21	0	21	14	21	475	55	600	150	900	75	No	No	No	No	374	No	353	No
2:00 - 3:00 PM	617	54	27	0	26	15	24	670	69	600	150	900	75	No	No	No	No	283	No	262	No
3:00-4:00 PM	702	199	27	0	26	15	24	755	214	600	150	900	75	Yes	No	Yes	No	249	No	223	No
4:00 - 5:00 PM	826	60	50	0	50	19	30	926	79	600	150	900	75	No	No	No	Yes	194	No	169	No
5:00 - 6:00 PM	896	63	39	0	39	18	28	974	81	600	150	900	75	No	No	No	Yes	176	No	157	No
														2	0	3	2		1		1
														No	No	No	No		No		No

Notes:

- (1) Based on counts by LSC in August 2018.
- (2) North Carefree Circle eastbound and westbound left-turn, through, and right-turn volumes.
- (3) Antelope Ridge Drive southbound left-turn volume plus 25% of the southbound right-turn volume.  
(25% of the southbound right-turn vehicles were assumed to reroute their trips and make a left turn towards Marksheffel Road if this intersection were to be signalized.)
- (4) Off-peak site-generated traffic volumes are based on 2018 ITE data on the hourly distribution of vehicle trips for Land Use 210.
- (5) Thresholds are based on 2 or more lanes on major approach and 1 lane on minor approach.

Source: LSC Transportation Consultants, Inc.

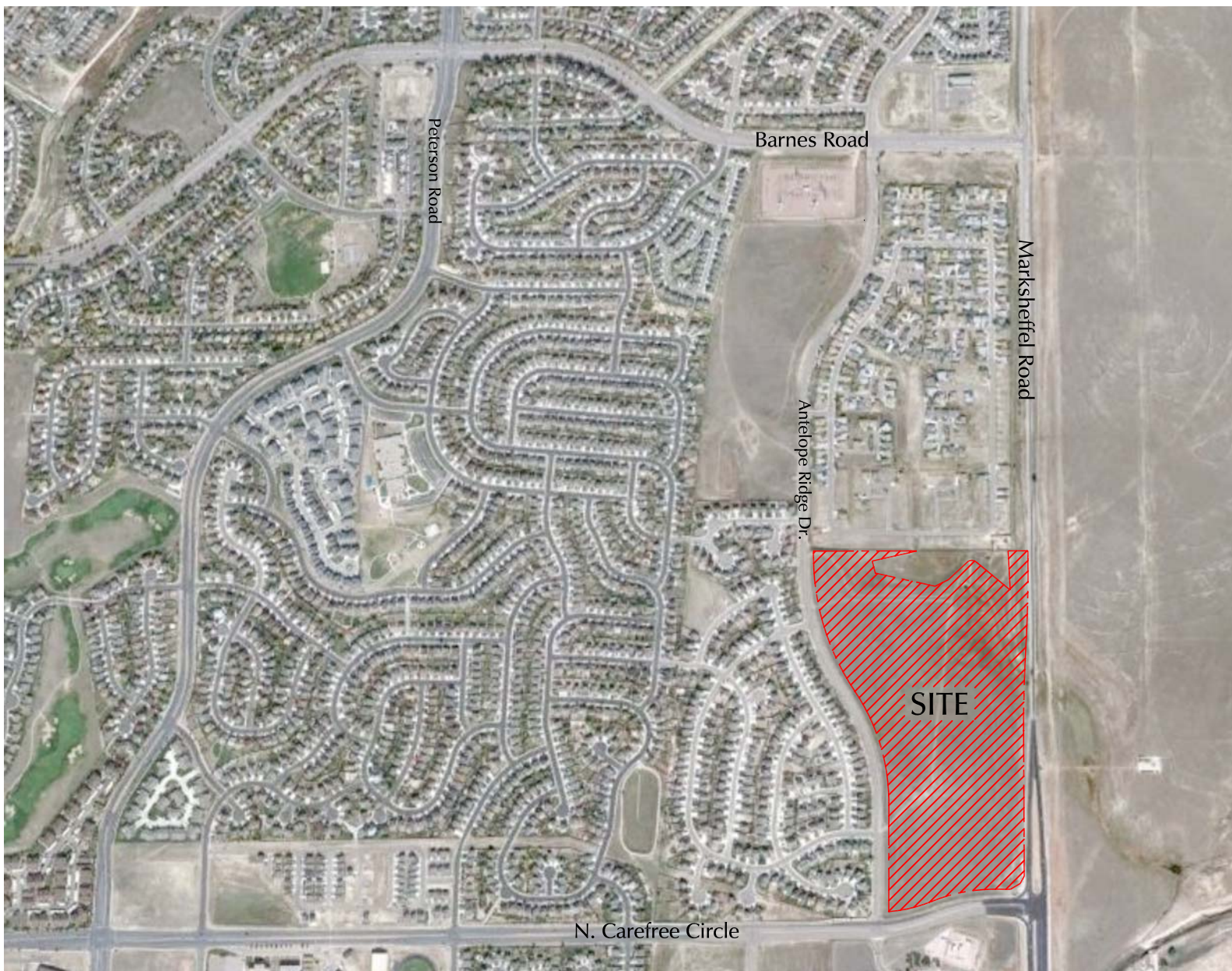
<p>Table 4</p> <p>Windermere</p> <p>Traffic Signal Warrant Analysis of North Carefree Circle/Antelope Ridge Drive</p> <p>MUTCD Warrants 1 and 2</p> <p>2040 Total Traffic</p>
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Warrant 2, Four Hour Vehicular Volume Evaluation <sup>(5)</sup>																					
Warrant 1, Eight Hour Vehicular Volume Evaluation <sup>(5)</sup>										Warrant 2, Four Hour Vehicular Volume Evaluation <sup>(5)</sup>											
Traffic Volumes										Warrant Thresholds				Warrant Threshold Met?				2040 Background		2040 Total	
Hour	2040 Background Traffic		Site-Generated Traffic <sup>(4)</sup>					Estimated 2040 Total Volume		Condition A		Condition B		2040 Background		2040 Total		Warrant Threshold Minor	Warrant Threshold Met?	Warrant Threshold Minor	Warrant Threshold Met?
	Major <sup>(2)</sup>	Minor <sup>(3)</sup>	EB LT	WB TH	WB RT	SB LT	SB RT	Major <sup>(2)</sup>	Minor <sup>(3)</sup>	Major	Minor	Major	Minor	A	B	A	B	Minimum		Minimum	
6:30-7:30 AM	1517	144	5	0	7	18	20	1529	162	600	150	900	75	No	Yes	Yes	Yes	80	Yes	80	Yes
7:30-8:30 AM	1259	234	11	0	14	30	34	1284	264	600	150	900	75	Yes	Yes	Yes	Yes	94	Yes	92	Yes
11:00 AM - Noon	1040	52	18	0	24	15	17	1082	67	600	150	900	75	No	No	No	No	138	No	125	No
Noon - 1:00 PM	1260	55	18	0	25	17	19	1303	72	600	150	900	75	No	No	No	No	94	No	90	No
2:00 - 3:00 PM	1429	69	23	0	32	18	21	1484	87	600	150	900	75	No	No	No	Yes	80	No	80	Yes
3:00-4:00 PM	2020	213	23	0	31	18	21	2074	231	600	150	900	75	Yes	Yes	Yes	Yes	80	Yes	80	Yes
4:00 - 5:00 PM	2238	75	44	0	60	23	26	2342	98	600	150	900	75	No	No	No	Yes	80	No	80	Yes
5:00 - 6:00 PM	3118	69	35	0	46	22	25	3199	91	600	150	900	75	No	No	No	Yes	80	No	80	Yes
														2	3	3	6		3		6
														No	No	No	No		No		No

Notes:

- (1) Based on counts by LSC in August 2018.
- (2) North Carefree Circle eastbound and westbound left-turn, through, and right-turn volumes.
- (3) Antelope Ridge Drive southbound left-turn volume only.
- (4) Off-peak site-generated traffic volumes are based on 2018 ITE data on the hourly distribution of vehicle trips for Land Use 210.
- (5) Thresholds are based on 2 or more lanes on major approach and 1 lane on minor approach.

Source: LSC Transportation Consultants, Inc.

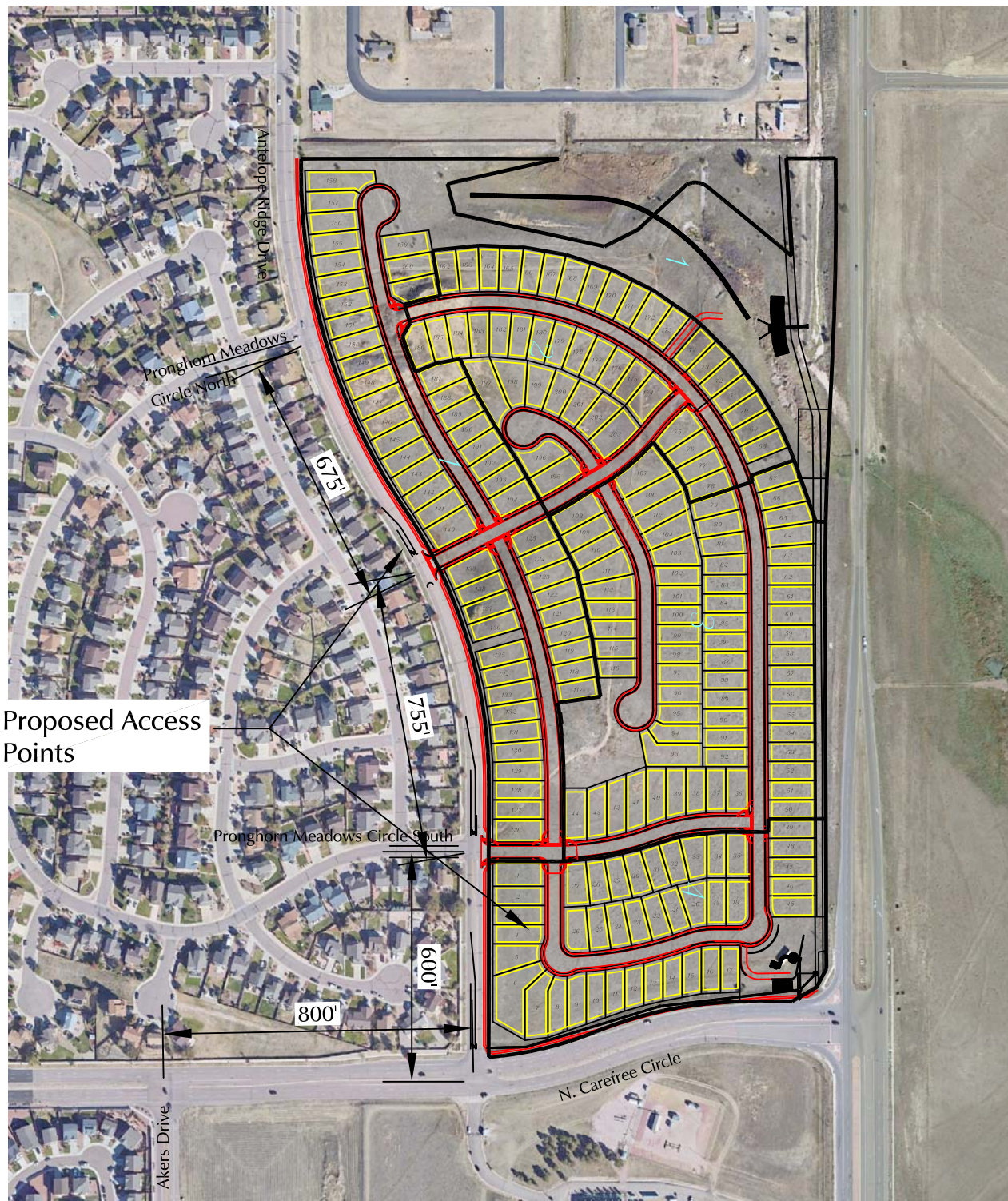


Approximate Scale  
Scale: 1" = 1,000'

Figure 1  
**Vicinity  
Map**

Windmere (LSC #184640)





Proposed Access  
Points

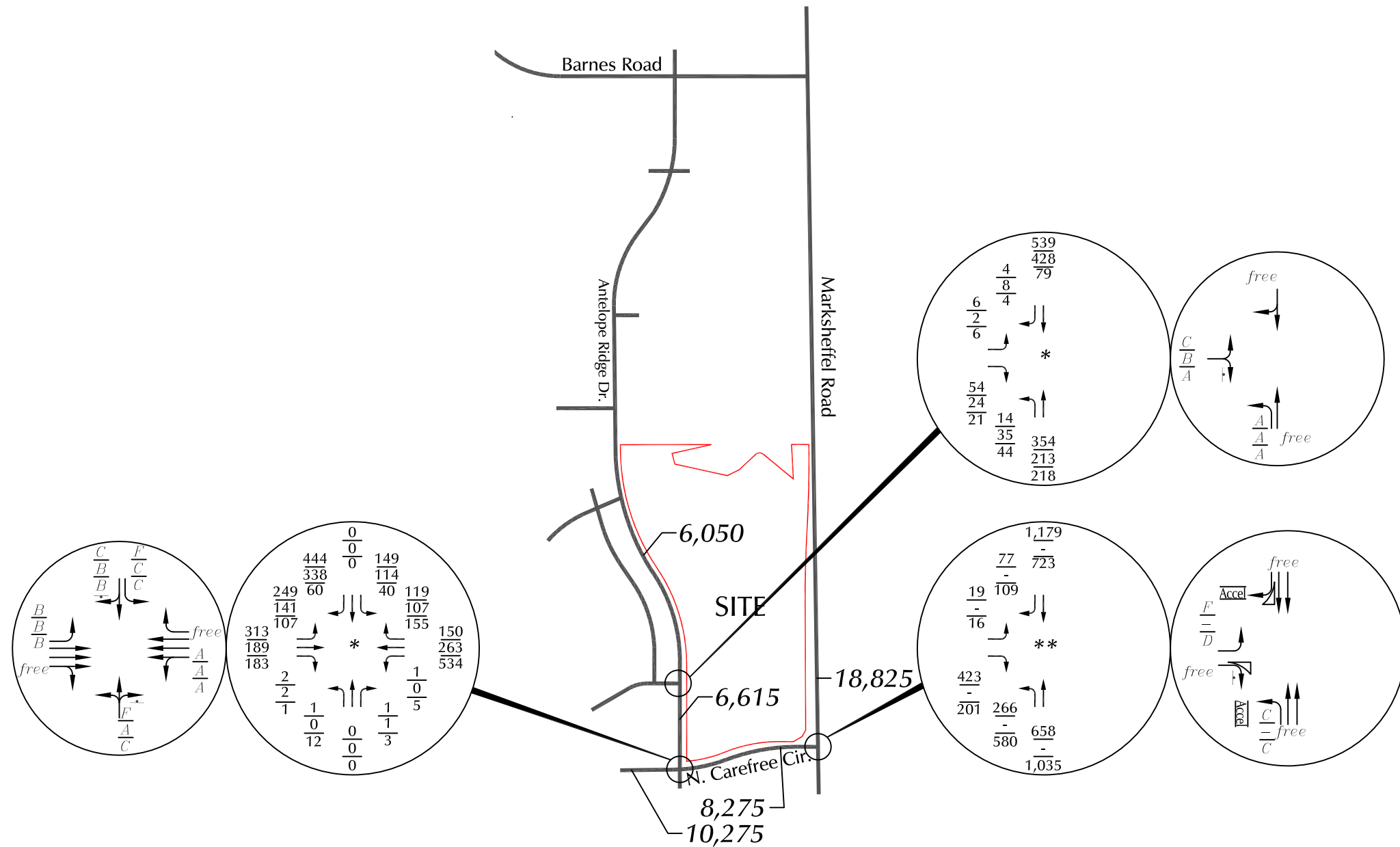


Approximate Scale  
Scale: 1"= 400'

Figure 2  
Site  
Plan

Windmere (LSC #144540)





LEGEND:

• = Stop Sign

⬢ = Traffic Signal

XX = AM Weekday Peak-Hour Traffic (vehicles per hour)  
XX = Midday Weekday Peak-Hour Traffic (vehicles per hour)  
XX = PM Weekday Peak-Hour Traffic (vehicles per hour)

$\frac{A}{B}$  = AM Individual Movement Peak-Hour Level of Service  
 $\frac{A}{B}$  = Individual Movement Peak-Hour Level of Service (3:00-4:00pm)  
 $\frac{A}{C}$  = PM Individual Movement Peak-Hour Level of Service

$\frac{A}{C}$  = AM Entire Intersection Peak-Hour Level of Service  
 $\frac{A}{C}$  = Entire Intersection Peak-Hour Level of Service (3:00-4:00pm)  
 $\frac{A}{D}$  = PM Entire Intersection Peak-Hour Level of Service

16,330 = Average Weekday Traffic (vehicles per day)

\* Based on counts August 2018  
\*\* Based on counts Feb 2019

Figure 3  
Existing Traffic,  
Lane Geometry, Traffic Control  
and Levels of Service

Windmere (LSC #184640)



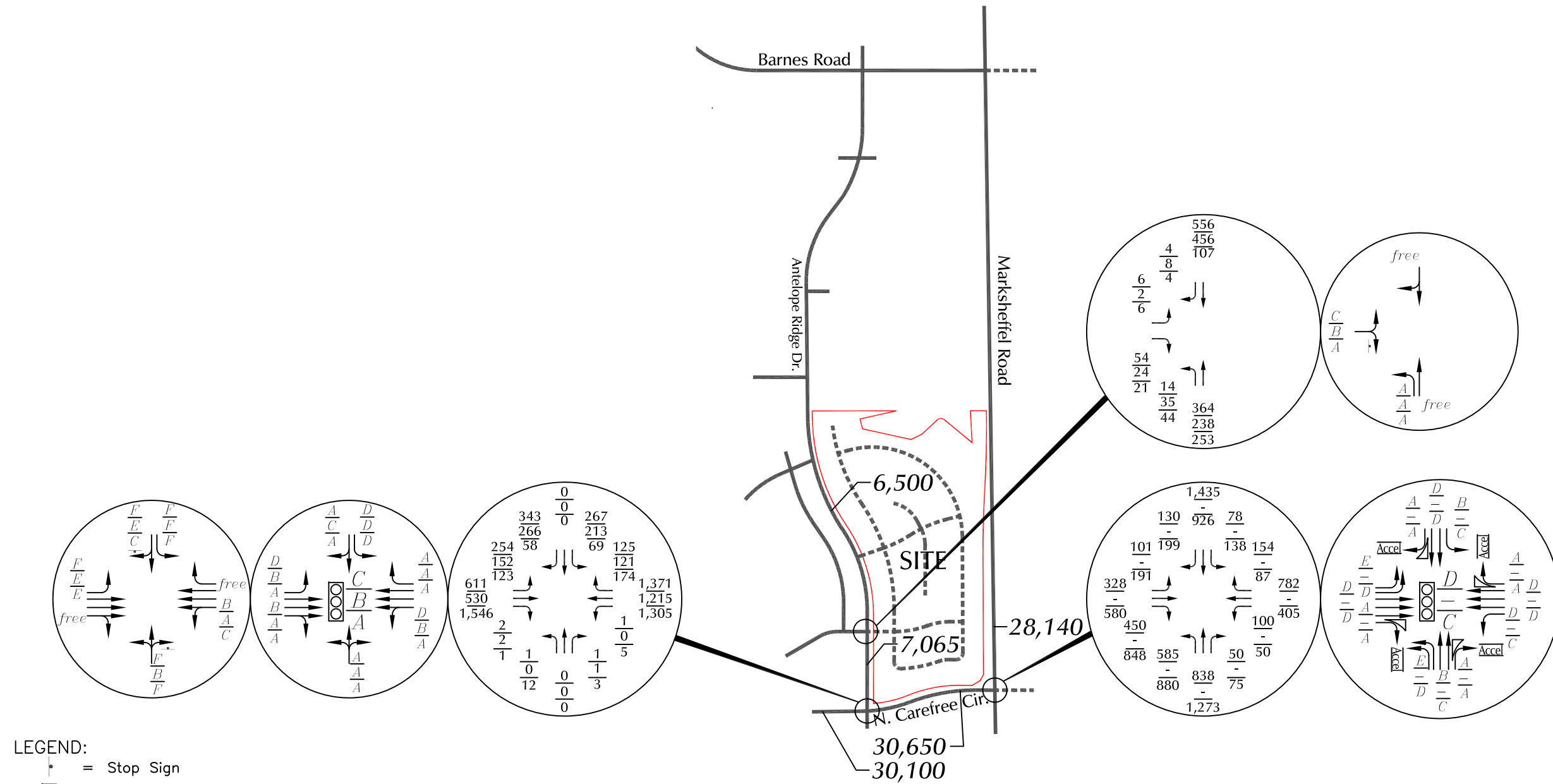
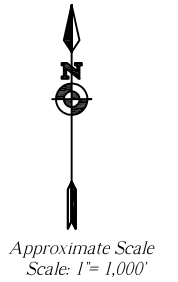
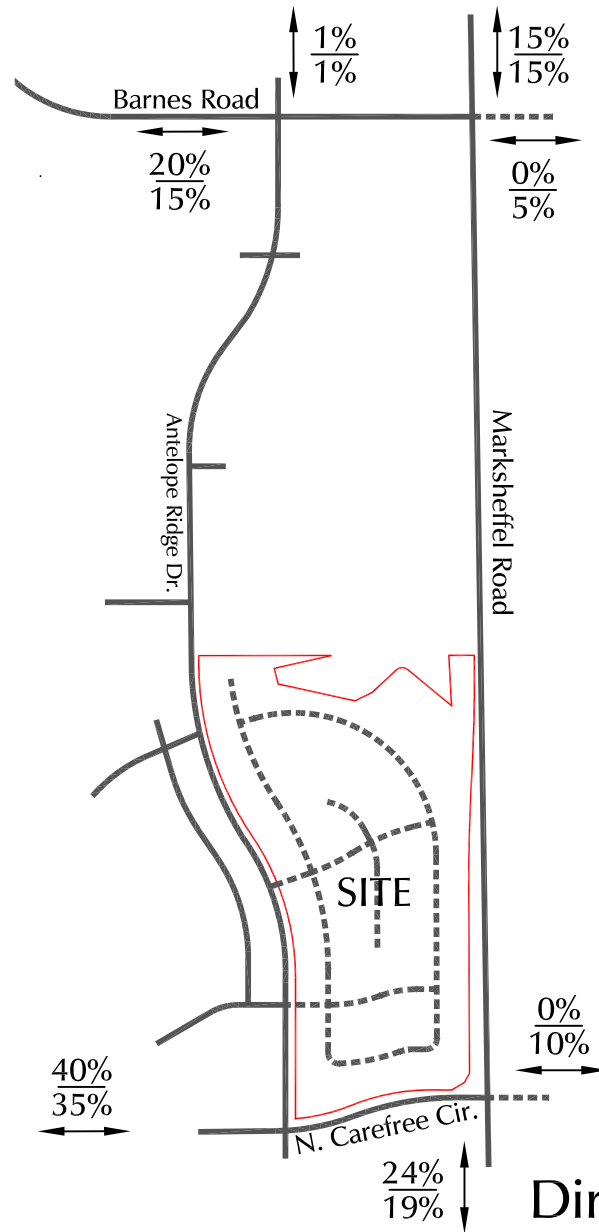


Figure 4  
Year 2040 Background Traffic,  
Lane Geometry, Traffic Control  
and Levels of Service  
Windmere (LSC #184640)





LEGEND:



35%  
50%

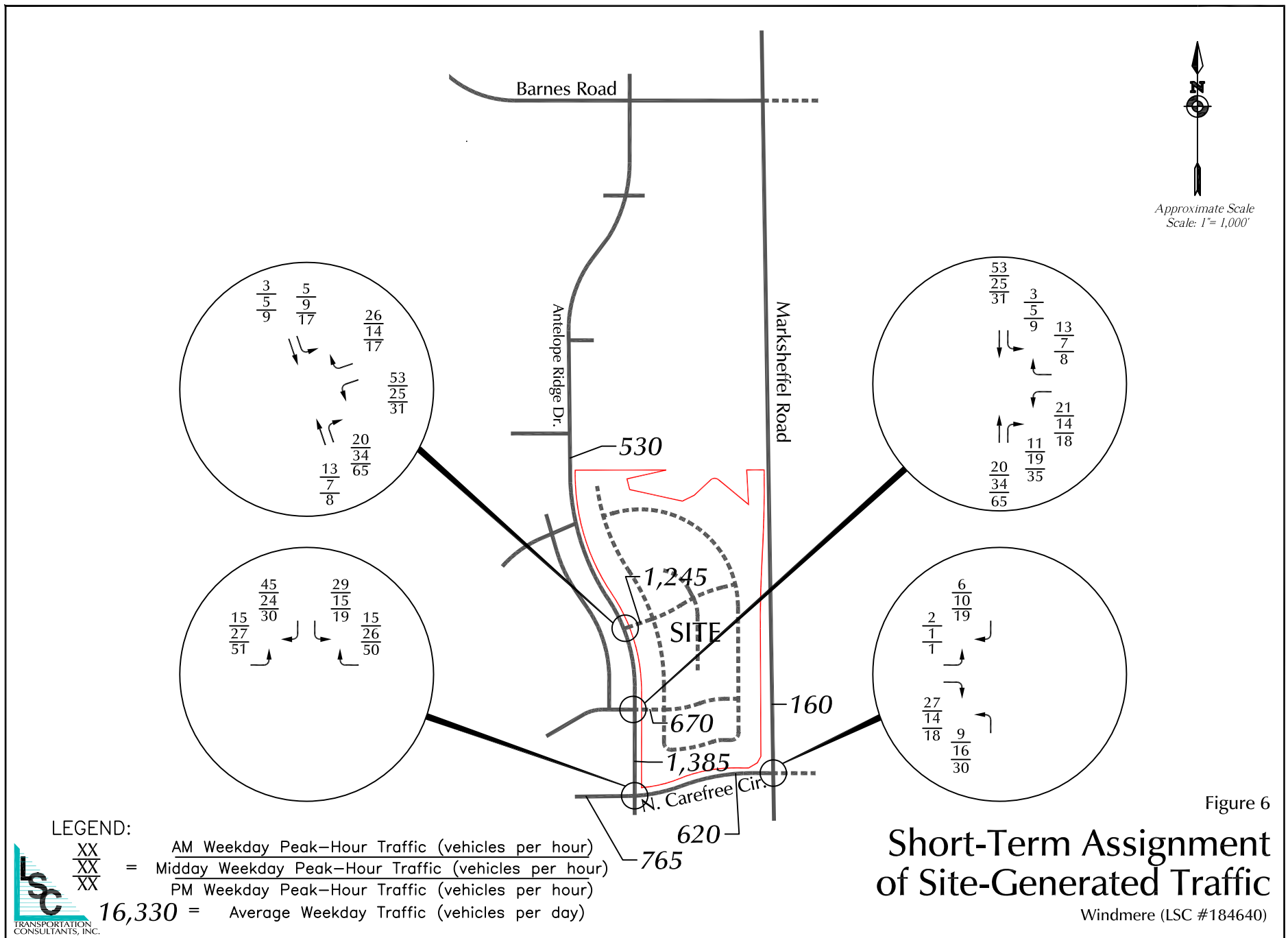
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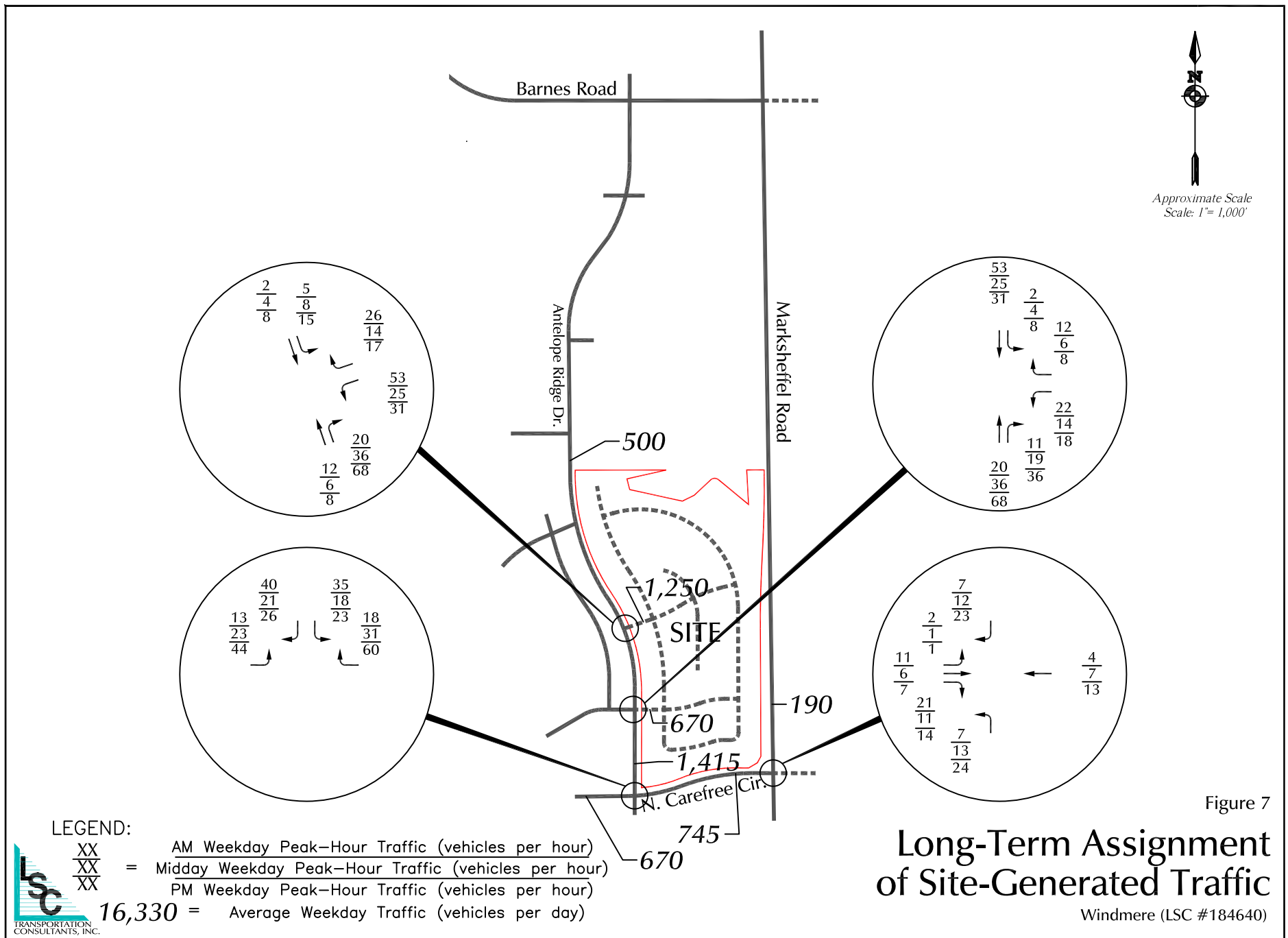
Short-Term Percent Directional Distribution  
Long-Term Percent Directional Distribution

Figure 5

## Directional Distribution of Site-Generated Traffic

Windmere (LSC #184640)





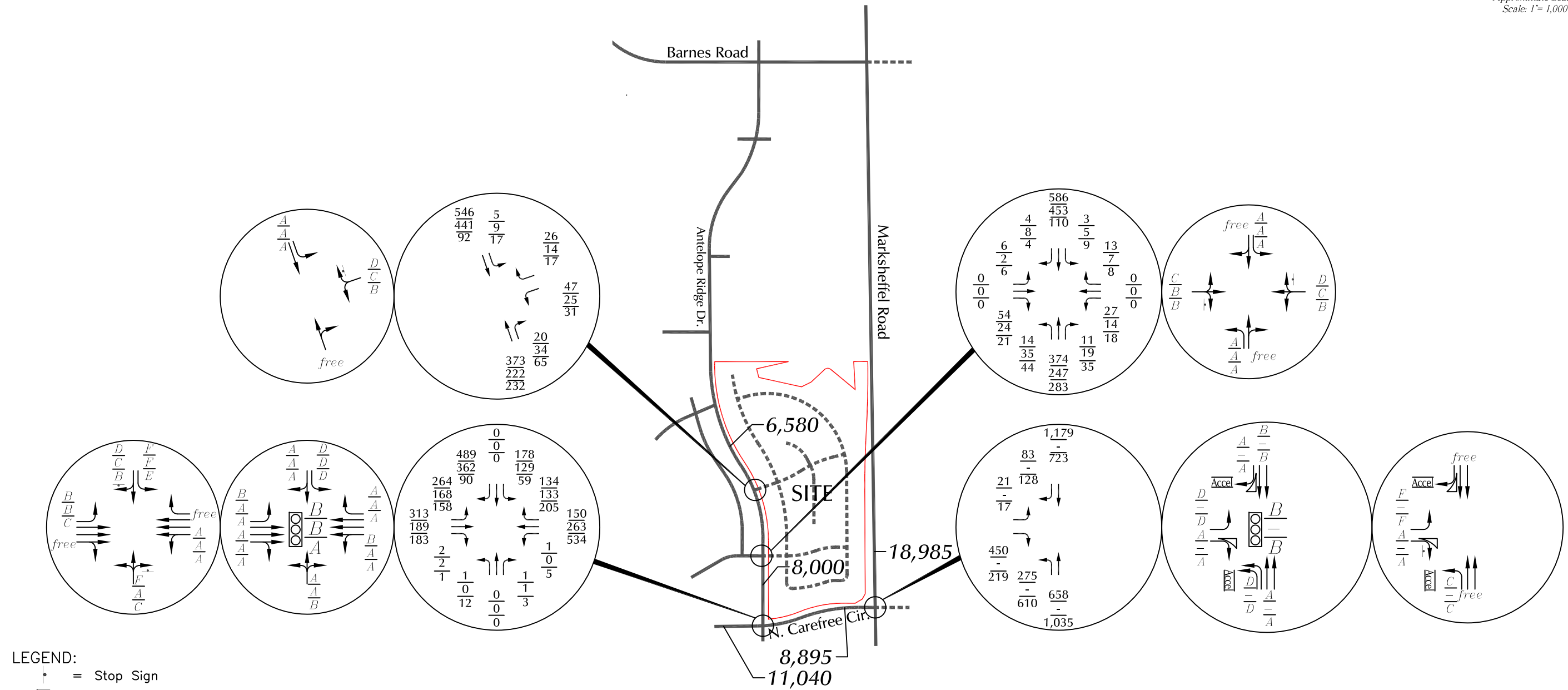


Figure 8

# Short-Term Total Traffic, Lane Geometry, Traffic Control and Levels of Service

Windmere (LSC #184640)

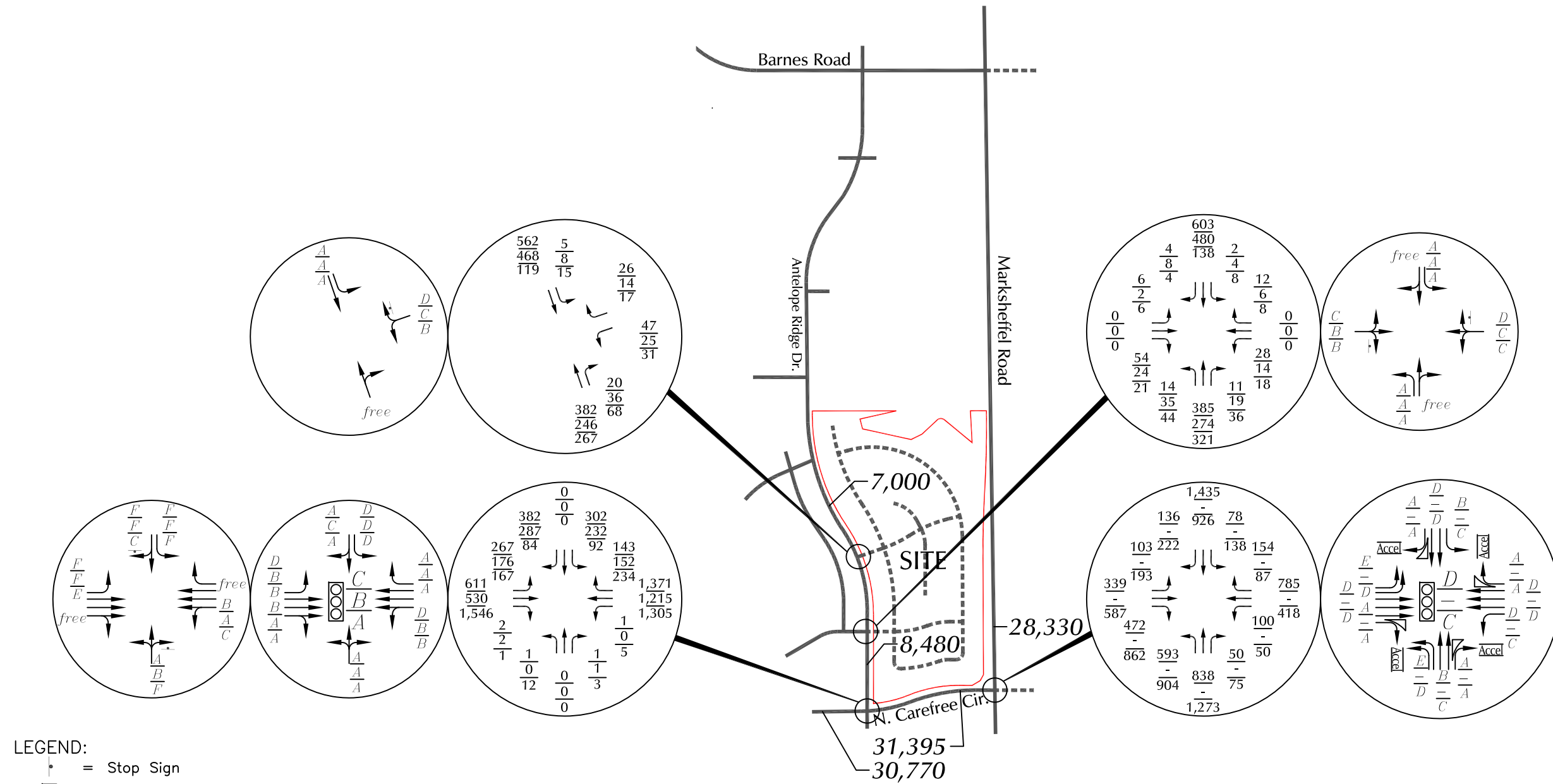


Figure 9  
Year 2040 Total Traffic,  
Lane Geometry, Traffic Control  
and Levels of Service  
Windmere (LSC #184640)

Pronghorn Meadows  
Circle North

Antelope Ridge Dr.

Pronghorn Meadows Circle South

Marksheffel Road

N. Carefree Circle

Approximate Scale  
Scale: 1" = 300'

LEGEND:

- = Urban Local
- = Urban Local (low volume)

Figure 10

# Street Classifications

Windmere (LSC #184640)



# Traffic Counts

---

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Colorado Springs, CO 80905

719-633-2868

File Name : Antelope Ridge Dr - S Pronghorn Meadows Dr AM

Site Code : 00184640

Start Date : 8/15/2018

Page No : 1

## Groups Printed- Unshifted

	Antelope Ridge Dr Southbound				Westbound				Antelope Ridge Dr Northbound				S Pronghorn Meadows Dr Eastbound				Int. Total
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	
06:30	0	17	1	0	0	0	0	0	3	10	0	0	1	0	8	0	40
06:45	0	37	0	0	0	0	0	0	1	25	0	0	1	0	16	0	80
Total	0	54	1	0	0	0	0	0	4	35	0	0	2	0	24	0	120
07:00	0	39	0	0	0	0	0	0	2	47	0	0	0	0	12	0	100
07:15	0	72	0	0	0	0	0	0	6	86	0	0	2	0	16	0	182
07:30	0	184	1	0	0	0	0	0	3	157	0	0	0	0	17	0	362
07:45	0	198	3	0	0	0	0	0	3	61	0	0	4	0	9	0	278
Total	0	493	4	0	0	0	0	0	14	351	0	0	6	0	54	0	922
08:00	0	61	1	0	0	0	0	0	4	8	0	0	1	0	4	0	79
08:15	0	21	0	0	0	0	0	0	1	18	0	0	1	0	7	0	48
Grand Total	0	629	6	0	0	0	0	0	23	412	0	0	10	0	89	0	1169
Apprch %	0	99.1	0.9	0	0	0	0	0	5.3	94.7	0	0	10.1	0	89.9	0	
Total %	0	53.8	0.5	0	0	0	0	0	2	35.2	0	0	0.9	0	7.6	0	



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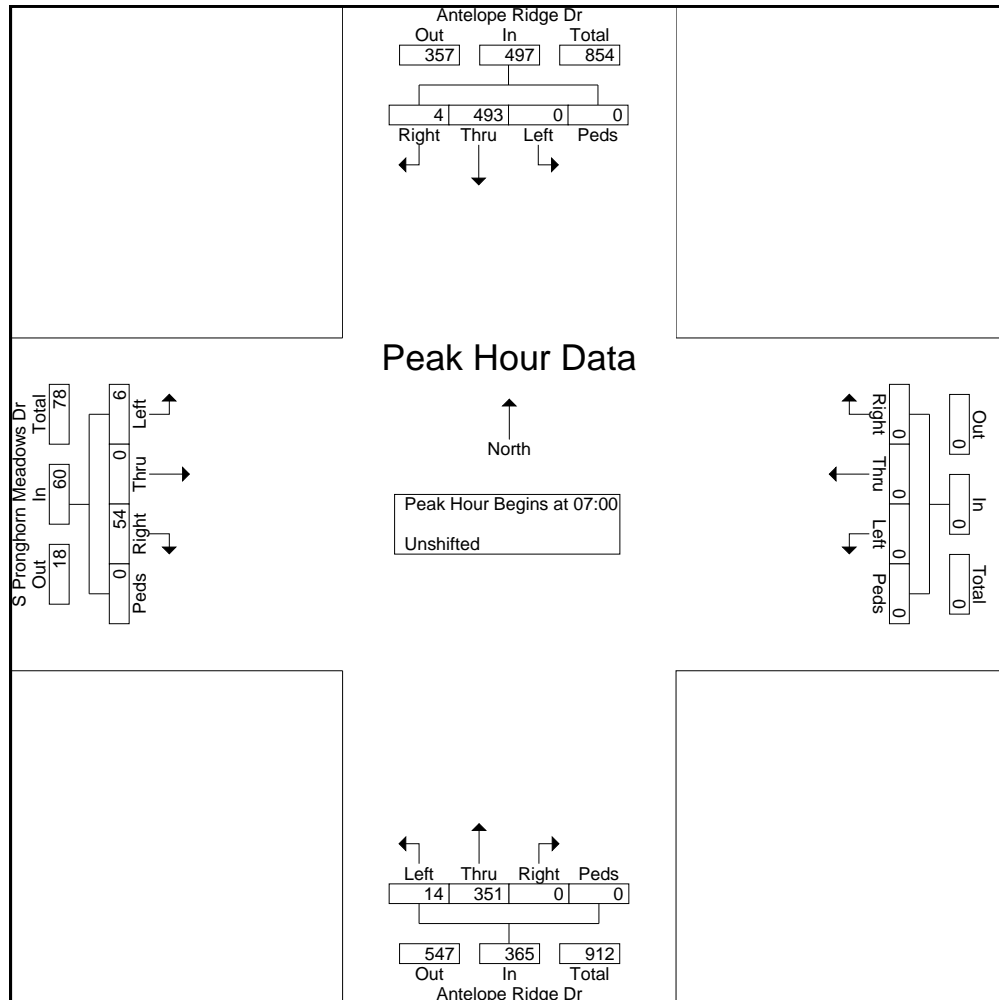
File Name : Antelope Ridge Dr - S Pronghorn Meadows Dr AM

Site Code : 00184640

Start Date : 8/15/2018

Page No : 2

	Antelope Ridge Dr Southbound					Westbound					Antelope Ridge Dr Northbound					S Pronghorn Meadows Dr Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 6:30:00 AM to 8:15:00 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 7:00:00 AM																					
7:00:00 AM	0	39	0	0	39	0	0	0	0	0	2	47	0	0	49	0	0	12	0	12	100
7:15:00 AM	0	72	0	0	72	0	0	0	0	0	6	86	0	0	92	2	0	16	0	18	182
7:30:00 AM	0	184	1	0	185	0	0	0	0	0	3	157	0	0	160	0	0	17	0	17	362
7:45:00 AM	0	198	3	0	201	0	0	0	0	0	3	61	0	0	64	4	0	9	0	13	278
Total Volume	0	493	4	0	497	0	0	0	0	0	14	351	0	0	365	6	0	54	0	60	922
% App. Total	0	99.2	0.8	0		0	0	0	0		3.8	96.2	0	0		10	0	90	0		
PHF	.000	.622	.333	.000	.618	.000	.000	.000	.000	.000	.583	.559	.000	.000	.570	.375	.000	.794	.000	.833	.637



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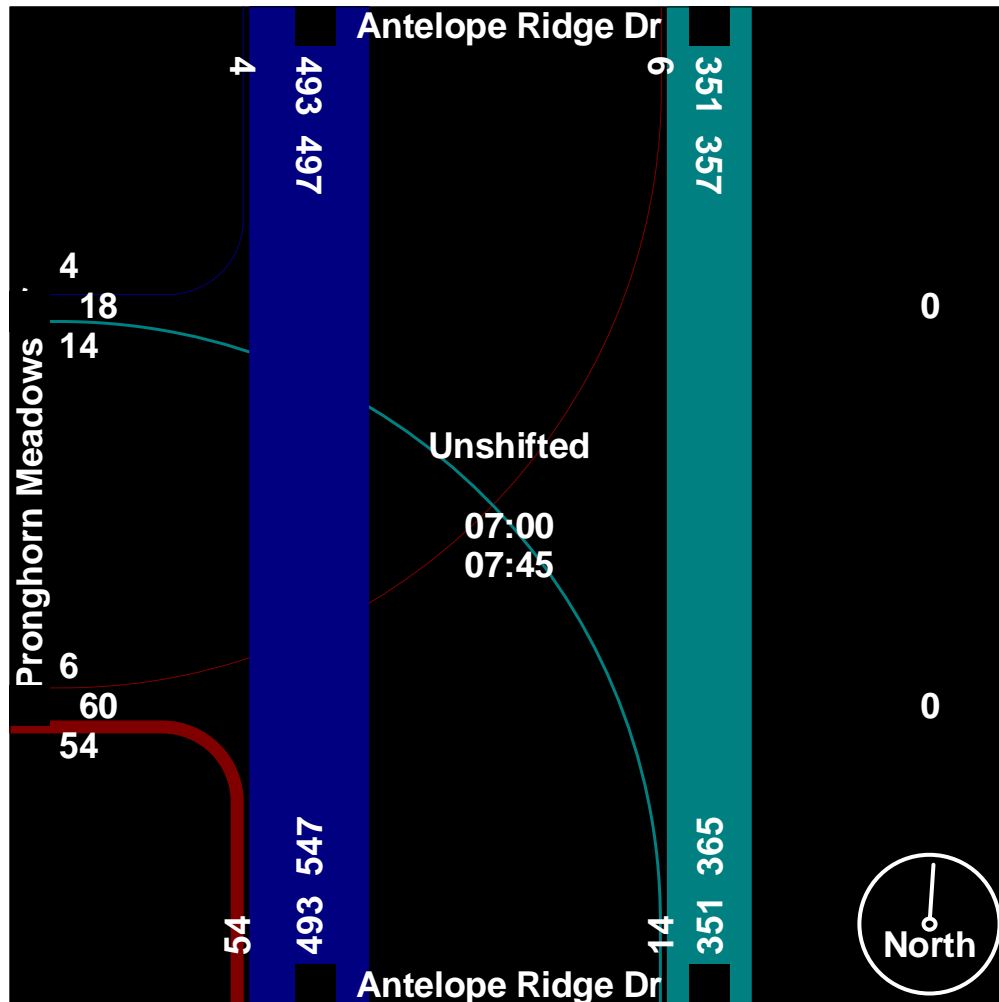
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Site Code : 00184640

Start Date : 8/15/2018

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Site Code : 00184640  
Start Date : 8/15/2018  
Page No : 1

## Groups Printed- Unshifted

	Antelope Ridge Dr Southbound				Westbound				Antelope Ridge Dr Northbound				S Pronghorn Meadows Dr Eastbound				
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Int. Total
16:00	0	27	2	0	0	0	0	0	12	37	0	0	1	0	7	0	86
16:15	0	19	4	0	0	0	0	0	13	42	0	0	0	0	5	0	83
16:30	0	24	0	0	0	0	0	0	8	30	0	0	2	0	7	0	71
16:45	0	12	5	0	0	0	0	0	9	51	0	0	0	0	8	0	85
Total	0	82	11	0	0	0	0	0	42	160	0	0	3	0	27	0	325
17:00	0	21	0	0	0	0	0	0	8	63	0	0	2	0	6	0	100
17:15	0	26	3	0	0	0	0	0	14	67	0	0	1	0	4	0	115
17:30	0	24	0	0	0	0	0	0	6	43	0	0	1	0	7	0	81
17:45	0	36	1	0	0	0	0	0	16	42	0	0	2	0	4	0	101
Total	0	107	4	0	0	0	0	0	44	215	0	0	6	0	21	0	397
Grand Total	0	189	15	0	0	0	0	0	86	375	0	0	9	0	48	0	722
Apprch %	0	92.6	7.4	0	0	0	0	0	18.7	81.3	0	0	15.8	0	84.2	0	
Total %	0	26.2	2.1	0	0	0	0	0	11.9	51.9	0	0	1.2	0	6.6	0	

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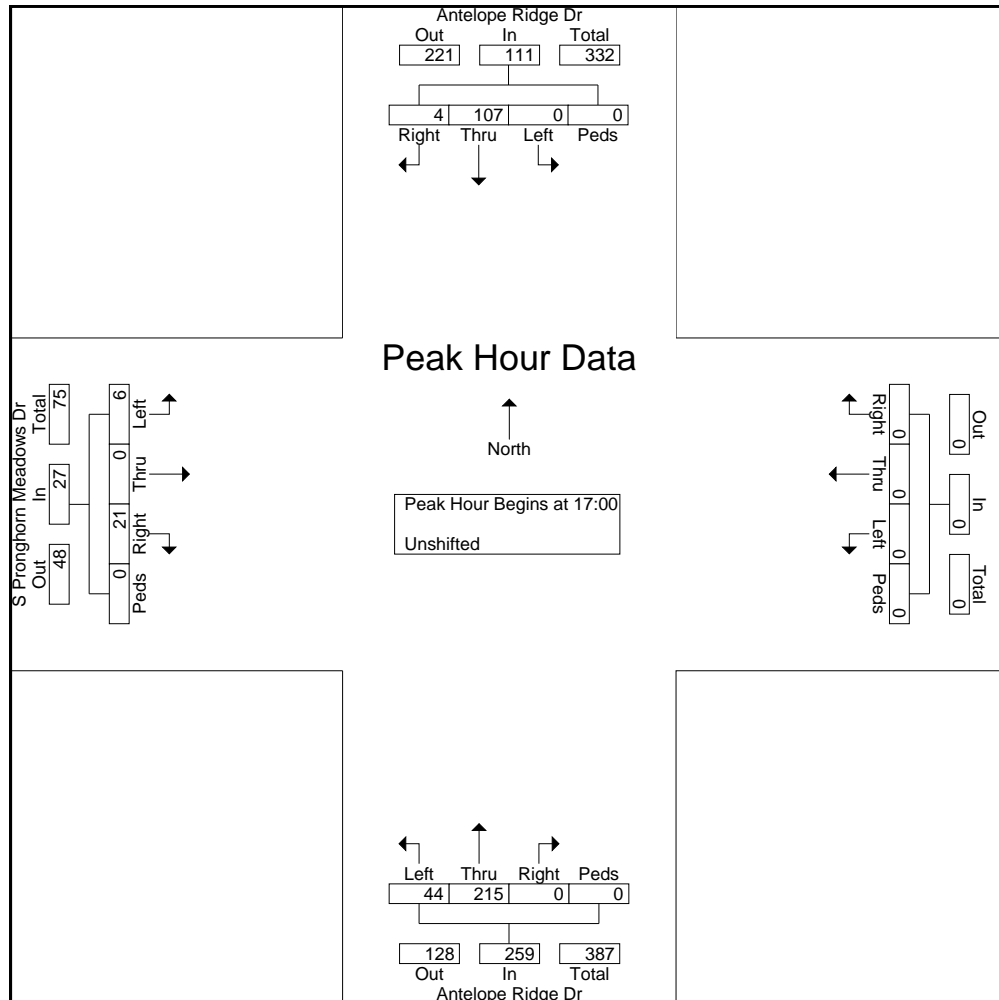
File Name : Antelope Ridge Dr - S Pronghorn Meadows Dr PM

Site Code : 00184640

Start Date : 8/15/2018

Page No : 2

	Antelope Ridge Dr Southbound					Westbound					Antelope Ridge Dr Northbound					S Pronghorn Meadows Dr Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 17:00																					
17:00	0	21	0	0	21	0	0	0	0	0	8	63	0	0	71	2	0	6	0	8	100
17:15	0	26	3	0	29	0	0	0	0	0	14	67	0	0	81	1	0	4	0	5	115
17:30	0	24	0	0	24	0	0	0	0	0	6	43	0	0	49	1	0	7	0	8	81
17:45	0	36	1	0	37	0	0	0	0	0	16	42	0	0	58	2	0	4	0	6	101
Total Volume	0	107	4	0	111	0	0	0	0	0	44	215	0	0	259	6	0	21	0	27	397
% App. Total	0	96.4	3.6	0		0	0	0	0		17	83	0	0		22.2	0	77.8	0		
PHF	.000	.743	.333	.000	.750	.000	.000	.000	.000	.000	.688	.802	.000	.000	.799	.750	.000	.750	.000	.844	.863



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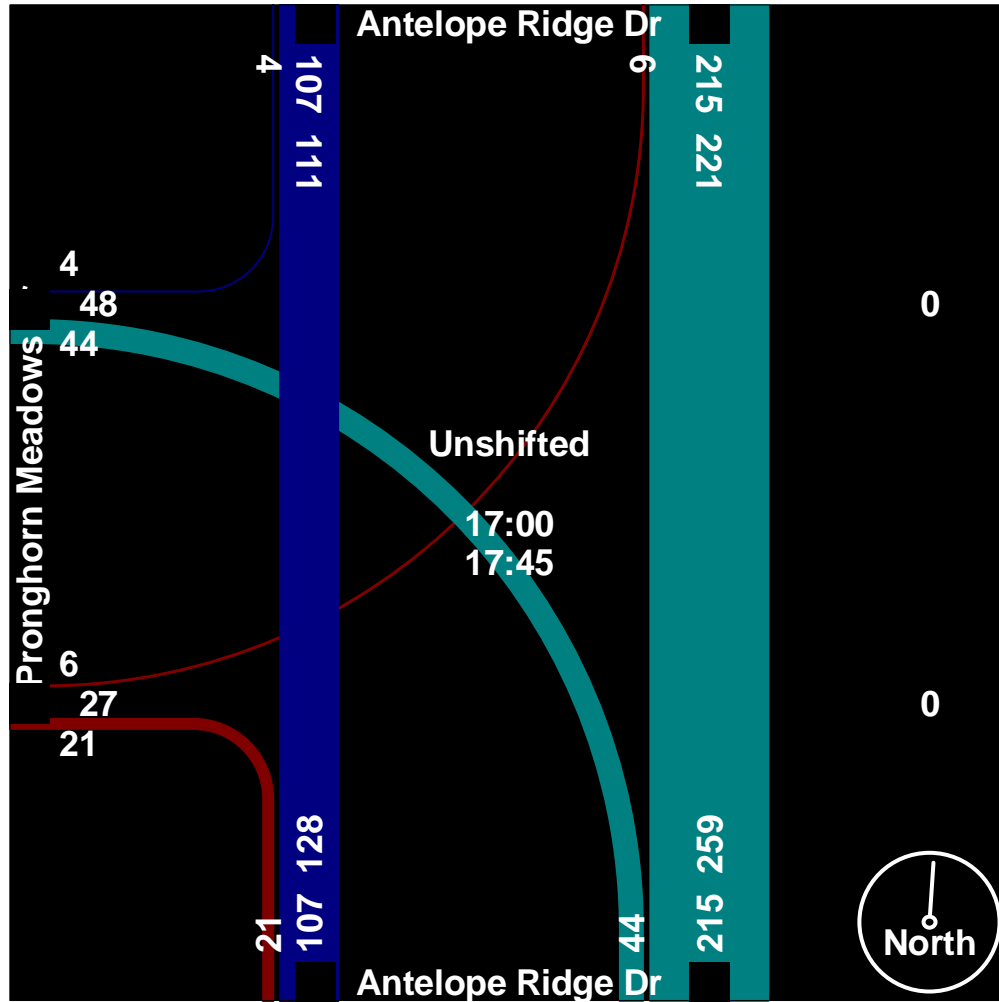
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File Name : Antelope Ridge Dr - S Pronghorn Meadows Dr PM

Site Code : 00184640

Start Date : 8/15/2018

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File Name : Antelope Ridge Dr -N Carefree Cir AM

Site Code : 184640

Start Date : 8/14/2018

Page No : 1

## Groups Printed- Unshifted

	Antelope Ridge Dr Southbound				N Carefree Cir Westbound				CSU Access Northbound				N Carefree Cir Eastbound				Int. Total
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	
06:30	20	0	13	0	0	22	0	0	0	0	0	0	8	46	1	0	110
06:45	27	0	18	0	0	26	11	0	0	0	0	0	16	55	2	0	155
Total	47	0	31	0	0	48	11	0	0	0	0	0	24	101	3	0	265
07:00	31	0	36	0	0	48	17	0	1	0	0	0	34	87	0	0	254
07:15	30	0	63	0	1	40	20	1	0	0	0	0	66	95	1	0	317
07:30	34	0	165	0	0	29	58	1	0	0	1	0	103	73	0	0	464
07:45	54	0	180	0	0	33	24	0	0	0	0	0	46	58	1	0	396
Total	149	0	444	0	1	150	119	2	1	0	1	0	249	313	2	0	1431
08:00	20	0	46	0	0	34	6	0	0	0	1	0	16	43	0	0	166
08:15	17	0	15	0	0	38	7	0	0	0	0	0	10	39	2	0	128
Grand Total	233	0	536	0	1	270	143	2	1	0	2	0	299	496	7	0	1990
Apprch %	30.3	0	69.7	0	0.2	64.9	34.4	0.5	33.3	0	66.7	0	37.3	61.8	0.9	0	
Total %	11.7	0	26.9	0	0.1	13.6	7.2	0.1	0.1	0	0.1	0	15	24.9	0.4	0	

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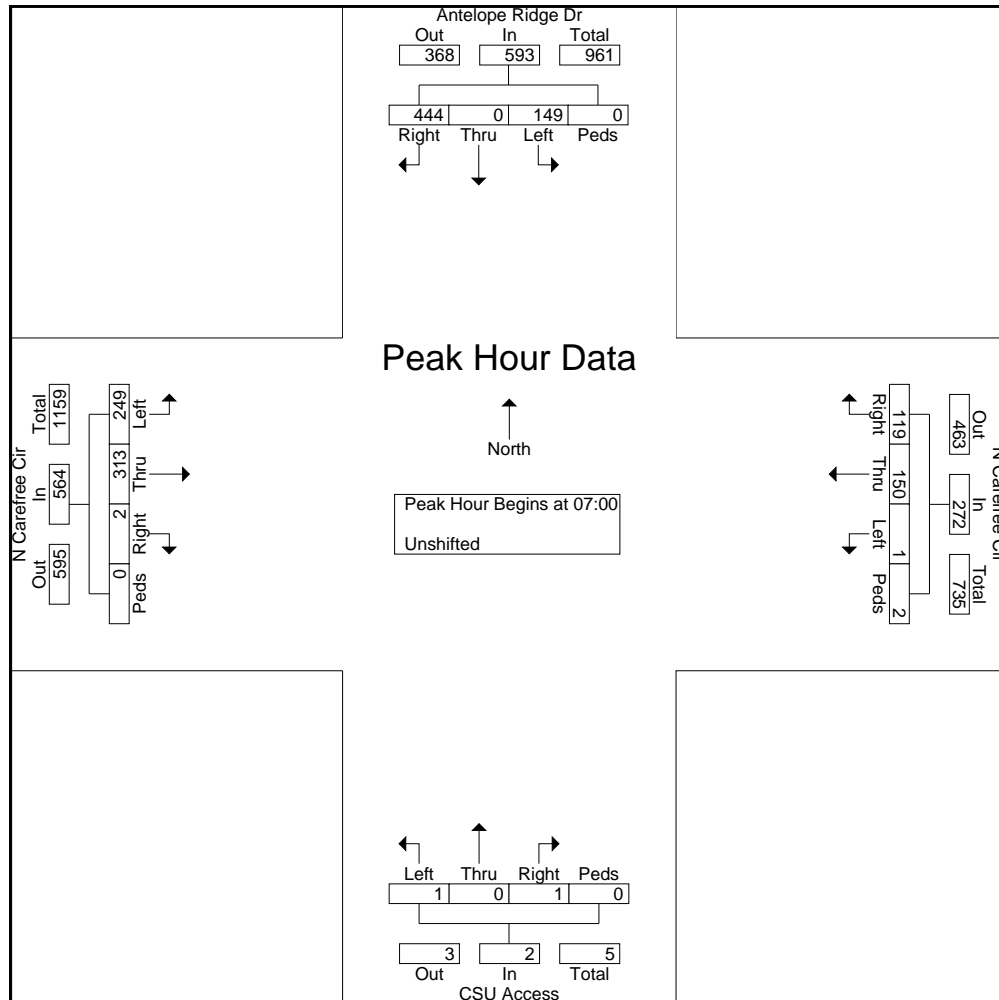
File Name : Antelope Ridge Dr -N Carefree Cir AM

Site Code : 184640

Start Date : 8/14/2018

Page No : 2

	Antelope Ridge Dr Southbound					N Carefree Cir Westbound					CSU Access Northbound					N Carefree Cir Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 6:30:00 AM to 8:15:00 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 7:00:00 AM																					
7:00:00 AM	31	0	36	0	67	0	48	17	0	65	1	0	0	0	1	34	87	0	0	121	254
7:15:00 AM	30	0	63	0	93	1	40	20	1	62	0	0	0	0	0	66	95	1	0	162	317
7:30:00 AM	34	0	165	0	199	0	29	58	1	88	0	0	1	0	1	103	73	0	0	176	464
7:45:00 AM	54	0	180	0	234	0	33	24	0	57	0	0	0	0	0	46	58	1	0	105	396
Total Volume	149	0	444	0	593	1	150	119	2	272	1	0	1	0	2	249	313	2	0	564	1431
% App. Total	25.1	0	74.9	0		0.4	55.1	43.8	0.7		50	0	50	0		44.1	55.5	0.4	0		
PHF	.690	.000	.617	.000	.634	.250	.781	.513	.500	.773	.250	.000	.250	.000	.500	.604	.824	.500	.000	.801	.771



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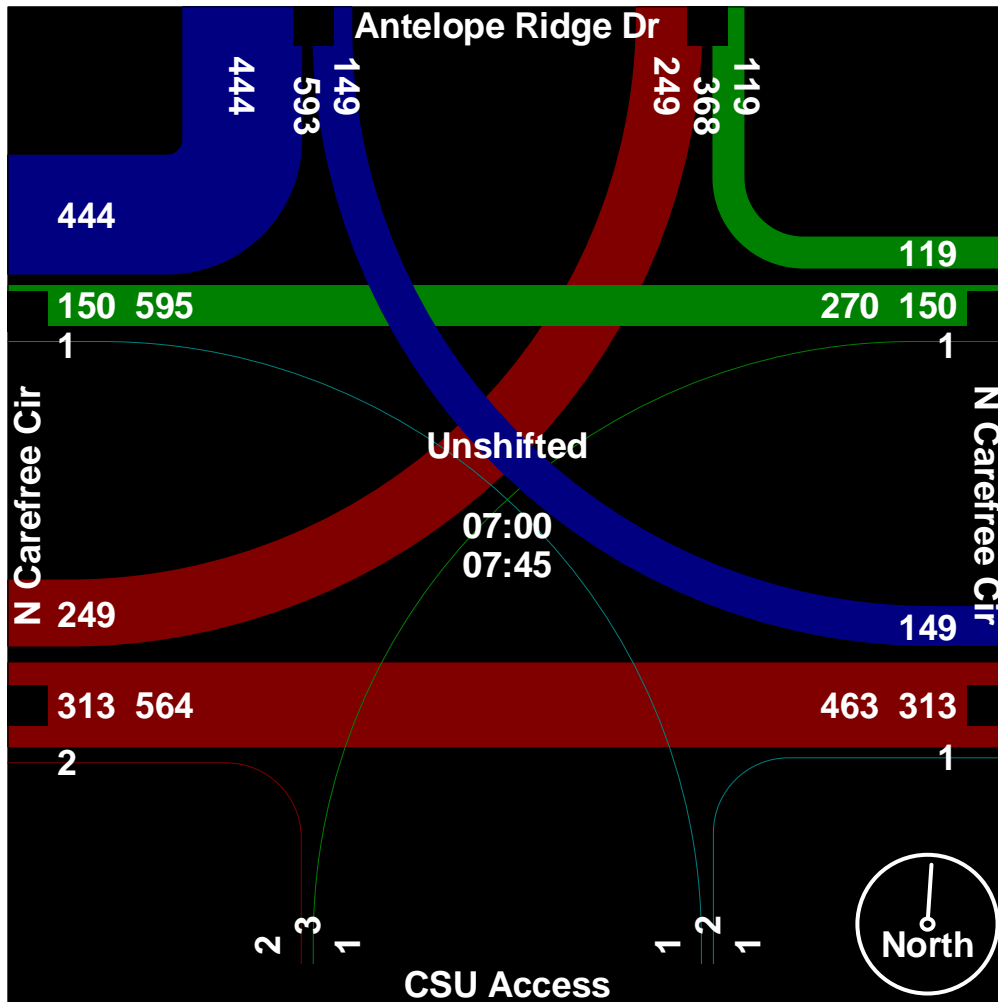
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File Name : Antelope Ridge Dr -N Carefree Cir AM

Site Code : 184640

Start Date : 8/14/2018

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File Name : Antelope Ridge Dr -N Carefree Cir Noon

Site Code : 00184640

Start Date : 8/14/2018

Page No : 1

## Groups Printed- Unshifted

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Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	
11:00	10	0	18	0	1	36	5	1	2	0	1	0	8	34	0	0	116
11:15	5	0	11	0	0	42	5	0	1	1	0	0	24	29	0	0	118
11:30	7	0	12	0	0	33	7	0	0	0	0	0	13	40	1	1	114
11:45	5	0	16	0	0	35	6	0	1	0	0	0	17	32	0	1	113
Total	27	0	57	0	1	146	23	1	4	1	1	0	62	135	1	2	461
12:00	6	0	12	0	0	30	5	0	0	0	0	0	12	37	0	0	102
12:15	9	0	14	0	0	51	3	0	0	0	0	0	17	50	0	1	145
12:30	3	0	19	0	0	51	7	0	0	0	0	0	16	43	0	0	139
12:45	10	0	7	0	0	44	10	0	0	0	0	0	20	36	1	0	128
Total	28	0	52	0	0	176	25	0	0	0	0	0	65	166	1	1	514
Grand Total	55	0	109	0	1	322	48	1	4	1	1	0	127	301	2	3	975
Apprch %	33.5	0	66.5	0	0.3	86.6	12.9	0.3	66.7	16.7	16.7	0	29.3	69.5	0.5	0.7	
Total %	5.6	0	11.2	0	0.1	33	4.9	0.1	0.4	0.1	0.1	0	13	30.9	0.2	0.3	

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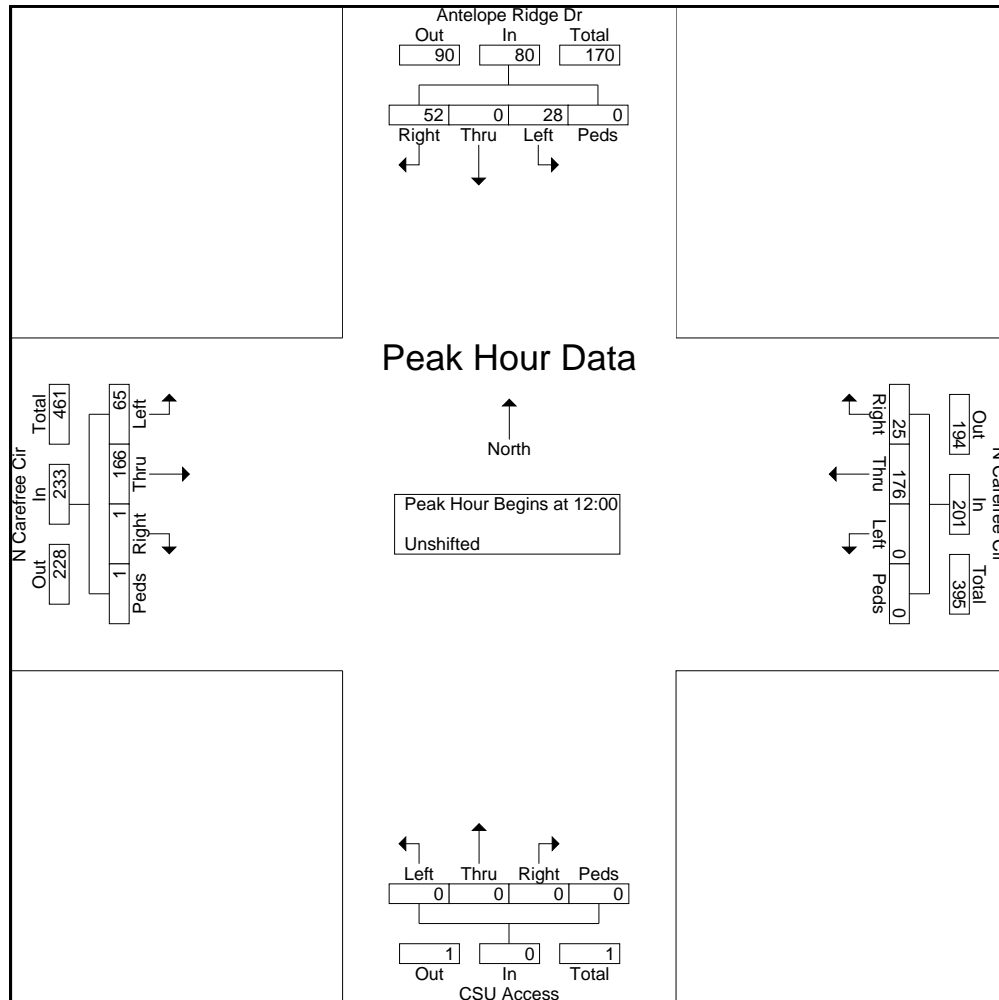
File Name : Antelope Ridge Dr -N Carefree Cir Noon

Site Code : 00184640

Start Date : 8/14/2018

Page No : 2

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Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 11:00 to 12:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 12:00																					
12:00	6	0	12	0	18	0	30	5	0	35	0	0	0	0	0	12	37	0	0	49	102
12:15	9	0	14	0	23	0	51	3	0	54	0	0	0	0	0	17	50	0	1	68	145
12:30	3	0	19	0	22	0	51	7	0	58	0	0	0	0	0	16	43	0	0	59	139
12:45	10	0	7	0	17	0	44	10	0	54	0	0	0	0	0	20	36	1	0	57	128
Total Volume	28	0	52	0	80	0	176	25	0	201	0	0	0	0	0	65	166	1	1	233	514
% App. Total	35	0	65	0		0	87.6	12.4	0		0	0	0	0		27.9	71.2	0.4	0.4		
PHF	.700	.000	.684	.000	.870	.000	.863	.625	.000	.866	.000	.000	.000	.000	.000	.813	.830	.250	.250	.857	.886



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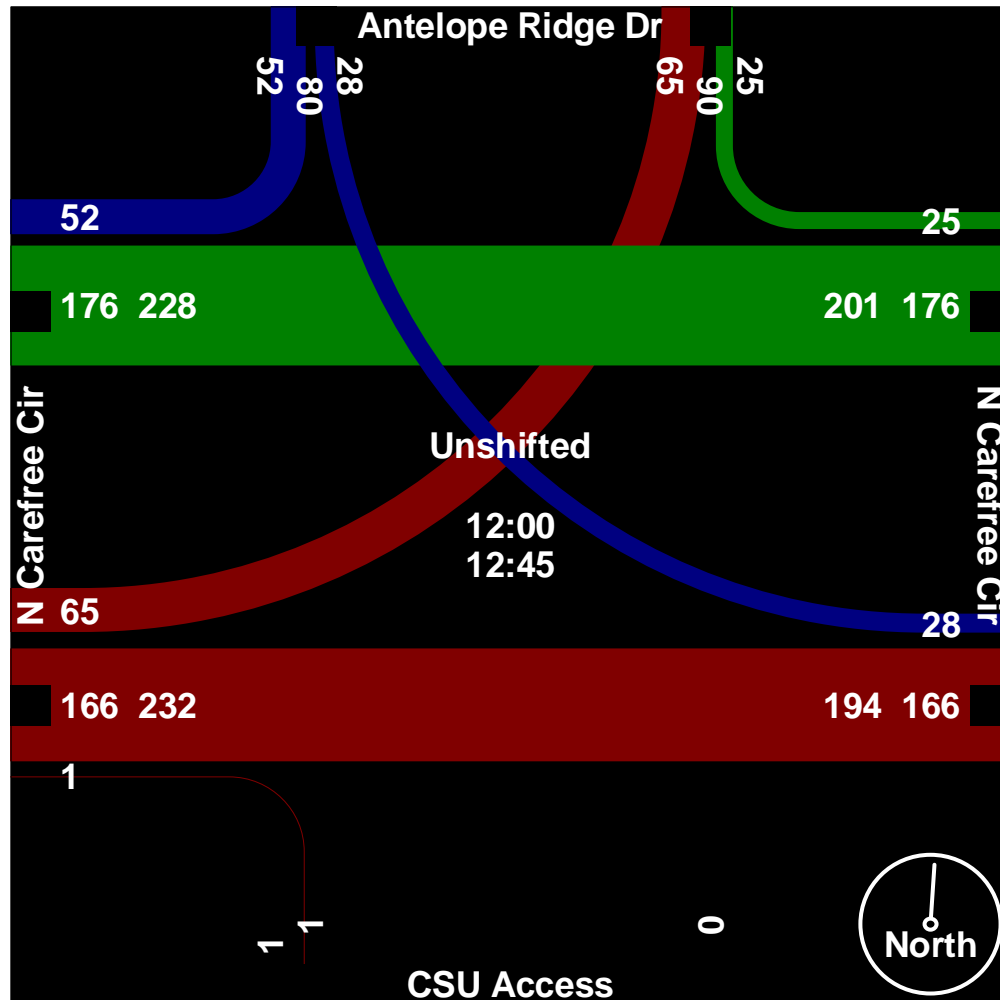
545 E Pikes Peak Ave, Suite 210  
Colorado Springs, CO 80905  
719-633-2868

File Name : Antelope Ridge Dr -N Carefree Cir Noon

Site Code : 00184640

Start Date : 8/14/2018

Page No : 3



# LSC Transportation Consultants, Inc.

545 E Pikes Peak Ave, Suite 210

Colorado Springs, CO 80905

719-633-2868

File Name : Antelope Ridge Dr -N Carefree Cir Schl

Site Code : 00184640

Start Date : 8/15/2018

Page No : 1

## Groups Printed- Unshifted

	Antelope Ridge Dr Southbound				N Carefree Cir Westbound				CSU Access Northbound				N Carefree Cir Eastbound				
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Int. Total
14:00	7	0	7	0	0	49	8	0	0	0	0	0	19	40	1	0	131
14:15	3	0	16	1	0	43	24	0	1	0	0	0	25	40	1	0	154
14:30	14	0	12	0	0	48	20	0	1	0	0	0	48	42	0	0	185
14:45	12	0	37	0	0	57	23	0	0	0	0	0	59	70	0	1	259
Total	36	0	72	1	0	197	75	0	2	0	0	0	151	192	2	1	729
15:00	33	0	87	0	0	62	28	0	0	0	0	0	26	43	0	0	279
15:15	20	0	82	0	0	46	38	0	0	0	0	0	50	58	0	0	294
15:30	31	0	94	0	0	85	19	0	0	0	0	0	40	45	1	0	315
15:45	30	0	75	0	0	70	22	0	0	0	1	0	25	43	1	0	267
Total	114	0	338	0	0	263	107	0	0	0	1	0	141	189	2	0	1155
Grand Total	150	0	410	1	0	460	182	0	2	0	1	0	292	381	4	1	1884
Apprch %	26.7	0	73.1	0.2	0	71.7	28.3	0	66.7	0	33.3	0	43.1	56.2	0.6	0.1	
Total %	8	0	21.8	0.1	0	24.4	9.7	0	0.1	0	0.1	0	15.5	20.2	0.2	0.1	

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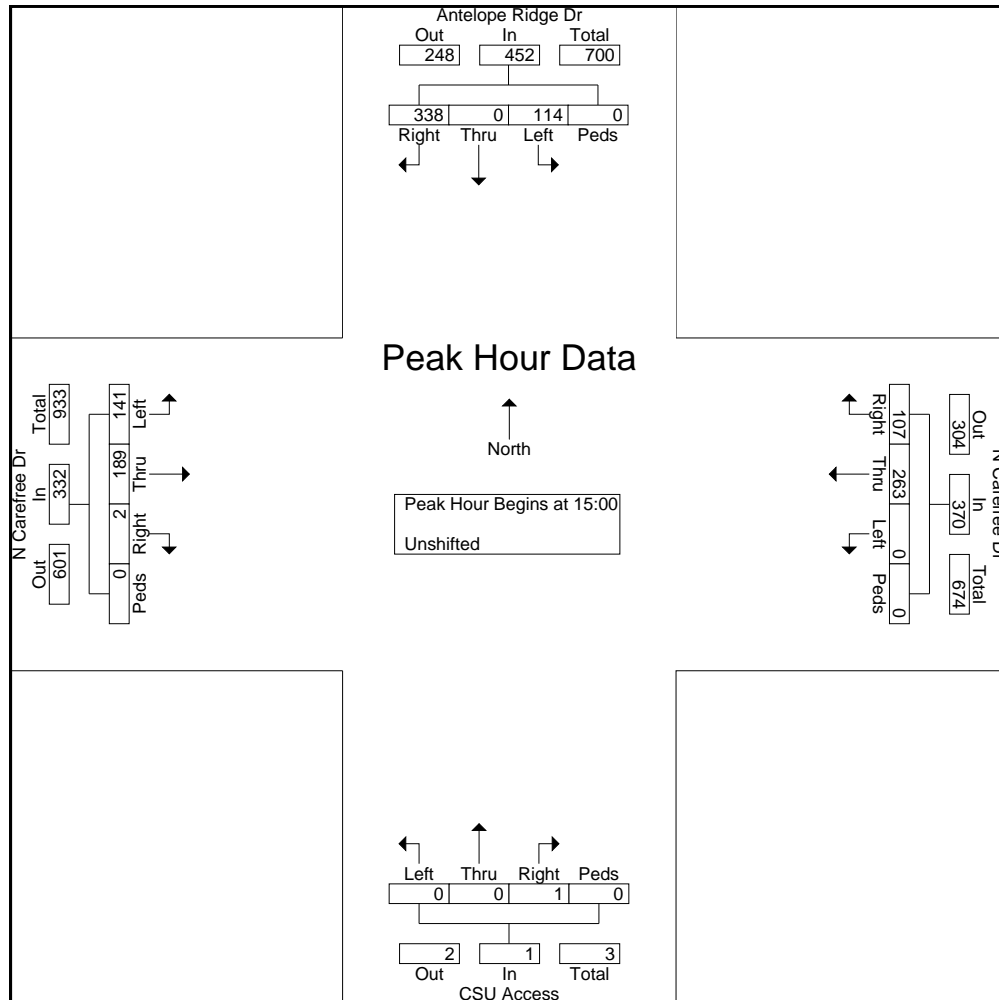
File Name : Antelope Ridge Dr -N Carefree Cir Schl

Site Code : 00184640

Start Date : 8/15/2018

Page No : 2

	Antelope Ridge Dr Southbound					N Carefree Cir Westbound					CSU Access Northbound					N Carefree Cir Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 2:00:00 PM to 3:45:00 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 3:00:00 PM																					
3:00:00 PM	33	0	87	0	120	0	62	28	0	90	0	0	0	0	0	26	43	0	0	69	279
3:15:00 PM	20	0	82	0	102	0	46	38	0	84	0	0	0	0	0	50	58	0	0	108	294
3:30:00 PM	31	0	94	0	125	0	85	19	0	104	0	0	0	0	0	40	45	1	0	86	315
3:45:00 PM	30	0	75	0	105	0	70	22	0	92	0	0	1	0	1	25	43	1	0	69	267
Total Volume	114	0	338	0	452	0	263	107	0	370	0	0	1	0	1	141	189	2	0	332	1155
% App. Total	25.2	0	74.8	0		0	71.1	28.9	0		0	0	100	0		42.5	56.9	0.6	0		
PHF	.864	.000	.899	.000	.904	.000	.774	.704	.000	.889	.000	.000	.250	.000	.250	.705	.815	.500	.000	.769	.917



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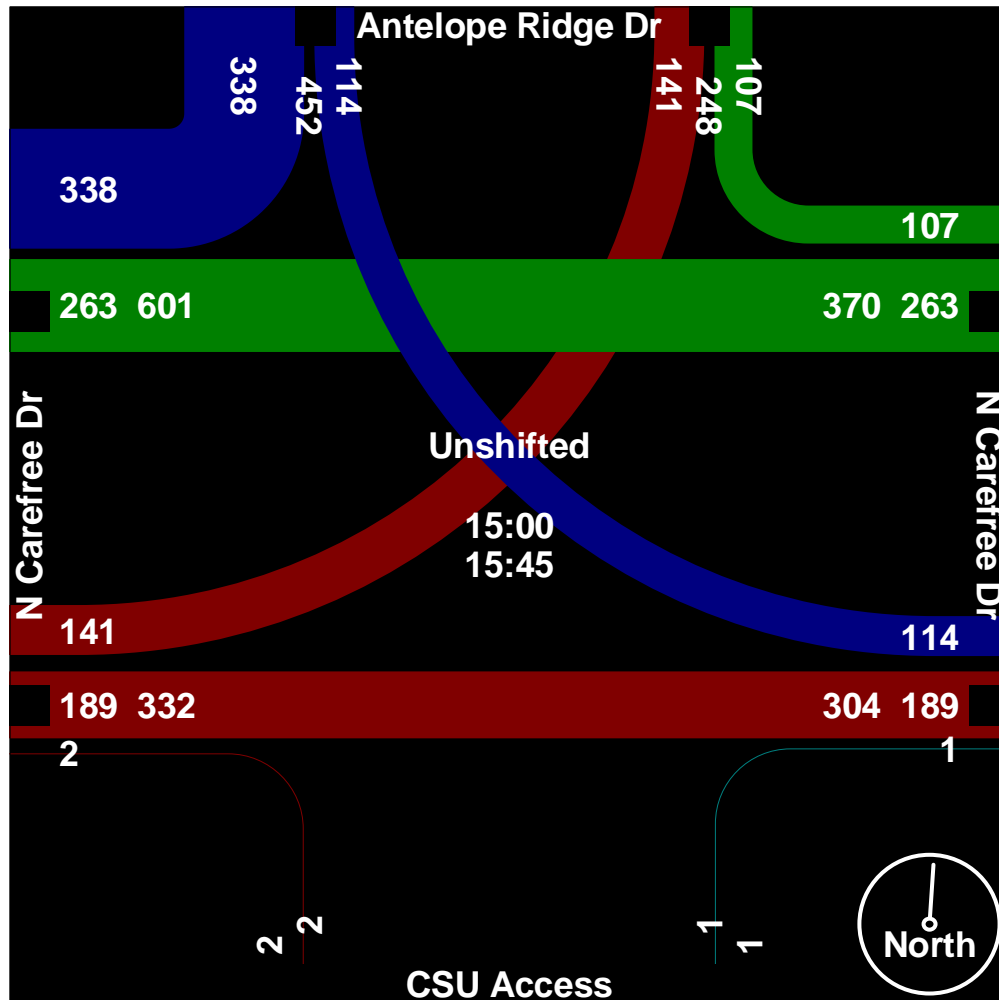
719-633-2868

File Name : Antelope Ridge Dr -N Carefree Cir Schl

Site Code : 00184640

Start Date : 8/15/2018

Page No : 3



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719-633-2868

File Name : Antelope Ridge Dr -N Carefree Cir PM

Site Code : 00184640

Start Date : 8/14/2018

Page No : 1

## Groups Printed- Unshifted

	Antelope Ridge Dr Southbound				N Carefree Cir Westbound				CSU Access Northbound				N Carefree Cir Eastbound				Int. Total
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	
16:00	15	0	21	0	0	94	22	0	0	0	0	0	19	35	1	0	207
16:15	11	0	17	0	0	90	28	0	0	0	0	0	21	36	0	0	203
16:30	3	0	16	0	2	123	34	0	0	0	0	0	19	52	0	0	249
16:45	14	0	15	1	3	141	34	0	5	0	0	0	31	40	1	0	285
Total	43	0	69	1	5	448	118	0	5	0	0	0	90	163	2	0	944
17:00	12	0	20	0	0	143	42	0	7	0	3	0	28	53	0	0	308
17:15	11	0	9	0	0	127	45	0	0	0	0	0	29	38	0	0	259
17:30	10	0	19	0	0	105	19	0	0	0	0	0	30	45	0	0	228
17:45	10	0	32	0	0	94	22	0	2	0	0	0	33	43	0	1	237
Total	43	0	80	0	0	469	128	0	9	0	3	0	120	179	0	1	1032
Grand Total	86	0	149	1	5	917	246	0	14	0	3	0	210	342	2	1	1976
Apprch %	36.4	0	63.1	0.4	0.4	78.5	21.1	0	82.4	0	17.6	0	37.8	61.6	0.4	0.2	
Total %	4.4	0	7.5	0.1	0.3	46.4	12.4	0	0.7	0	0.2	0	10.6	17.3	0.1	0.1	

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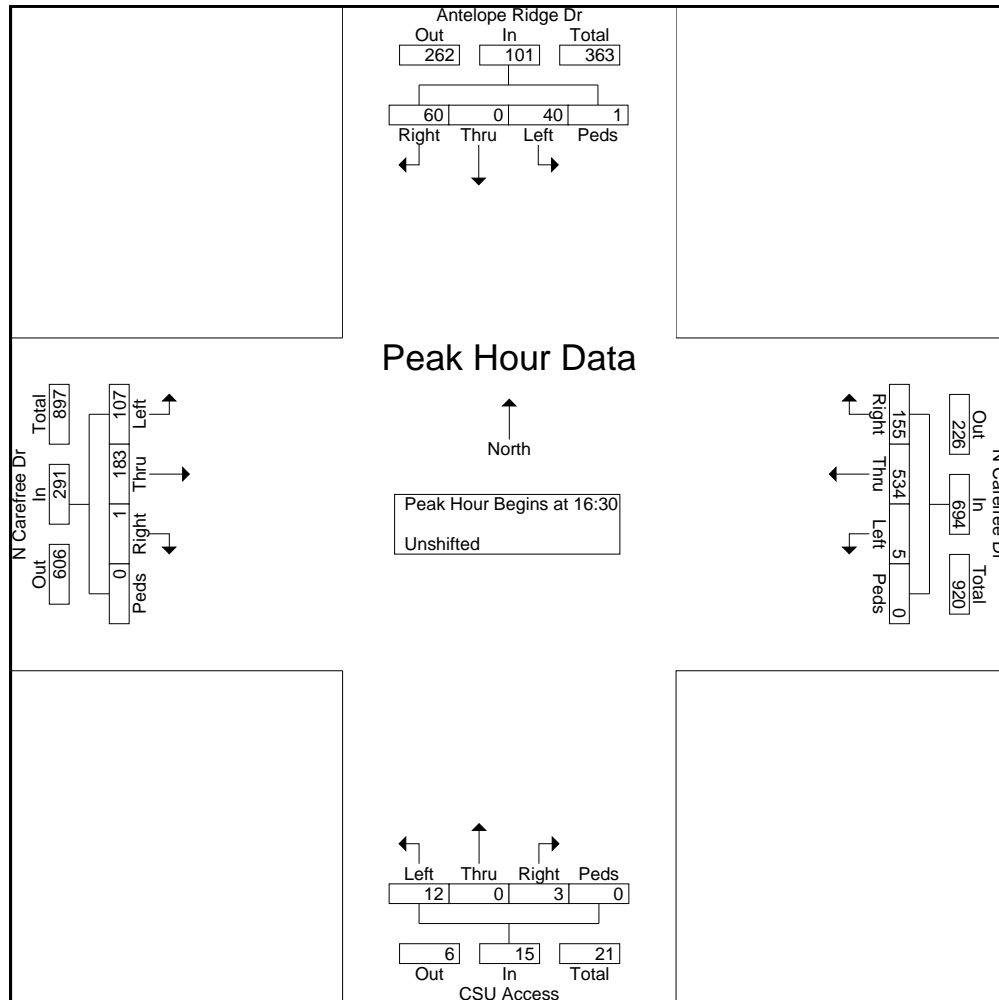
File Name : Antelope Ridge Dr -N Carefree Cir PM

Site Code : 00184640

Start Date : 8/14/2018

Page No : 2

	Antelope Ridge Dr Southbound					N Carefree Cir Westbound					CSU Access Northbound					N Carefree Cir Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 16:30																					
16:30	3	0	16	0	19	2	123	34	0	159	0	0	0	0	0	19	52	0	0	71	249
16:45	14	0	15	1	30	3	141	34	0	178	5	0	0	0	5	31	40	1	0	72	285
17:00	12	0	20	0	32	0	143	42	0	185	7	0	3	0	10	28	53	0	0	81	308
17:15	11	0	9	0	20	0	127	45	0	172	0	0	0	0	0	29	38	0	0	67	259
Total Volume	40	0	60	1	101	5	534	155	0	694	12	0	3	0	15	107	183	1	0	291	1101
% App. Total	39.6	0	59.4	1		0.7	76.9	22.3	0		80	0	20	0		36.8	62.9	0.3	0		
PHF	.714	.000	.750	.250	.789	.417	.934	.861	.000	.938	.429	.000	.250	.000	.375	.863	.863	.250	.000	.898	.894





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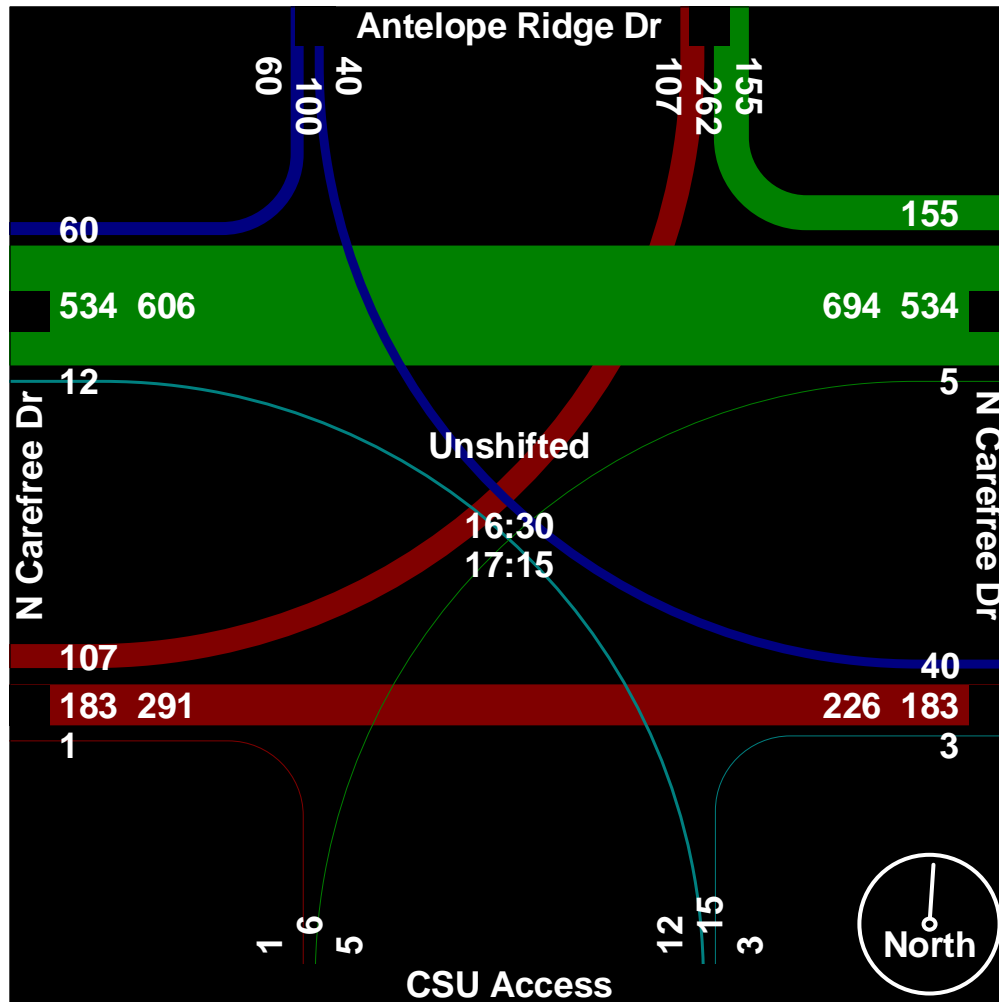
719-633-2868

File Name : Antelope Ridge Dr -N Carefree Cir PM

Site Code : 00184640

Start Date : 8/14/2018

Page No : 3



# LSC Transportation Consultants, Inc.

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719-633-2868

File Name : Marksheffel Rd - N Carefree Cir AM

Site Code : 00184640

Start Date : 1/31/2019

Page No : 1

## Groups Printed- Unshifted

	Marksheffel Rd Southbound				Westbound				Marksheffel Rd Northbound				N Carefree Cir Eastbound				
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Int. Total
06:30	0	314	7	0	0	0	0	0	27	144	0	0	3	0	70	0	565
06:45	0	328	9	0	0	0	0	0	33	125	0	0	2	0	80	0	577
Total	0	642	16	0	0	0	0	0	60	269	0	0	5	0	150	0	1142
07:00	0	320	15	0	0	0	0	0	54	171	0	0	2	0	93	1	656
07:15	0	282	14	0	0	0	0	0	75	179	0	2	2	0	118	0	672
07:30	0	298	18	0	0	0	0	0	74	165	0	0	6	0	93	0	654
07:45	0	279	30	0	0	0	0	0	63	143	0	0	9	0	119	1	644
Total	0	1179	77	0	0	0	0	0	266	658	0	2	19	0	423	2	2626
08:00	0	211	17	0	0	0	0	0	39	153	0	0	7	0	49	0	476
08:15	0	212	15	0	0	0	0	0	26	133	0	1	5	0	55	0	447
Grand Total	0	2244	125	0	0	0	0	0	391	1213	0	3	36	0	677	2	4691
Apprch %	0	94.7	5.3	0	0	0	0	0	24.3	75.5	0	0.2	5	0	94.7	0.3	
Total %	0	47.8	2.7	0	0	0	0	0	8.3	25.9	0	0.1	0.8	0	14.4	0	

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719-633-2868

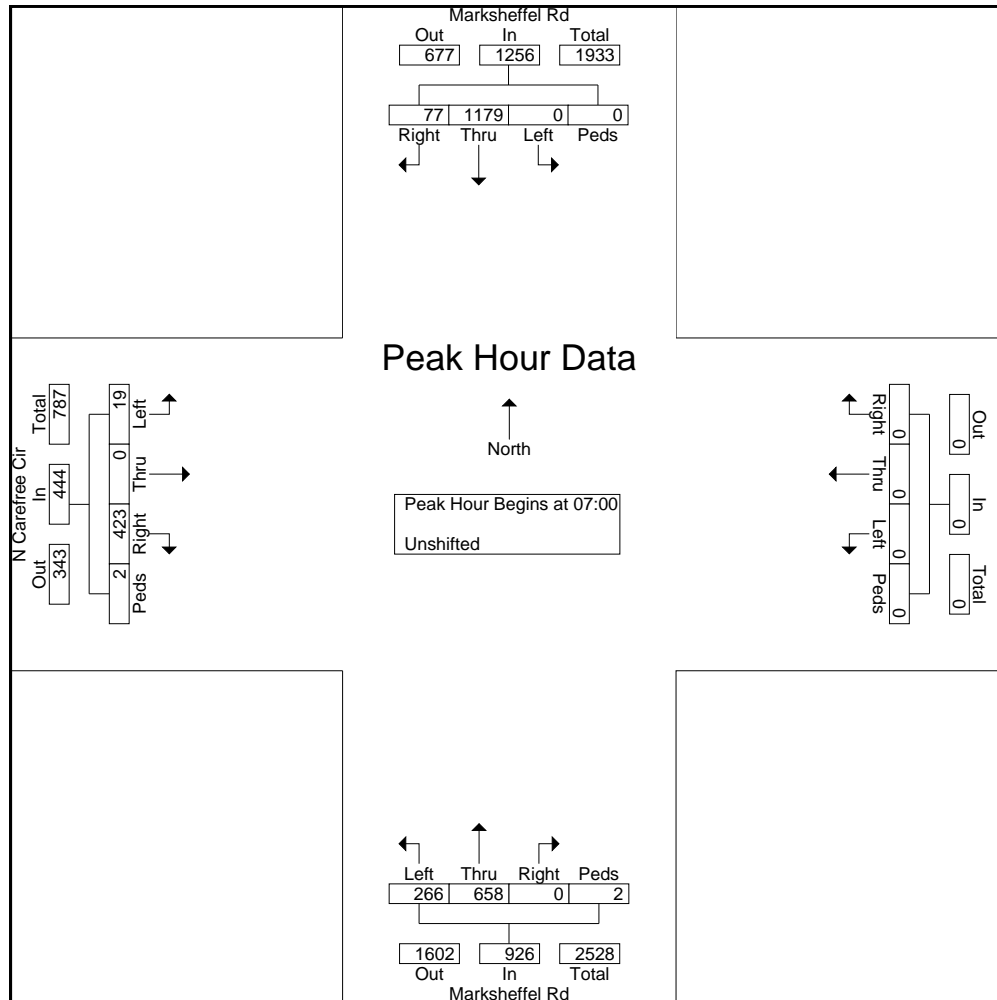
File Name : Marksheffel Rd - N Carefree Cir AM

Site Code : 00184640

Start Date : 1/31/2019

Page No : 2

	Marksheffel Rd Southbound					Westbound					Marksheffel Rd Northbound					N Carefree Cir Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 06:30 to 08:15 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:00																					
07:00	0	320	15	0	335	0	0	0	0	0	54	171	0	0	225	2	0	93	1	96	656
07:15	0	282	14	0	296	0	0	0	0	0	75	179	0	2	256	2	0	118	0	120	672
07:30	0	298	18	0	316	0	0	0	0	0	74	165	0	0	239	6	0	93	0	99	654
07:45	0	279	30	0	309	0	0	0	0	0	63	143	0	0	206	9	0	119	1	129	644
Total Volume	0	1179	77	0	1256	0	0	0	0	0	266	658	0	2	926	19	0	423	2	444	2626
% App. Total	0	93.9	6.1	0		0	0	0	0		28.7	71.1	0	0.2		4.3	0	95.3	0.5		
PHF	.000	.921	.642	.000	.937	.000	.000	.000	.000	.000	.887	.919	.000	.250	.904	.528	.000	.889	.500	.860	.977



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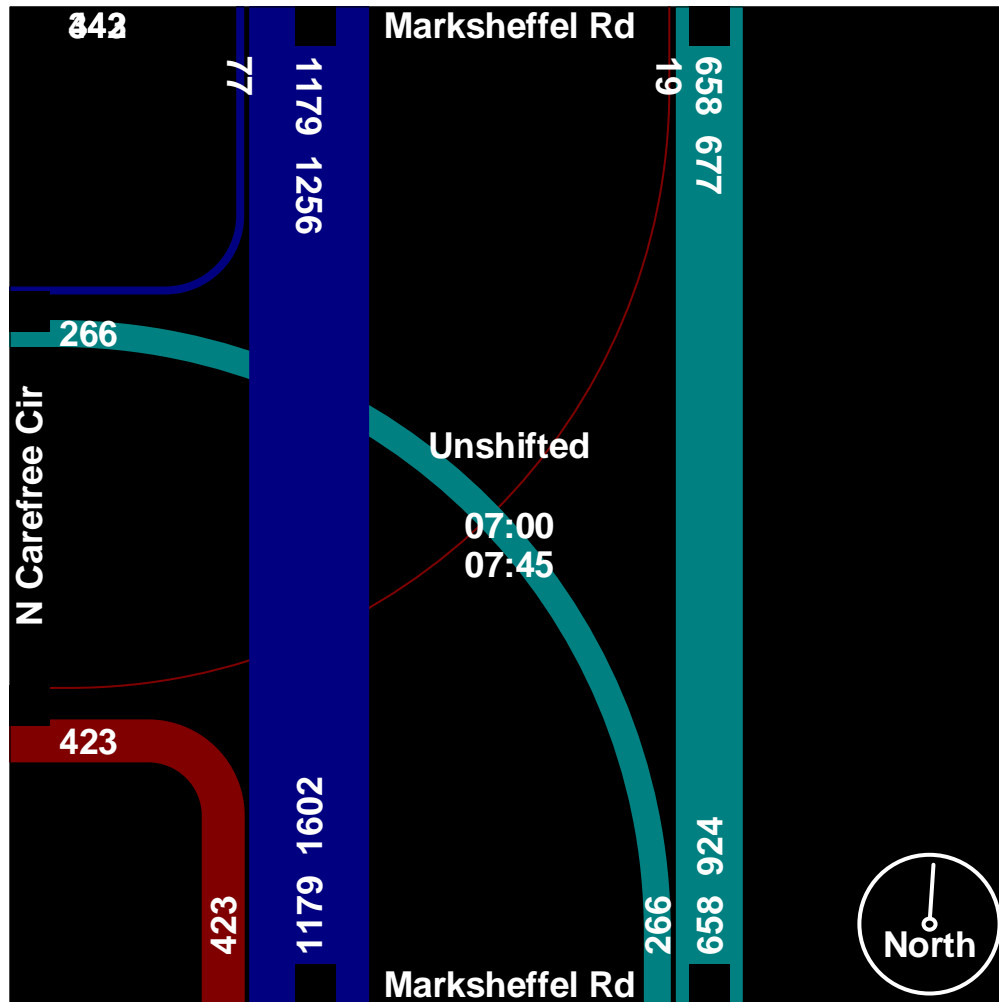
719-633-2868

File Name : Marksheffel Rd - N Carefree Cir AM

Site Code : 00184640

Start Date : 1/31/2019

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# LSC Transportation Consultants, Inc.

545 E Pikes Peak Ave, Suite 210

Colorado Springs, CO 80905

719-633-2868

File Name : Marksheffel Rd - N Carefree Cir PM

Site Code : 00184640

Start Date : 1/30/2019

Page No : 1

## Groups Printed- Unshifted

	Marksheffel Rd Southbound				Westbound				Marksheffel Rd Northbound				N Carefree Cir Eastbound				
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Int. Total
16:00	0	169	11	0	0	0	0	0	101	265	0	0	12	0	62	0	620
16:15	0	145	14	0	0	0	0	0	112	281	0	1	10	0	49	0	612
16:30	0	172	24	0	0	0	0	0	165	283	0	0	2	0	39	0	685
16:45	0	163	30	0	0	0	0	0	142	229	0	0	3	0	50	1	618
Total	0	649	79	0	0	0	0	0	520	1058	0	1	27	0	200	1	2535
17:00	0	190	24	0	0	0	0	0	153	262	0	1	5	0	58	3	696
17:15	0	198	31	0	0	0	0	0	120	261	0	0	6	0	54	0	670
17:30	0	191	27	0	0	0	0	0	104	231	0	0	5	0	48	0	606
17:45	0	145	26	0	0	0	0	0	58	189	0	0	13	0	45	0	476
Total	0	724	108	0	0	0	0	0	435	943	0	1	29	0	205	3	2448
Grand Total	0	1373	187	0	0	0	0	0	955	2001	0	2	56	0	405	4	4983
Apprch %	0	88	12	0	0	0	0	0	32.3	67.6	0	0.1	12	0	87.1	0.9	
Total %	0	27.6	3.8	0	0	0	0	0	19.2	40.2	0	0	1.1	0	8.1	0.1	

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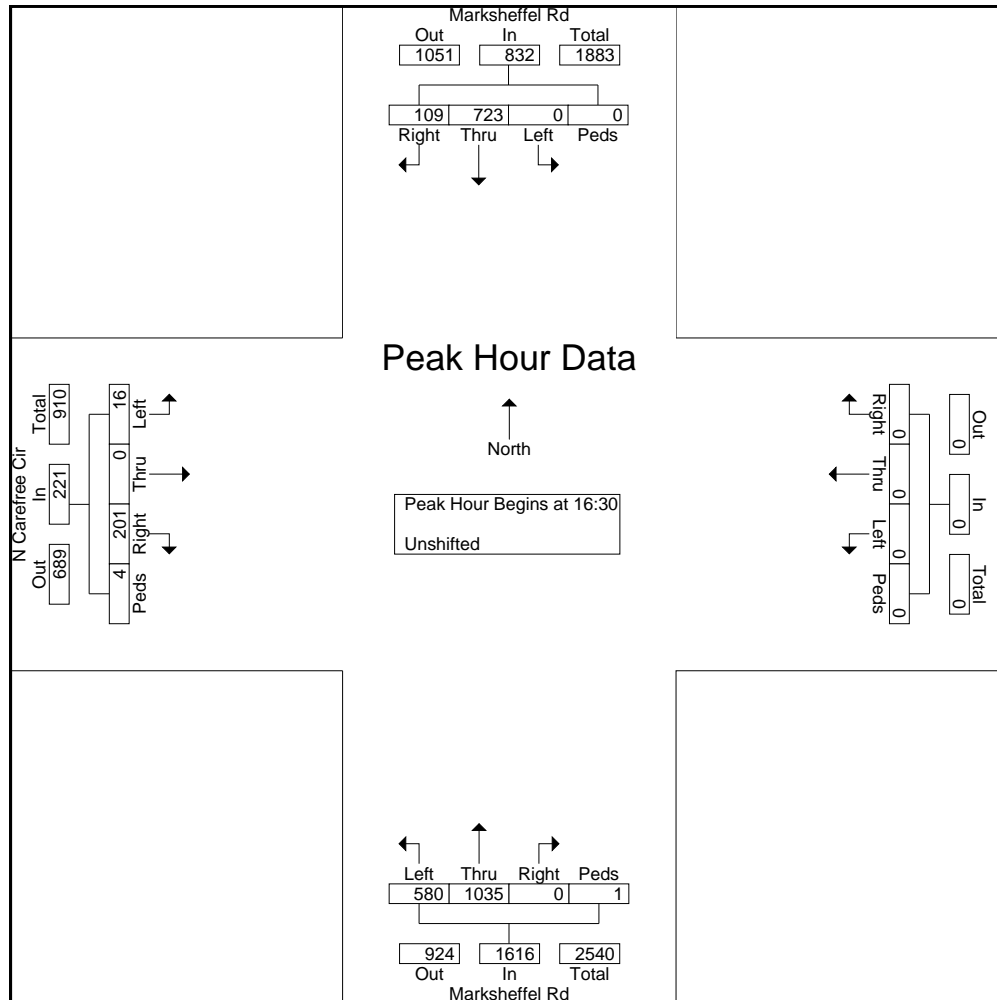
File Name : Marksheffel Rd - N Carefree Cir PM

Site Code : 00184640

Start Date : 1/30/2019

Page No : 2

	Marksheffel Rd Southbound					Westbound					Marksheffel Rd Northbound					N Carefree Cir Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 16:30																					
16:30	0	172	24	0	196	0	0	0	0	0	165	283	0	0	448	2	0	39	0	41	685
16:45	0	163	30	0	193	0	0	0	0	0	142	229	0	0	371	3	0	50	1	54	618
17:00	0	190	24	0	214	0	0	0	0	0	153	262	0	1	416	5	0	58	3	66	696
17:15	0	198	31	0	229	0	0	0	0	0	120	261	0	0	381	6	0	54	0	60	670
Total Volume	0	723	109	0	832	0	0	0	0	0	580	1035	0	1	1616	16	0	201	4	221	2669
% App. Total	0	86.9	13.1	0		0	0	0	0		35.9	64	0	0.1		7.2	0	91	1.8		
PHF	.000	.913	.879	.000	.908	.000	.000	.000	.000	.000	.879	.914	.000	.250	.902	.667	.000	.866	.333	.837	.959



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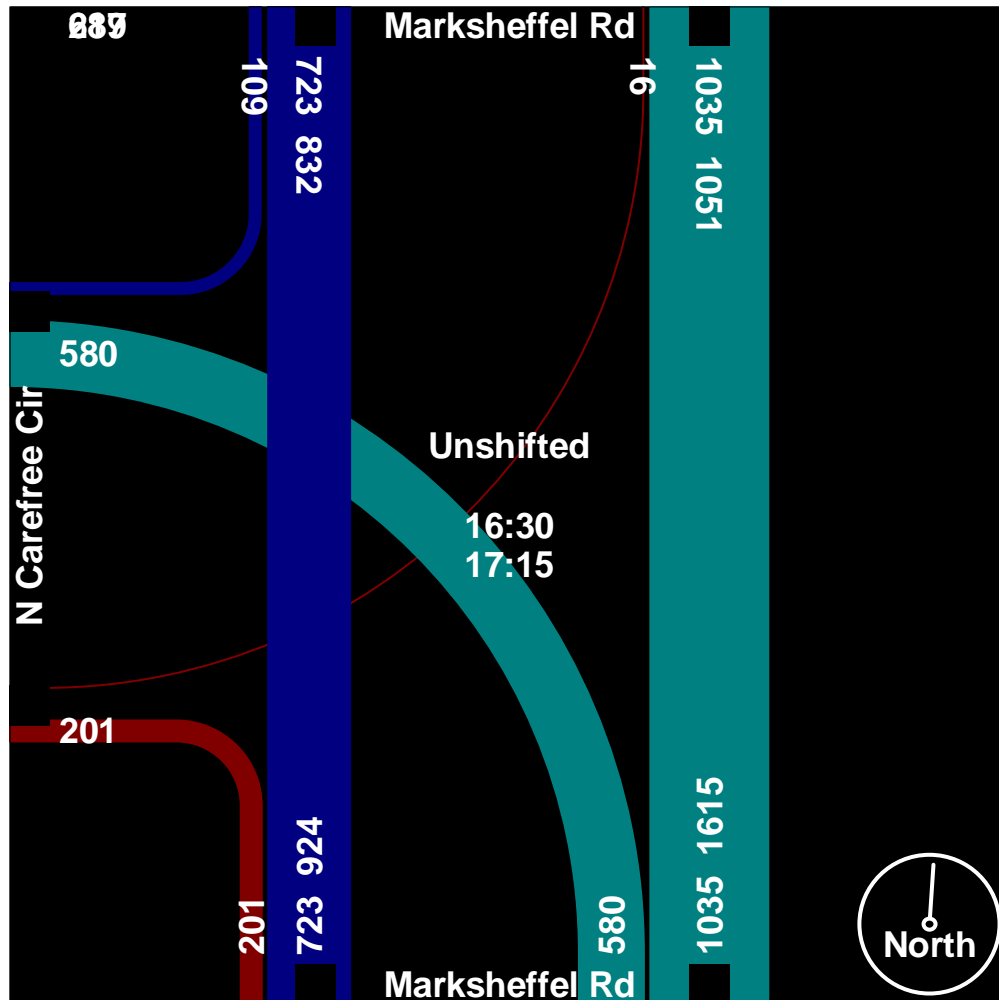
719-633-2868

File Name : Marksheffel Rd - N Carefree Cir PM

Site Code : 00184640

Start Date : 1/30/2019

Page No : 3



# Levels of Service

---



HCM 6th TWSC  
4: Antelope Ridge Dr. & North Carefree

Existing Traffic  
AM Peak Hour

Intersection												
Int Delay, s/veh	24.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	249	313	2	1	150	119	1	0	1	149	0	444
Future Vol, veh/h	249	313	2	1	150	119	1	0	1	149	0	444
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	345	-	-	-	-	155	-	-	-	150	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	80	80	80	78	78	78	50	50	50	74	74	74
Heavy Vehicles, %	1	2	2	2	2	1	2	2	2	1	2	1
Mvmt Flow	311	391	3	1	192	153	2	0	2	201	0	600

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	345	0	0	394	0	0	1094	1362	197	972	1210	96
Stage 1	-	-	-	-	-	-	1015	1015	-	194	194	-
Stage 2	-	-	-	-	-	-	79	347	-	778	1016	-
Critical Hdwy	5.32	-	-	5.34	-	-	6.44	6.54	7.14	6.42	6.54	7.12
Critical Hdwy Stg 1	-	-	-	-	-	-	7.34	5.54	-	7.32	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.74	5.54	-	6.72	5.54	-
Follow-up Hdwy	3.11	-	-	3.12	-	-	3.82	4.02	3.92	3.81	4.02	3.91
Pot Cap-1 Maneuver	804	-	-	759	-	-	225	147	690	267	181	802
Stage 1	-	-	-	-	-	-	194	314	-	705	739	-
Stage 2	-	-	-	-	-	-	847	633	-	325	314	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	804	-	-	759	-	-	40	90	690	~ 186	111	802
Mov Cap-2 Maneuver	-	-	-	-	-	-	40	90	-	~ 186	111	-
Stage 1	-	-	-	-	-	-	119	192	-	432	738	-
Stage 2	-	-	-	-	-	-	213	632	-	~ 199	192	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	5.4	0	55	51.7
HCM LOS			F	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	76	804	-	-	759	-	-	186	802
HCM Lane V/C Ratio	0.053	0.387	-	-	0.002	-	-	1.083	0.748
HCM Control Delay (s)	55	12.3	-	-	9.8	0	-	141.8	21.5
HCM Lane LOS	F	B	-	-	A	A	-	F	C
HCM 95th %tile Q(veh)	0.2	1.8	-	-	0	-	-	9.7	7





Notes			
~: Volume exceeds capacity	\$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

HCM 6th TWSC  
24: Antelope Ridge Dr. & S. Pronghorn Meadow Cir

Existing Traffic  
AM Peak Hour

Intersection

Int Delay, s/veh 1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	6	54	14	354	539	4
Future Vol, veh/h	6	54	14	354	539	4
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	-	80	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	88	88	57	57	67	67
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	7	61	25	621	804	6

Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	1478	807	810
Stage 1	807	-	-
Stage 2	671	-	-
Critical Hdwy	6.42	6.22	4.12
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3.518	3.318	2.218
Pot Cap-1 Maneuver	139	381	816
Stage 1	439	-	-
Stage 2	508	-	-
Platoon blocked, %			
Mov Cap-1 Maneuver	135	381	816
Mov Cap-2 Maneuver	135	-	-
Stage 1	425	-	-
Stage 2	508	-	-

Approach	EB	NB	SB
HCM Control Delay, s	19.2	0.4	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	816	-	322	-	-
HCM Lane V/C Ratio	0.03	-	0.212	-	-
HCM Control Delay (s)	9.5	-	19.2	-	-
HCM Lane LOS	A	-	C	-	-
HCM 95th %tile Q(veh)	0.1	-	0.8	-	-

HCM 6th TWSC  
4: Antelope Ridge Dr. & North Carefree

Existing Traffic  
3:00 - 4:00 PM

Intersection												
Int Delay, s/veh	7.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	141	189	2	0	263	107	0	0	1	114	0	338
Future Vol, veh/h	141	189	2	0	263	107	0	0	1	114	0	338
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	345	-	-	-	-	155	-	-	-	150	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	97	97	97	89	89	89	100	100	100	90	90	90
Heavy Vehicles, %	1	2	2	2	2	1	2	2	2	1	2	1
Mvmt Flow	145	195	2	0	296	120	0	0	1	127	0	376

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	416	0	0	197	0	0	604	902	99	664	783	148
Stage 1	-	-	-	-	-	-	486	486	-	296	296	-
Stage 2	-	-	-	-	-	-	118	416	-	368	487	-
Critical Hdwy	5.32	-	-	5.34	-	-	6.44	6.54	7.14	6.42	6.54	7.12
Critical Hdwy Stg 1	-	-	-	-	-	-	7.34	5.54	-	7.32	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.74	5.54	-	6.72	5.54	-
Follow-up Hdwy	3.11	-	-	3.12	-	-	3.82	4.02	3.92	3.81	4.02	3.91
Pot Cap-1 Maneuver	745	-	-	937	-	-	433	276	796	403	324	744
Stage 1	-	-	-	-	-	-	448	549	-	603	667	-
Stage 2	-	-	-	-	-	-	804	590	-	574	549	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	745	-	-	937	-	-	182	222	796	342	261	744
Mov Cap-2 Maneuver	-	-	-	-	-	-	182	222	-	342	261	-
Stage 1	-	-	-	-	-	-	361	442	-	485	667	-
Stage 2	-	-	-	-	-	-	398	590	-	462	442	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	4.7	0	9.5	16.4
HCM LOS			A	C






Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	796	745	-	-	937	-	-	342	744
HCM Lane V/C Ratio	0.001	0.195	-	-	-	-	-	0.37	0.505
HCM Control Delay (s)	9.5	11	-	-	0	-	-	21.6	14.7
HCM Lane LOS	A	B	-	-	A	-	-	C	B
HCM 95th %tile Q(veh)	0	0.7	-	-	0	-	-	1.7	2.9

HCM 6th TWSC  
24: Antelope Ridge Dr. & S. Pronghorn Meadow Cir

Existing Traffic  
3:00 - 4:00 PM

Intersection

Int Delay, s/veh 0.9

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	2	24	35	213	428	8
Future Vol, veh/h	2	24	35	213	428	8
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	80	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	70	70	100	100
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	2	24	50	304	428	8

Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	836	432	436
Stage 1	432	-	-
Stage 2	404	-	-
Critical Hdwy	6.42	6.22	4.12
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3.518	3.318	2.218
Pot Cap-1 Maneuver	337	624	1124
Stage 1	655	-	-
Stage 2	674	-	-
Platoon blocked, %			
Mov Cap-1 Maneuver	322	624	1124
Mov Cap-2 Maneuver	322	-	-
Stage 1	626	-	-
Stage 2	674	-	-

Approach	EB	NB	SB
HCM Control Delay, s	11.5	1.2	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1124	-	582	-	-
HCM Lane V/C Ratio	0.044	-	0.045	-	-
HCM Control Delay (s)	8.4	-	11.5	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	0.1	-	0.1	-	-

HCM 6th TWSC  
4: Antelope Ridge Dr. & North Carefree

Existing Traffic  
PM Peak Hour

Intersection												
Int Delay, s/veh	3.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	107	183	1	5	534	155	12	0	3	40	0	60
Future Vol, veh/h	107	183	1	5	534	155	12	0	3	40	0	60
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	345	-	-	-	-	155	-	-	-	150	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	94	94	94	38	38	38	78	78	78
Heavy Vehicles, %	1	2	2	2	2	1	2	2	2	1	2	1
Mvmt Flow	119	203	1	5	568	165	32	0	8	51	0	77

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	733	0	0	204	0	0	679	1185	102	897	1020	284
Stage 1	-	-	-	-	-	-	442	442	-	578	578	-
Stage 2	-	-	-	-	-	-	237	743	-	319	442	-
Critical Hdwy	5.32	-	-	5.34	-	-	6.44	6.54	7.14	6.42	6.54	7.12
Critical Hdwy Stg 1	-	-	-	-	-	-	7.34	5.54	-	7.32	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.74	5.54	-	6.72	5.54	-
Follow-up Hdwy	3.11	-	-	3.12	-	-	3.82	4.02	3.92	3.81	4.02	3.91
Pot Cap-1 Maneuver	529	-	-	930	-	-	392	188	793	296	235	610
Stage 1	-	-	-	-	-	-	479	575	-	390	499	-
Stage 2	-	-	-	-	-	-	684	420	-	614	575	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	529	-	-	930	-	-	281	144	793	241	180	610
Mov Cap-2 Maneuver	-	-	-	-	-	-	281	144	-	241	180	-
Stage 1	-	-	-	-	-	-	371	446	-	302	495	-
Stage 2	-	-	-	-	-	-	592	416	-	471	446	-






Approach	EB			WB			NB			SB		
HCM Control Delay, s	5.1	-	-	0.1	-	-	17.7	-	-	16.6	-	-
HCM LOS	C			C			C			C		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	323	529	-	-	930	-	-	241	610
HCM Lane V/C Ratio	0.122	0.225	-	-	0.006	-	-	0.213	0.126
HCM Control Delay (s)	17.7	13.8	-	-	8.9	0	-	23.9	11.8
HCM Lane LOS	C	B	-	-	A	A	-	C	B
HCM 95th %tile Q(veh)	0.4	0.9	-	-	0	-	-	0.8	0.4

HCM 6th TWSC  
24: Antelope Ridge Dr. & S. Pronghorn Meadow Cir

Existing Traffic  
PM Peak Hour

Intersection						
Int Delay, s/veh	1.5					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	6	21	44	218	79	4
Future Vol, veh/h	6	21	44	218	79	4
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	-	80	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	80	80	96	96
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	6	21	55	273	82	4
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	467	84	86	0	-	0
Stage 1	84	-	-	-	-	-
Stage 2	383	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	554	975	1510	-	-	-
Stage 1	939	-	-	-	-	-
Stage 2	689	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	534	975	1510	-	-	-
Mov Cap-2 Maneuver	534	-	-	-	-	-
Stage 1	905	-	-	-	-	-
Stage 2	689	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	9.5	1.3		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1510	-	824	-	-	
HCM Lane V/C Ratio	0.036	-	0.033	-	-	
HCM Control Delay (s)	7.5	-	9.5	-	-	
HCM Lane LOS	A	-	A	-	-	
HCM 95th %tile Q(veh)	0.1	-	0.1	-	-	

HCM 6th TWSC  
4: Antelope Ridge Dr. & North Carefree

Short-Term Total Traffic  
AM Peak Hour

Intersection												
Int Delay, s/veh	43.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	264	313	2	1	150	134	1	0	1	178	0	489
Future Vol, veh/h	264	313	2	1	150	134	1	0	1	178	0	489
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	350	-	-	-	-	155	-	-	-	350	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	80	80	80	78	78	78	50	50	50	74	74	74
Heavy Vehicles, %	1	2	2	2	2	1	2	2	2	1	2	1
Mvmt Flow	330	391	3	1	192	172	2	0	2	241	0	661

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	364	0	0	394	0	0	1132	1419	197	1010	1248	96
Stage 1	-	-	-	-	-	-	1053	1053	-	194	194	-
Stage 2	-	-	-	-	-	-	79	366	-	816	1054	-
Critical Hdwy	5.32	-	-	5.34	-	-	6.44	6.54	7.14	6.42	6.54	7.12
Critical Hdwy Stg 1	-	-	-	-	-	-	7.34	5.54	-	7.32	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.74	5.54	-	6.72	5.54	-
Follow-up Hdwy	3.11	-	-	3.12	-	-	3.82	4.02	3.92	3.81	4.02	3.91
Pot Cap-1 Maneuver	788	-	-	759	-	-	214	136	690	254	172	802
Stage 1	-	-	-	-	-	-	183	301	-	705	739	-
Stage 2	-	-	-	-	-	-	847	621	-	308	301	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	788	-	-	759	-	-	25	79	690	~ 170	100	802
Mov Cap-2 Maneuver	-	-	-	-	-	-	25	79	-	~ 170	100	-
Stage 1	-	-	-	-	-	-	106	175	-	410	738	-
Stage 2	-	-	-	-	-	-	149	620	-	~ 178	175	-






















Approach	EB	WB	NB	SB
HCM Control Delay, s	5.8	0	86.7	91.2
HCM LOS			F	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	48	788	-	-	759	-	-	170	802
HCM Lane V/C Ratio	0.083	0.419	-	-	0.002	-	-	1.415	0.824
HCM Control Delay (s)	86.7	12.8	-	-	9.8	0	-	268.5	26.7
HCM Lane LOS	F	B	-	-	A	A	-	F	D
HCM 95th %tile Q(veh)	0.3	2.1	-	-	0	-	-	14.9	9.2

Notes			
~: Volume exceeds capacity	\$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

# Timings 4: Antelope Ridge Dr. & North Carefree

Short-Term Total Traffic  
AM Peak Hour

									
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations		  		  			 		
Traffic Volume (vph)	264	313	1	150	134	1	0	178	0
Future Volume (vph)	264	313	1	150	134	1	0	178	0
Turn Type	Perm	NA	Perm	NA	Perm	Perm	NA	Perm	NA
Protected Phases		2		6			8		4
Permitted Phases	2		6		6	8		4	
Detector Phase	2	2	6	6	6	8	8	4	4
Switch Phase									
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	20.0	20.0
Minimum Split (s)	23.0	23.0	23.0	23.0	23.0	23.0	23.0	27.0	27.0
Total Split (s)	78.0	78.0	78.0	78.0	78.0	42.0	42.0	42.0	42.0
Total Split (%)	65.0%	65.0%	65.0%	65.0%	65.0%	35.0%	35.0%	35.0%	35.0%
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
All-Red Time (s)	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
Total Lost Time (s)	7.0	7.0		7.0	7.0		7.0	7.0	7.0
Lead/Lag									
Lead-Lag Optimize?									
Recall Mode	C-Max	C-Max	C-Max	C-Max	C-Max	None	None	None	None
Act Effect Green (s)	77.7	77.7		77.7	77.7		28.3	28.3	28.3
Actuated g/C Ratio	0.65	0.65		0.65	0.65		0.24	0.24	0.24
v/c Ratio	0.43	0.12		0.06	0.16		0.01	0.72	0.71
Control Delay	13.7	8.8		10.9	9.6		0.0	54.1	6.1
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	13.7	8.8		10.9	9.6		0.0	54.1	6.1
LOS	B	A		B	A		A	D	A
Approach Delay		11.0		10.3					18.9
Approach LOS		B		B					B

## Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green

Natural Cycle: 60

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.72

Intersection Signal Delay: 14.4

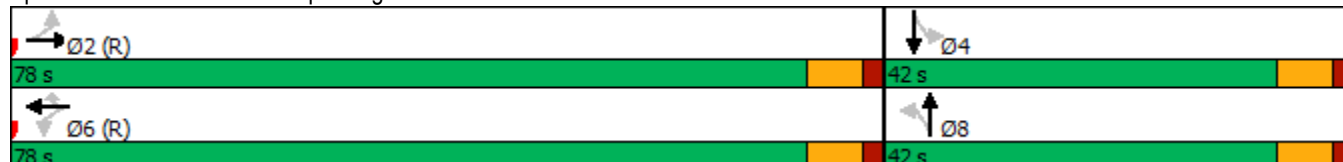
Intersection LOS: B

Intersection Capacity Utilization 65.7%







ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 4: Antelope Ridge Dr. & North Carefree





Intersection						
Int Delay, s/veh	9.3					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	21	450	275	658	1179	83
Future Vol, veh/h	21	450	275	658	1179	83
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Free	-	None	-	Yield
Storage Length	0	0	350	-	-	350
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	91	91	93	93
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	23	489	302	723	1268	89

Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	2234	- 1268	0 - 0
Stage 1	1268	- -	- - -
Stage 2	966	- -	- - -
Critical Hdwy	6.84	- 4.14	- - -
Critical Hdwy Stg 1	5.84	- -	- - -
Critical Hdwy Stg 2	5.84	- -	- - -
Follow-up Hdwy	3.52	- 2.22	- - -
Pot Cap-1 Maneuver	36	0 544	- - -
Stage 1	228	0 -	- - -
Stage 2	330	0 -	- - -
Platoon blocked, %			- - -
Mov Cap-1 Maneuver	~ 16	- 544	- - -
Mov Cap-2 Maneuver	~ 16	- -	- - -
Stage 1	101	- -	- - -
Stage 2	330	- -	- - -








Approach	EB	NB	SB
HCM Control Delay, s	\$ 718	5.8	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	544	- 16	-	-	-	-
HCM Lane V/C Ratio	0.556	- 1.427	-	-	-	-
HCM Control Delay (s)	19.6	- \$ 718	0	-	-	-
HCM Lane LOS	C	- F	A	-	-	-
HCM 95th %tile Q(veh)	3.4	- 3.4	-	-	-	-

Notes			
~: Volume exceeds capacity	\$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

# Timings 5: Marksheffel & North Carefree

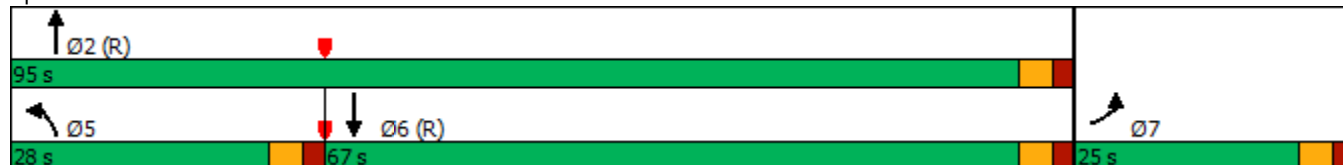
Short-Term Total Traffic  
AM Peak Hour

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	21	450	275	658	1179	83
Future Volume (vph)	21	450	275	658	1179	83
Turn Type	Prot	Free	Prot	NA	NA	Free
Protected Phases	7		5	2	6	
Permitted Phases		Free				Free
Detector Phase	7		5	2	6	
Switch Phase						
Minimum Initial (s)	20.0		15.0	4.0	4.0	
Minimum Split (s)	25.0		20.0	11.0	11.0	
Total Split (s)	25.0		28.0	95.0	67.0	
Total Split (%)	20.8%		23.3%	79.2%	55.8%	
Yellow Time (s)	3.0		3.0	3.0	3.0	
All-Red Time (s)	2.0		2.0	2.0	2.0	
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	
Total Lost Time (s)	5.0		5.0	5.0	5.0	
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?			Yes		Yes	
Recall Mode	None		None	C-Max	C-Max	
Act Effect Green (s)	20.0	120.0	16.7	108.0	83.3	120.0
Actuated g/C Ratio	0.17	1.00	0.14	0.90	0.69	1.00
v/c Ratio	0.08	0.31	0.63	0.23	0.52	0.06
Control Delay	51.4	1.3	55.0	2.5	12.3	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	51.4	1.3	55.0	2.5	12.3	0.1
LOS	D	A	D	A	B	A
Approach Delay	3.6			18.0	11.5	
Approach LOS	A			B	B	

## Intersection Summary

Cycle Length: 120  
Actuated Cycle Length: 120  
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green  
Natural Cycle: 80  
Control Type: Actuated-Coordinated  
Maximum v/c Ratio: 0.63  
Intersection Signal Delay: 12.4  
Intersection LOS: B  
Intersection Capacity Utilization 74.3%  
ICU Level of Service D  
Analysis Period (min) 15

Splits and Phases: 5: Marksheffel & North Carefree



Intersection												
Int Delay, s/veh	1.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↕		↕	↕	
Traffic Vol, veh/h	6	0	54	21	0	13	14	374	11	3	592	4
Future Vol, veh/h	6	0	54	21	0	13	14	374	11	3	592	4
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	-	-	-	-	-	-	80	-	-	80	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	88	100	88	92	92	92	75	80	92	92	80	75
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	7	0	61	23	0	14	19	468	12	3	740	5

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	1268	1267	743	1291	1263	474	745	0	0	480	0	0
Stage 1	749	749	-	512	512	-	-	-	-	-	-	-
Stage 2	519	518	-	779	751	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	145	169	415	140	170	590	863	-	-	1082	-	-
Stage 1	404	419	-	545	536	-	-	-	-	-	-	-
Stage 2	540	533	-	389	418	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	139	165	415	117	166	590	863	-	-	1082	-	-
Mov Cap-2 Maneuver	139	165	-	117	166	-	-	-	-	-	-	-
Stage 1	395	418	-	533	524	-	-	-	-	-	-	-
Stage 2	515	521	-	331	417	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	17.9		32.2		0.3		0	
HCM LOS	C		D					





Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	863	-	-	346	169	1082	-
HCM Lane V/C Ratio	0.022	-	-	0.197	0.219	0.003	-
HCM Control Delay (s)	9.3	-	-	17.9	32.2	8.3	-
HCM Lane LOS	A	-	-	C	D	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0.7	0.8	0	-

HCM 6th TWSC  
25: Antelope Ridge Dr. & North Site Access

Short-Term Total Traffic  
AM Peak Hour

Intersection

Int Delay, s/veh 1.8

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	53	26	373	20	5	546
Future Vol, veh/h	53	26	373	20	5	546
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	-	-	-	80	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	75	92	92	75
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	58	28	497	22	5	728

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	1246	508	0
Stage 1	508	-	-
Stage 2	738	-	-
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	192	565	-
Stage 1	604	-	-
Stage 2	473	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	191	565	-
Mov Cap-2 Maneuver	191	-	-
Stage 1	601	-	-
Stage 2	473	-	-

Approach	WB	NB	SB
HCM Control Delay, s	27.6	0	0.1
HCM LOS	D		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	244	1047
HCM Lane V/C Ratio	-	-	0.352	0.005
HCM Control Delay (s)	-	-	27.6	8.5
HCM Lane LOS	-	-	D	A
HCM 95th %tile Q(veh)	-	-	1.5	0

HCM 6th TWSC  
4: Antelope Ridge Dr. & North Carefree

Short-Term Total Traffic  
Midday

Intersection												
Int Delay, s/veh	13.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰ ↑↑↑			↰ ↑↑↑		↰		↰		↰	↰	
Traffic Vol, veh/h	168	189	2	0	263	133	0	0	1	129	0	362
Future Vol, veh/h	168	189	2	0	263	133	0	0	1	129	0	362
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	345	-	-	-	-	155	-	-	-	350	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	80	80	80	78	78	78	50	50	50	74	74	74
Heavy Vehicles, %	1	2	2	2	2	1	2	2	2	1	2	1
Mvmt Flow	210	236	3	0	337	171	0	0	2	174	0	489




















Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	508	0	0	239	0	0	793	1166	120	851	996	169
Stage 1	-	-	-	-	-	-	658	658	-	337	337	-
Stage 2	-	-	-	-	-	-	135	508	-	514	659	-
Critical Hdwy	5.32	-	-	5.34	-	-	6.44	6.54	7.14	6.42	6.54	7.12
Critical Hdwy Stg 1	-	-	-	-	-	-	7.34	5.54	-	7.32	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.74	5.54	-	6.72	5.54	-
Follow-up Hdwy	3.11	-	-	3.12	-	-	3.82	4.02	3.92	3.81	4.02	3.91
Pot Cap-1 Maneuver	675	-	-	896	-	-	337	193	772	314	243	721
Stage 1	-	-	-	-	-	-	342	459	-	566	640	-
Stage 2	-	-	-	-	-	-	786	537	-	469	459	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	675	-	-	896	-	-	82	133	772	238	167	721
Mov Cap-2 Maneuver	-	-	-	-	-	-	82	133	-	238	167	-
Stage 1	-	-	-	-	-	-	236	316	-	390	640	-
Stage 2	-	-	-	-	-	-	253	537	-	322	316	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	6	0	9.7	28.5
HCM LOS			A	D

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	772	675	-	-	896	-	-	238	721
HCM Lane V/C Ratio	0.003	0.311	-	-	-	-	-	0.732	0.678
HCM Control Delay (s)	9.7	12.7	-	-	0	-	-	52.7	19.9
HCM Lane LOS	A	B	-	-	A	-	-	F	C
HCM 95th %tile Q(veh)	0	1.3	-	-	0	-	-	5	5.3

# Timings 4: Antelope Ridge Dr. & North Carefree

Short-Term Total Traffic  
Midday

							
Lane Group	EBL	EBT	WBT	WBR	NBT	SBL	SBT
Lane Configurations		  	  		 		
Traffic Volume (vph)	168	189	263	133	0	129	0
Future Volume (vph)	168	189	263	133	0	129	0
Turn Type	Perm	NA	NA	Perm	NA	Perm	NA
Protected Phases		2	6		8		4
Permitted Phases	2			6		4	
Detector Phase	2	2	6	6	8	4	4
Switch Phase							
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	20.0	20.0
Minimum Split (s)	23.0	23.0	23.0	23.0	23.0	27.0	27.0
Total Split (s)	80.0	80.0	80.0	80.0	40.0	40.0	40.0
Total Split (%)	66.7%	66.7%	66.7%	66.7%	33.3%	33.3%	33.3%
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0
All-Red Time (s)	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
Total Lost Time (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Lead/Lag							
Lead-Lag Optimize?							
Recall Mode	C-Max	C-Max	C-Max	C-Max	None	None	None
Act Effect Green (s)	82.5	82.5	82.5	82.5	23.5	23.5	23.5
Actuated g/C Ratio	0.69	0.69	0.69	0.69	0.20	0.20	0.20
v/c Ratio	0.30	0.07	0.10	0.15	0.00	0.63	0.66
Control Delay	9.5	6.6	6.9	2.4	0.0	54.0	6.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	9.5	6.6	6.9	2.4	0.0	54.0	6.4
LOS	A	A	A	A	A	D	A
Approach Delay		8.0	5.4				18.9
Approach LOS		A	A				B

## Intersection Summary

Cycle Length: 120  
Actuated Cycle Length: 120  
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green  
Natural Cycle: 50  
Control Type: Actuated-Coordinated  
Maximum v/c Ratio: 0.66  
Intersection Signal Delay: 11.6  
Intersection Capacity Utilization 54.3%  
Analysis Period (min) 15

Intersection LOS: B

ICU Level of Service A

Splits and Phases: 4: Antelope Ridge Dr. & North Carefree



HCM 6th TWSC  
24: Antelope Ridge Dr. & S. Pronghorn Meadow Cir/S Site Access

Short-Term Total Traffic  
Midday

Intersection												
Int Delay, s/veh	1.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↕		↕	↕	
Traffic Vol, veh/h	2	0	24	14	0	7	35	247	19	5	453	8
Future Vol, veh/h	2	0	24	14	0	7	35	247	19	5	453	8
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	-	-	-	-	-	-	80	-	-	80	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	88	100	88	92	92	92	75	80	92	92	80	75
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	2	0	27	15	0	8	47	309	21	5	566	11





Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	1000	1006	572	1009	1001	320	577	0	0	330	0	0
Stage 1	582	582	-	414	414	-	-	-	-	-	-	-
Stage 2	418	424	-	595	587	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	222	241	520	219	243	721	996	-	-	1229	-	-
Stage 1	499	499	-	616	593	-	-	-	-	-	-	-
Stage 2	612	587	-	491	497	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	211	229	520	200	231	721	996	-	-	1229	-	-
Mov Cap-2 Maneuver	211	229	-	200	231	-	-	-	-	-	-	-
Stage 1	476	497	-	587	565	-	-	-	-	-	-	-
Stage 2	577	559	-	463	495	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	13.2		20		1.1		0.1	
HCM LOS	B		C					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	996	-	-	467 263	1229	-	-
HCM Lane V/C Ratio	0.047	-	-	0.063 0.087	0.004	-	-
HCM Control Delay (s)	8.8	-	-	13.2 20	7.9	-	-
HCM Lane LOS	A	-	-	B C	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.2 0.3	0	-	-

HCM 6th TWSC  
25: Antelope Ridge Dr. & North Site Access









Short-Term Total Traffic  
Midday

Intersection						
Int Delay, s/veh	0.7					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	25	14	222	34	9	441
Future Vol, veh/h	25	14	222	34	9	441
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	-	-	-	80	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	75	92	92	75
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	27	15	296	37	10	588
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	923	315	0	0	333	0
Stage 1	315	-	-	-	-	-
Stage 2	608	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	299	725	-	-	1226	-
Stage 1	740	-	-	-	-	-
Stage 2	543	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	297	725	-	-	1226	-
Mov Cap-2 Maneuver	297	-	-	-	-	-
Stage 1	734	-	-	-	-	-
Stage 2	543	-	-	-	-	-
Approach	WB	NB	SB			
HCM Control Delay, s	15.8	0	0.1			
HCM LOS	C					
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT		
Capacity (veh/h)	-	-	377	1226	-	
HCM Lane V/C Ratio	-	-	0.112	0.008	-	
HCM Control Delay (s)	-	-	15.8	8	-	
HCM Lane LOS	-	-	C	A	-	
HCM 95th %tile Q(veh)	-	-	0.4	0	-	



HCM 2010 TWSC  
4: Antelope Ridge Dr. & North Carefree

Short-Term Total Traffic  
PM Peak Hour

Intersection												
Int Delay, s/veh	5.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	158	183	1	5	534	205	12	0	3	59	0	90
Future Vol, veh/h	158	183	1	5	534	205	12	0	3	59	0	90
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	345	-	-	-	-	155	-	-	-	150	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	94	94	94	38	38	38	78	78	78
Heavy Vehicles, %	1	2	2	2	2	1	2	2	2	1	2	1
Mvmt Flow	176	203	1	5	568	218	32	0	8	76	0	115






















Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	786	0	0	204	0	0	793	1352	102	1011	1134	284
Stage 1	-	-	-	-	-	-	556	556	-	578	578	-
Stage 2	-	-	-	-	-	-	237	796	-	433	556	-
Critical Hdwy	5.32	-	-	5.34	-	-	6.44	6.54	7.14	6.42	6.54	7.12
Critical Hdwy Stg 1	-	-	-	-	-	-	7.34	5.54	-	7.32	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.74	5.54	-	6.72	5.54	-
Follow-up Hdwy	3.11	-	-	3.12	-	-	3.82	4.02	3.92	3.81	4.02	3.91
Pot Cap-1 Maneuver	499	-	-	930	-	-	337	149	793	254	201	610
Stage 1	-	-	-	-	-	-	402	511	-	390	499	-
Stage 2	-	-	-	-	-	-	684	397	-	525	511	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	499	-	-	930	-	-	197	96	793	181	129	610
Mov Cap-2 Maneuver	-	-	-	-	-	-	197	96	-	181	129	-
Stage 1	-	-	-	-	-	-	260	331	-	252	494	-
Stage 2	-	-	-	-	-	-	549	393	-	336	331	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	7.4	0.1	23.7	22.7
HCM LOS			C	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	232	499	-	-	930	-	-	181	610
HCM Lane V/C Ratio	0.17	0.352	-	-	0.006	-	-	0.418	0.189
HCM Control Delay (s)	23.7	16.1	-	-	8.9	0	-	38.5	12.3
HCM Lane LOS	C	C	-	-	A	A	-	E	B
HCM 95th %tile Q(veh)	0.6	1.6	-	-	0	-	-	1.9	0.7

# Timings 4: Antelope Ridge Dr. & North Carefree

Short-Term Total Traffic  
PM Peak Hour

									
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations		  		  			 		
Traffic Volume (vph)	158	183	5	534	205	12	0	59	0
Future Volume (vph)	158	183	5	534	205	12	0	59	0
Turn Type	Perm	NA	Perm	NA	Perm	Perm	NA	Perm	NA
Protected Phases		2		6			8		4
Permitted Phases	2		6		6	8		4	
Detector Phase	2	2	6	6	6	8	8	4	4
Switch Phase									
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	20.0	20.0
Minimum Split (s)	23.0	23.0	23.0	23.0	23.0	23.0	23.0	27.0	27.0
Total Split (s)	90.0	90.0	90.0	90.0	90.0	30.0	30.0	30.0	30.0
Total Split (%)	75.0%	75.0%	75.0%	75.0%	75.0%	25.0%	25.0%	25.0%	25.0%
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
All-Red Time (s)	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
Total Lost Time (s)	7.0	7.0		7.0	7.0		7.0	7.0	7.0
Lead/Lag									
Lead-Lag Optimize?									
Recall Mode	C-Max	C-Max	C-Max	C-Max	C-Max	None	None	None	None
Act Effect Green (s)	86.0	86.0		86.0	86.0		20.0	20.0	20.0
Actuated g/C Ratio	0.72	0.72		0.72	0.72		0.17	0.17	0.17
v/c Ratio	0.31	0.06		0.17	0.18		0.16	0.33	0.20
Control Delay	7.8	5.0		8.5	5.2		17.0	48.8	0.8
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	7.8	5.0		8.5	5.2		17.0	48.8	0.8
LOS	A	A		A	A		B	D	A
Approach Delay		6.3		7.6			17.0		19.9
Approach LOS		A		A			B		B

## Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green

Natural Cycle: 55

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.33

Intersection Signal Delay: 9.2

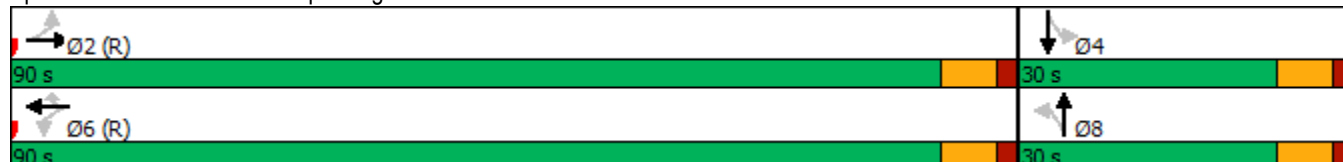
Intersection LOS: A







Intersection Capacity Utilization 53.3%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 4: Antelope Ridge Dr. & North Carefree



Intersection						
Int Delay, s/veh	21.5					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	17	219	610	1035	723	128
Future Vol, veh/h	17	219	610	1035	723	128
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Free	-	None	-	Yield
Storage Length	0	0	350	-	-	350
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	86	86	97	97	97	97
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	20	255	629	1067	745	132

Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	2537	- 745	0 - 0
Stage 1	745	- -	- - -
Stage 2	1792	- -	- - -
Critical Hdwy	6.84	- 4.14	- - -
Critical Hdwy Stg 1	5.84	- -	- - -
Critical Hdwy Stg 2	5.84	- -	- - -
Follow-up Hdwy	3.52	- 2.22	- - -
Pot Cap-1 Maneuver	22	0 859	- - -
Stage 1	430	0 -	- - -
Stage 2	118	0 -	- - -
Platoon blocked, %			- - -
Mov Cap-1 Maneuver	~ 6	- 859	- - -
Mov Cap-2 Maneuver	~ 6	- -	- - -
Stage 1	115	- -	- - -
Stage 2	118	- -	- - -








Approach	EB	NB	SB
HCM Control Delay, s	2196.5	7.3	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	859	-	6	-	-	-
HCM Lane V/C Ratio	0.732	-	3.295	-	-	-
HCM Control Delay (s)	19.7	\$ 2196.5	0	-	-	-
HCM Lane LOS	C	-	F	A	-	-
HCM 95th %tile Q(veh)	6.7	-	3.7	-	-	-

Notes			
~: Volume exceeds capacity	\$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Timings  
5: Marksheffel & North Carefree

Short-Term Total Traffic  
PM Peak Hour

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	17	219	610	1035	723	128
Future Volume (vph)	17	219	610	1035	723	128
Turn Type	Prot	Free	Prot	NA	NA	Free
Protected Phases	7		5	2	6	
Permitted Phases		Free				Free
Detector Phase	7		5	2	6	
Switch Phase						
Minimum Initial (s)	15.0		4.0	4.0	4.0	
Minimum Split (s)	20.0		11.0	11.0	11.0	
Total Split (s)	25.0		20.0	95.0	75.0	
Total Split (%)	20.8%		16.7%	79.2%	62.5%	
Yellow Time (s)	3.0		3.0	3.0	3.0	
All-Red Time (s)	2.0		2.0	2.0	2.0	
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	
Total Lost Time (s)	5.0		5.0	5.0	5.0	
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?			Yes		Yes	
Recall Mode	None		None	C-Max	C-Max	
Act Effect Green (s)	15.0	120.0	30.5	110.0	71.5	120.0
Actuated g/C Ratio	0.12	1.00	0.25	0.92	0.60	1.00
v/c Ratio	0.09	0.16	0.72	0.33	0.35	0.08
Control Delay	54.3	0.6	48.0	2.1	13.1	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	54.3	0.6	48.0	2.1	13.1	0.1
LOS	D	A	D	A	B	A
Approach Delay	4.5			19.1	11.1	
Approach LOS	A			B	B	

Intersection Summary

Cycle Length: 120  
 Actuated Cycle Length: 120  
 Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green  
 Natural Cycle: 60  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.72  
 Intersection Signal Delay: 15.2  
 Intersection Capacity Utilization 62.4%  
 Analysis Period (min) 15

Intersection LOS: B  
 ICU Level of Service B

Splits and Phases: 5: Marksheffel & North Carefree



Intersection												
Int Delay, s/veh	1.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↕		↕	↕	
Traffic Vol, veh/h	6	0	21	18	0	8	44	283	35	9	110	4
Future Vol, veh/h	6	0	21	18	0	8	44	283	35	9	110	4
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	-	-	-	-	-	-	80	-	-	80	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	92	92	92	80	80	80	96	96	96
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	6	0	21	20	0	9	55	354	44	9	115	4





Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	626	643	117	632	623	376	119	0	0	398	0	0
Stage 1	135	135	-	486	486	-	-	-	-	-	-	-
Stage 2	491	508	-	146	137	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	397	392	935	393	402	670	1469	-	-	1161	-	-
Stage 1	868	785	-	563	551	-	-	-	-	-	-	-
Stage 2	559	539	-	857	783	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	378	374	935	371	384	670	1469	-	-	1161	-	-
Mov Cap-2 Maneuver	378	374	-	371	384	-	-	-	-	-	-	-
Stage 1	836	779	-	542	531	-	-	-	-	-	-	-
Stage 2	531	519	-	831	777	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	10.3		14		0.9		0.6	
HCM LOS	B		B					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1469	-	-	704 430	1161	-	-
HCM Lane V/C Ratio	0.037	-	-	0.038 0.066	0.008	-	-
HCM Control Delay (s)	7.5	-	-	10.3 14	8.1	-	-
HCM Lane LOS	A	-	-	B B	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.1 0.2	0	-	-

HCM 2010 TWSC  
25: Antelope Ridge Dr. & North Site Access

Short-Term Total Traffic  
PM Peak Hour

Intersection						
Int Delay, s/veh	1.4					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	31	17	232	65	17	92
Future Vol, veh/h	31	17	232	65	17	92
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	-	-	-	80	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	80	92	92	96
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	34	18	290	71	18	96
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	458	326	0	0	361	0
Stage 1	326	-	-	-	-	-
Stage 2	132	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	561	715	-	-	1198	-
Stage 1	731	-	-	-	-	-
Stage 2	894	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	553	715	-	-	1198	-
Mov Cap-2 Maneuver	553	-	-	-	-	-
Stage 1	720	-	-	-	-	-
Stage 2	894	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s	11.6	0		1.3		
HCM LOS	B					
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT		
Capacity (veh/h)	-	-	601	1198	-	
HCM Lane V/C Ratio	-	-	0.087	0.015	-	
HCM Control Delay (s)	-	-	11.6	8.1	-	
HCM Lane LOS	-	-	B	A	-	
HCM 95th %tile Q(veh)	-	-	0.3	0	-	

HCM 6th TWSC  
4: Antelope Ridge Dr. & North Carefree

2040 Background Traffic  
AM Peak Hour

Intersection												
Int Delay, s/veh	30.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	254	611	2	1	1371	125	1	0	1	267	0	343
Future Vol, veh/h	254	611	2	1	1371	125	1	0	1	267	0	343
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	350	-	-	-	-	-	-	-	-	350	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	80	95	80	78	95	78	50	50	50	74	74	74
Heavy Vehicles, %	1	2	2	2	2	1	2	2	2	1	2	1
Mvmt Flow	318	643	3	1	1443	160	2	0	2	361	0	464

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1603	0	0	646	0	0	1860	2886	323	2338	2727	722
Stage 1	-	-	-	-	-	-	1281	1281	-	1445	1445	-
Stage 2	-	-	-	-	-	-	579	1605	-	893	1282	-
Critical Hdwy	5.32	-	-	5.34	-	-	6.44	6.54	7.14	6.42	6.54	7.12
Critical Hdwy Stg 1	-	-	-	-	-	-	7.34	5.54	-	7.32	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.74	5.54	-	6.72	5.54	-
Follow-up Hdwy	3.11	-	-	3.12	-	-	3.82	4.02	3.92	3.81	4.02	3.91
Pot Cap-1 Maneuver	~ 200	-	-	578	-	-	78	16	574	~ 39	20	~ 319
Stage 1	-	-	-	-	-	-	127	235	-	~ 98	195	-
Stage 2	-	-	-	-	-	-	427	163	-	~ 276	234	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	~ 200	-	-	578	-	-	-	0	574	-	0	~ 319
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	0	-	-	0	-
Stage 1	-	-	-	-	-	-	127	0	-	~ 98	191	-
Stage 2	-	-	-	-	-	-	-	160	-	-	0	-






















Approach	EB	WB	NB	SB
HCM Control Delay, s	108.6	0.1	-	-
HCM LOS	-	-	-	-

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	- ~ 200	-	-	-	578	-	-	-	319
HCM Lane V/C Ratio	- 1.588	-	-	-	0.002	-	-	-	1.453
HCM Control Delay (s)	- \$ 329.3	-	-	-	11.2	0.1	-	-	251.5
HCM Lane LOS	- F	-	-	-	B	A	-	-	F
HCM 95th %tile Q(veh)	- 20.5	-	-	-	0	-	-	-	25

Notes			
~: Volume exceeds capacity	\$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

# Timings 4: Antelope Ridge Dr. & North Carefree

2040 Background Traffic  
AM Peak Hour

									
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations		  		  			 		
Traffic Volume (vph)	254	611	1	1371	125	1	0	267	0
Future Volume (vph)	254	611	1	1371	125	1	0	267	0
Turn Type	pm+pt	NA	Perm	NA	Perm	Perm	NA	Perm	NA
Protected Phases	5	2		6			8		4
Permitted Phases	2		6		6	8		4	
Detector Phase	5	2	6	6	6	8	8	4	4
Switch Phase									
Minimum Initial (s)	4.0	10.0	10.0	10.0	10.0	5.0	5.0	5.0	5.0
Minimum Split (s)	11.0	15.0	15.0	15.0	15.0	10.0	10.0	10.0	10.0
Total Split (s)	24.0	55.0	31.0	31.0	31.0	45.0	45.0	45.0	45.0
Total Split (%)	24.0%	55.0%	31.0%	31.0%	31.0%	45.0%	45.0%	45.0%	45.0%
Yellow Time (s)	3.0	3.0	3.0	3.0	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
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0
Lead/Lag	Lead		Lag	Lag	Lag				
Lead-Lag Optimize?	Yes		Yes	Yes	Yes				
Recall Mode	None	C-Max	C-Max	C-Max	C-Max	None	None	None	None
Act Effect Green (s)	57.8	57.8		36.6	36.6		32.2	32.2	32.2
Actuated g/C Ratio	0.58	0.58		0.37	0.37		0.32	0.32	0.32
v/c Ratio	0.87	0.22		0.83	0.23		0.01	0.79	0.56
Control Delay	48.3	11.4		36.7	5.8		0.0	43.1	5.0
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	48.3	11.4		36.7	5.8		0.0	43.1	5.0
LOS	D	B		D	A		A	D	A
Approach Delay		23.6		33.6					21.6
Approach LOS		C		C					C

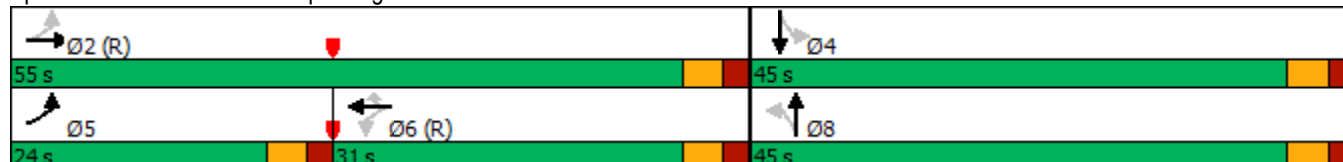
## Intersection Summary

Cycle Length: 100  
 Actuated Cycle Length: 100  
 Offset: 86 (86%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green  
 Natural Cycle: 55  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.87  
 Intersection Signal Delay: 27.8  
 Intersection Capacity Utilization 74.5%  
 Analysis Period (min) 15

Intersection LOS: C

ICU Level of Service D

























Splits and Phases: 4: Antelope Ridge Dr. & North Carefree





Timings  
5: Marksheffel & North Carefree

2040 Background Traffic  
AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	101	328	450	100	782	154	585	838	50	78	1435	130
Future Volume (vph)	101	328	450	100	782	154	585	838	50	78	1435	130
Turn Type	pm+pt	NA	Free	pm+pt	NA	Free	Prot	NA	Free	pm+pt	NA	Free
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		Free	8		Free			Free	6		Free
Detector Phase	7	4		3	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Minimum Split (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Total Split (s)	11.0	20.0		20.0	29.0		26.0	68.0		12.0	54.0	
Total Split (%)	9.2%	16.7%		16.7%	24.2%		21.7%	56.7%		10.0%	45.0%	
Yellow Time (s)	3.0	3.0		3.0	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	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	-2.0		0.0	-2.0	
Total Lost Time (s)	5.0	5.0		5.0	5.0		5.0	3.0		5.0	3.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	
Act Effect Green (s)	24.5	18.5	120.0	32.9	23.2	120.0	21.8	68.2	120.0	55.7	51.0	120.0
Actuated g/C Ratio	0.20	0.15	1.00	0.27	0.19	1.00	0.18	0.57	1.00	0.46	0.42	1.00
v/c Ratio	0.69	0.43	0.29	0.36	0.81	0.10	0.96	0.42	0.03	0.23	0.97	0.08
Control Delay	58.9	48.3	0.5	36.0	53.7	0.1	76.0	16.3	0.0	12.2	51.9	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	58.9	48.3	0.5	36.0	53.7	0.1	76.0	16.3	0.0	12.2	51.9	0.1
LOS	E	D	A	D	D	A	E	B	A	B	D	A
Approach Delay		25.1			44.0			39.5			45.9	
Approach LOS		C			D			D			D	

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

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

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.97

Intersection Signal Delay: 40.0

Intersection LOS: D





Intersection Capacity Utilization 92.9%

ICU Level of Service F

Analysis Period (min) 15

Splits and Phases: 5: Marksheffel & North Carefree



Intersection						
Int Delay, s/veh	1					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	6	54	14	364	556	4
Future Vol, veh/h	6	54	14	364	556	4
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	-	80	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	88	88	92	80	80	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	7	61	15	455	695	4
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	1182	697	699	0	-	0
Stage 1	697	-	-	-	-	-
Stage 2	485	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	210	441	898	-	-	-
Stage 1	494	-	-	-	-	-
Stage 2	619	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	206	441	898	-	-	-
Mov Cap-2 Maneuver	206	-	-	-	-	-
Stage 1	486	-	-	-	-	-
Stage 2	619	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	16	0.3		0		
HCM LOS	C					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	898	-	396	-	-	
HCM Lane V/C Ratio	0.017	-	0.172	-	-	
HCM Control Delay (s)	9.1	-	16	-	-	
HCM Lane LOS	A	-	C	-	-	
HCM 95th %tile Q(veh)	0.1	-	0.6	-	-	

HCM 6th TWSC  
4: Antelope Ridge Dr. & North Carefree

2040 Background Traffic  
3:00 - 4:00 PM

Intersection												
Int Delay, s/veh	216.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	152	530	2	0	1215	121	0	0	1	213	0	266
Future Vol, veh/h	152	530	2	0	1215	121	0	0	1	213	0	266
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	345	-	-	-	-	155	-	-	-	150	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	97	97	97	89	95	89	100	100	100	90	90	90
Heavy Vehicles, %	1	2	2	2	2	1	2	2	2	1	2	1
Mvmt Flow	157	546	2	0	1279	136	0	0	1	237	0	296

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1415	0	0	548	0	0	1373	2276	274	1811	2141	640
Stage 1	-	-	-	-	-	-	861	861	-	1279	1279	-
Stage 2	-	-	-	-	-	-	512	1415	-	532	862	-
Critical Hdwy	5.32	-	-	5.34	-	-	6.44	6.54	7.14	6.42	6.54	7.12
Critical Hdwy Stg 1	-	-	-	-	-	-	7.34	5.54	-	7.32	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.74	5.54	-	6.72	5.54	-
Follow-up Hdwy	3.11	-	-	3.12	-	-	3.82	4.02	3.92	3.81	4.02	3.91
Pot Cap-1 Maneuver	248	-	-	643	-	-	154	40	617	~ 84	48	360
Stage 1	-	-	-	-	-	-	248	371	-	~ 128	235	-
Stage 2	-	-	-	-	-	-	468	202	-	458	370	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	248	-	-	643	-	-	14	15	617	~ 41	18	360
Mov Cap-2 Maneuver	-	-	-	-	-	-	14	15	-	~ 41	18	-
Stage 1	-	-	-	-	-	-	91	136	-	~ 47	235	-
Stage 2	-	-	-	-	-	-	84	202	-	~ 168	136	-




















Approach	EB	WB	NB	SB
HCM Control Delay, s	9.2	0	10.8	\$ 1067.8
HCM LOS			B	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	617	248	-	-	643	-	-	41	360
HCM Lane V/C Ratio	0.002	0.632	-	-	-	-	-	5.772	0.821
HCM Control Delay (s)	10.8	41.5	-	-	0	-	-	\$ 2341.8	47.6
HCM Lane LOS	B	E	-	-	A	-	-	F	E
HCM 95th %tile Q(veh)	0	3.9	-	-	0	-	-	27.7	7.2

Notes			
~: Volume exceeds capacity	\$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

# Timings 4: Antelope Ridge Dr. & North Carefree

2040 Background Traffic  
3:00 - 4:00 PM






							
Lane Group	EBL	EBT	WBT	WBR	NBT	SBL	SBT
Lane Configurations		  	  		 		
Traffic Volume (vph)	152	530	1215	121	0	213	0
Future Volume (vph)	152	530	1215	121	0	213	0
Turn Type	pm+pt	NA	NA	Perm	NA	Perm	NA
Protected Phases	5	2	6		8		4
Permitted Phases	2			6		4	
Detector Phase	5	2	6	6	8	4	4
Switch Phase							
Minimum Initial (s)	5.0	10.0	10.0	10.0	5.0	5.0	5.0
Minimum Split (s)	10.0	15.0	15.0	15.0	10.0	10.0	10.0
Total Split (s)	10.0	60.0	50.0	50.0	30.0	30.0	30.0
Total Split (%)	11.1%	66.7%	55.6%	55.6%	33.3%	33.3%	33.3%
Yellow Time (s)	3.0	3.0	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
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead		Lag	Lag			
Lead-Lag Optimize?	Yes		Yes	Yes			
Recall Mode	None	C-Max	C-Max	C-Max	None	None	None
Act Effect Green (s)	60.0	60.0	48.5	48.5	20.0	20.0	20.0
Actuated g/C Ratio	0.67	0.67	0.54	0.54	0.22	0.22	0.22
v/c Ratio	0.53	0.16	0.47	0.15	0.00	0.75	0.64
Control Delay	13.9	6.3	14.1	2.7	0.0	47.1	22.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	13.9	6.3	14.1	2.7	0.0	47.1	22.1
LOS	B	A	B	A	A	D	C
Approach Delay		8.0	13.0				33.2
Approach LOS		A	B				C

## Intersection Summary

Cycle Length: 90
Actuated Cycle Length: 90
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 45
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.75
Intersection Signal Delay: 15.7
Intersection Capacity Utilization 64.7%
Analysis Period (min) 15
Intersection LOS: B
ICU Level of Service C

Splits and Phases: 4: Antelope Ridge Dr. & North Carefree



Intersection						
Int Delay, s/veh	0.8					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	2	24	35	238	456	8
Future Vol, veh/h	2	24	35	238	456	8
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	80	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	70	70	100	100
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	2	24	50	340	456	8
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	900	460	464	0	-	0
Stage 1	460	-	-	-	-	-
Stage 2	440	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	309	601	1097	-	-	-
Stage 1	636	-	-	-	-	-
Stage 2	649	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	295	601	1097	-	-	-
Mov Cap-2 Maneuver	295	-	-	-	-	-
Stage 1	607	-	-	-	-	-
Stage 2	649	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	11.8	1.1		0		
HCM LOS	B					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1097	-	557	-	-	
HCM Lane V/C Ratio	0.046	-	0.047	-	-	
HCM Control Delay (s)	8.4	-	11.8	-	-	
HCM Lane LOS	A	-	B	-	-	
HCM 95th %tile Q(veh)	0.1	-	0.1	-	-	

HCM 6th TWSC  
4: Antelope Ridge Dr. & North Carefree

2040 Background Traffic  
PM Peak Hour

Intersection												
Int Delay, s/veh	90.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	123	1546	1	5	1305	174	12	0	3	69	0	58
Future Vol, veh/h	123	1546	1	5	1305	174	12	0	3	69	0	58
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	345	-	-	-	-	-	-	-	-	150	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	94	90	94	94	94	38	38	38	78	78	78
Heavy Vehicles, %	1	2	2	2	2	1	2	2	2	1	2	1
Mvmt Flow	137	1645	1	5	1388	185	32	0	8	88	0	74

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1573	0	0	1646	0	0	2485	3503	823	2330	3318	694
Stage 1	-	-	-	-	-	-	1920	1920	-	1398	1398	-
Stage 2	-	-	-	-	-	-	565	1583	-	932	1920	-
Critical Hdwy	5.32	-	-	5.34	-	-	6.44	6.54	7.14	6.42	6.54	7.12
Critical Hdwy Stg 1	-	-	-	-	-	-	7.34	5.54	-	7.32	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.74	5.54	-	6.72	5.54	-
Follow-up Hdwy	3.11	-	-	3.12	-	-	3.82	4.02	3.92	3.81	4.02	3.91
Pot Cap-1 Maneuver	207	-	-	189	-	-	~ 31	6	272	~ 40	8	332
Stage 1	-	-	-	-	-	-	44	113	-	105	206	-
Stage 2	-	-	-	-	-	-	435	167	-	261	113	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	207	-	-	189	-	-	~ 9	2	272	~ 15	2	332
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 9	2	-	~ 15	2	-
Stage 1	-	-	-	-	-	-	~ 15	38	-	~ 35	154	-
Stage 2	-	-	-	-	-	-	253	125	-	~ 86	38	-






















Approach	EB	WB	NB	SB
HCM Control Delay, s	3.9	1.8	\$ 1846.2	\$ 1479.6
HCM LOS			F	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	11	207	-	-	189	-	-	15	332
HCM Lane V/C Ratio	3.589	0.66	-	-	0.028	-	-	5.897	0.224
HCM Control Delay (s)	\$ 1846.2	50.9	-	-	24.6	2	\$ 2707.5	18.9	
HCM Lane LOS	F	F	-	-	C	A	-	F	C
HCM 95th %tile Q(veh)	6	4	-	-	0.1	-	-	12	0.8

Notes												
~: Volume exceeds capacity		\$: Delay exceeds 300s		+: Computation Not Defined		*: All major volume in platoon						

# Timings 4: Antelope Ridge Dr. & North Carefree

2040 Background Traffic  
PM Peak Hour

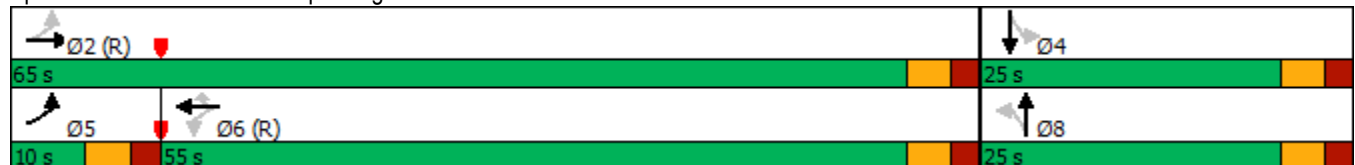
									
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations		  		  			 		
Traffic Volume (vph)	123	1546	5	1305	174	12	0	69	0
Future Volume (vph)	123	1546	5	1305	174	12	0	69	0
Turn Type	pm+pt	NA	Perm	NA	Perm	Perm	NA	Perm	NA
Protected Phases	5	2		6			8		4
Permitted Phases	2		6		6	8		4	
Detector Phase	5	2	6	6	6	8	8	4	4
Switch Phase									
Minimum Initial (s)	5.0	10.0	10.0	10.0	10.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.0	15.0	15.0	15.0	15.0	10.0	10.0	10.0	10.0
Total Split (s)	10.0	65.0	55.0	55.0	55.0	25.0	25.0	25.0	25.0
Total Split (%)	11.1%	72.2%	61.1%	61.1%	61.1%	27.8%	27.8%	27.8%	27.8%
Yellow Time (s)	3.0	3.0	3.0	3.0	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
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0
Lead/Lag	Lead		Lag	Lag	Lag				
Lead-Lag Optimize?	Yes		Yes	Yes	Yes				
Recall Mode	None	C-Max	C-Max	C-Max	C-Max	None	None	None	None
Act Effect Green (s)	71.2	72.2		58.9	58.9		10.9	11.1	11.1
Actuated g/C Ratio	0.79	0.80		0.65	0.65		0.12	0.12	0.12
v/c Ratio	0.41	0.40		0.45	0.17		0.17	0.52	0.24
Control Delay	6.7	4.0		9.5	1.8		2.5	47.1	2.7
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	6.7	4.0		9.5	1.8		2.5	47.1	2.7
LOS	A	A		A	A		A	D	A
Approach Delay		4.2		8.6			2.5		26.8
Approach LOS		A		A			A		C

## Intersection Summary

Cycle Length: 90  
 Actuated Cycle Length: 90  
 Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green  
 Natural Cycle: 45  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.52  
 Intersection Signal Delay: 7.1  
 Intersection Capacity Utilization 75.2%  
 Analysis Period (min) 15

























Intersection LOS: A  
 ICU Level of Service D

Splits and Phases: 4: Antelope Ridge Dr. & North Carefree



Timings  
5: Marksheffel & North Carefree

2040 Background Traffic  
PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	191	580	848	50	405	87	880	1273	75	138	926	199
Future Volume (vph)	191	580	848	50	405	87	880	1273	75	138	926	199
Turn Type	pm+pt	NA	Free	pm+pt	NA	Free	Prot	NA	Free	pm+pt	NA	Free
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		Free	8		Free			Free	6		Free
Detector Phase	7	4		3	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Minimum Split (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Total Split (s)	17.0	25.0		17.0	25.0		37.0	65.0		13.0	41.0	
Total Split (%)	14.2%	20.8%		14.2%	20.8%		30.8%	54.2%		10.8%	34.2%	
Yellow Time (s)	3.0	3.0		3.0	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	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	
Act Effect Green (s)	31.6	22.0	120.0	24.0	16.0	120.0	34.8	63.7	120.0	45.7	37.3	120.0
Actuated g/C Ratio	0.26	0.18	1.00	0.20	0.13	1.00	0.29	0.53	1.00	0.38	0.31	1.00
v/c Ratio	0.74	0.64	0.55	0.26	0.61	0.06	0.90	0.69	0.05	0.60	0.86	0.13
Control Delay	53.4	49.2	1.4	34.7	52.7	0.1	54.5	24.0	0.1	28.5	48.5	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	53.4	49.2	1.4	34.7	52.7	0.1	54.5	24.0	0.1	28.5	48.5	0.2
LOS	D	D	A	C	D	A	D	C	A	C	D	A
Approach Delay		24.6			42.6			35.2			38.7	
Approach LOS		C			D			D			D	

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

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

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.90

Intersection Signal Delay: 33.7

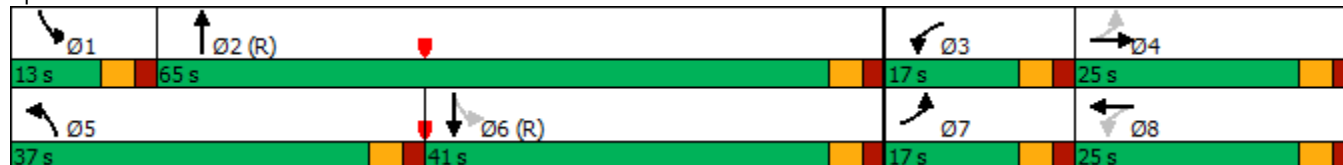
Intersection LOS: C

Intersection Capacity Utilization 85.8%






ICU Level of Service E

Analysis Period (min) 15

Splits and Phases: 5: Marksheffel & North Carefree





Intersection						
Int Delay, s/veh	1.3					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	6	21	44	253	107	4
Future Vol, veh/h	6	21	44	253	107	4
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	-	80	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	80	80	96	96
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	6	21	55	316	111	4
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	539	113	115	0	-	0
Stage 1	113	-	-	-	-	-
Stage 2	426	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	503	940	1474	-	-	-
Stage 1	912	-	-	-	-	-
Stage 2	659	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	484	940	1474	-	-	-
Mov Cap-2 Maneuver	484	-	-	-	-	-
Stage 1	878	-	-	-	-	-
Stage 2	659	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	9.8	1.1		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1474	-	777	-	-	
HCM Lane V/C Ratio	0.037	-	0.035	-	-	
HCM Control Delay (s)	7.5	-	9.8	-	-	
HCM Lane LOS	A	-	A	-	-	
HCM 95th %tile Q(veh)	0.1	-	0.1	-	-	

HCM 6th TWSC  
4: Antelope Ridge Dr. & North Carefree

2040 Total Traffic  
AM Peak Hour

Intersection												
Int Delay, s/veh	36.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰ ↑↑↑			↰ ↑↑↑		↰		↰		↰	↰	
Traffic Vol, veh/h	267	611	2	1	1371	143	1	0	1	302	0	382
Future Vol, veh/h	267	611	2	1	1371	143	1	0	1	302	0	382
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	350	-	-	-	-	-	-	-	-	350	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	80	95	80	78	95	78	50	50	50	74	74	74
Heavy Vehicles, %	1	2	2	2	2	1	2	2	2	1	2	1
Mvmt Flow	334	643	3	1	1443	183	2	0	2	408	0	516

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1626	0	0	646	0	0	1892	2941	323	2370	2759	722
Stage 1	-	-	-	-	-	-	1313	1313	-	1445	1445	-
Stage 2	-	-	-	-	-	-	579	1628	-	925	1314	-
Critical Hdwy	5.32	-	-	5.34	-	-	6.44	6.54	7.14	6.42	6.54	7.12
Critical Hdwy Stg 1	-	-	-	-	-	-	7.34	5.54	-	7.32	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.74	5.54	-	6.72	5.54	-
Follow-up Hdwy	3.11	-	-	3.12	-	-	3.82	4.02	3.92	3.81	4.02	3.91
Pot Cap-1 Maneuver	~ 195	-	-	578	-	-	74	15	574	~ 38	19	~ 319
Stage 1	-	-	-	-	-	-	120	226	-	~ 98	195	-
Stage 2	-	-	-	-	-	-	427	159	-	~ 264	226	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	~ 195	-	-	578	-	-	-	0	574	-	0	~ 319
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	0	-	-	0	-
Stage 1	-	-	-	-	-	-	120	0	-	~ 98	191	-
Stage 2	-	-	-	-	-	-	-	155	-	-	0	-

















Approach	EB	WB	NB	SB
HCM Control Delay, s	130.6	0.1		
HCM LOS			-	-

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	- ~ 195	-	-	-	578	-	-	-	319
HCM Lane V/C Ratio	- 1.712	-	-	-	0.002	-	-	-	1.618
HCM Control Delay (s)	- \$ 383.2	-	-	-	11.2	0.1	-	-	\$ 321.4
HCM Lane LOS	- F	-	-	-	B	A	-	-	F
HCM 95th %tile Q(veh)	- 22.8	-	-	-	0	-	-	-	30.9

Notes			
~: Volume exceeds capacity	\$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

# Timings 4: Antelope Ridge Dr. & North Carefree

2040 Total Traffic  
AM Peak Hour

									
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	267	611	1	1371	143	1	0	302	0
Future Volume (vph)	267	611	1	1371	143	1	0	302	0
Turn Type	pm+pt	NA	Perm	NA	Perm	Perm	NA	Perm	NA
Protected Phases	5	2		6			8		4
Permitted Phases	2		6		6	8		4	
Detector Phase	5	2	6	6	6	8	8	4	4
Switch Phase									
Minimum Initial (s)	4.0	10.0	10.0	10.0	10.0	5.0	5.0	5.0	5.0
Minimum Split (s)	11.0	15.0	15.0	15.0	15.0	10.0	10.0	10.0	10.0
Total Split (s)	24.0	55.0	31.0	31.0	31.0	45.0	45.0	45.0	45.0
Total Split (%)	24.0%	55.0%	31.0%	31.0%	31.0%	45.0%	45.0%	45.0%	45.0%
Yellow Time (s)	3.0	3.0	3.0	3.0	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
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0
Lead/Lag	Lead		Lag	Lag	Lag				
Lead-Lag Optimize?	Yes		Yes	Yes	Yes				
Recall Mode	None	C-Max	C-Max	C-Max	C-Max	None	None	None	None
Act Effect Green (s)	55.4	55.4		33.7	33.7		34.6	34.6	34.6
Actuated g/C Ratio	0.55	0.55		0.34	0.34		0.35	0.35	0.35
v/c Ratio	0.90	0.23		0.90	0.28		0.01	0.83	0.60
Control Delay	52.1	12.5		42.6	5.7		0.0	44.5	6.6
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	52.1	12.5		42.6	5.7		0.0	44.5	6.6
LOS	D	B		D	A		A	D	A
Approach Delay		26.0		38.5					23.3
Approach LOS		C		D					C

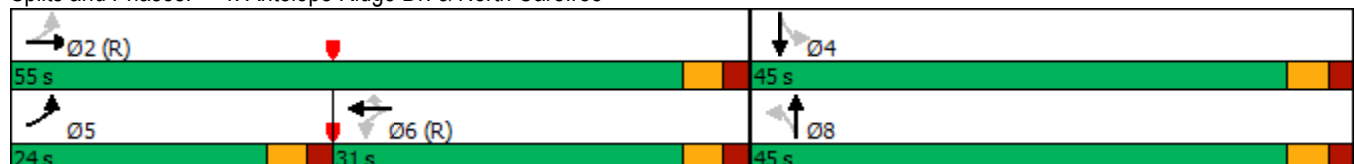
## Intersection Summary

Cycle Length: 100  
 Actuated Cycle Length: 100  
 Offset: 86 (86%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green  
 Natural Cycle: 75  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.90  
 Intersection Signal Delay: 31.0  
 Intersection Capacity Utilization 77.5%  
 Analysis Period (min) 15

Intersection LOS: C

























ICU Level of Service D

Splits and Phases: 4: Antelope Ridge Dr. & North Carefree



Timings  
5: Marksheffel & North Carefree

2040 Total Traffic  
AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	103	339	472	100	785	154	593	838	50	78	1435	136
Future Volume (vph)	103	339	472	100	785	154	593	838	50	78	1435	136
Turn Type	pm+pt	NA	Free	pm+pt	NA	Free	Prot	NA	Free	pm+pt	NA	Free
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		Free	8		Free			Free	6		Free
Detector Phase	7	4		3	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Minimum Split (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Total Split (s)	11.0	20.0		20.0	29.0		26.0	68.0		12.0	54.0	
Total Split (%)	9.2%	16.7%		16.7%	24.2%		21.7%	56.7%		10.0%	45.0%	
Yellow Time (s)	3.0	3.0		3.0	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	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	-2.0		0.0	-2.0	
Total Lost Time (s)	5.0	5.0		5.0	5.0		5.0	3.0		5.0	3.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	
Act Effect Green (s)	24.5	18.5	120.0	32.9	23.2	120.0	21.8	68.2	120.0	55.8	51.0	120.0
Actuated g/C Ratio	0.20	0.15	1.00	0.27	0.19	1.00	0.18	0.57	1.00	0.46	0.42	1.00
v/c Ratio	0.70	0.44	0.30	0.36	0.81	0.10	0.97	0.43	0.03	0.23	0.97	0.09
Control Delay	60.1	48.5	0.5	36.1	53.8	0.1	78.8	16.3	0.0	12.2	51.9	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	60.1	48.5	0.5	36.1	53.8	0.1	78.8	16.3	0.0	12.2	51.9	0.1
LOS	E	D	A	D	D	A	E	B	A	B	D	A
Approach Delay		25.0			44.2			40.8			45.7	
Approach LOS		C			D			D			D	

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

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

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.97

Intersection Signal Delay: 40.2

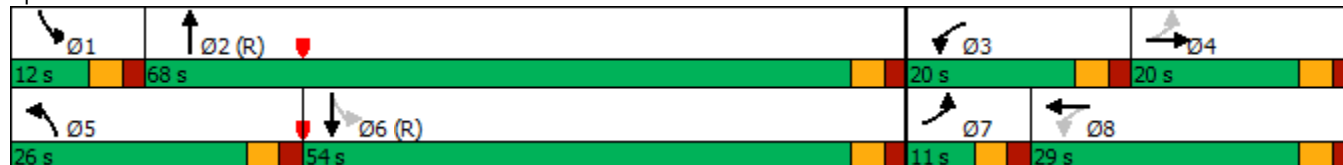
Intersection LOS: D







Intersection Capacity Utilization 93.3%

ICU Level of Service F

Analysis Period (min) 15





Splits and Phases: 5: Marksheffel & North Carefree



Intersection												
Int Delay, s/veh	1.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	6	0	54	22	0	12	14	385	11	2	609	4
Future Vol, veh/h	6	0	54	22	0	12	14	385	11	2	609	4
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	-	-	-	-	-	-	80	-	-	80	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	88	100	88	92	92	92	92	80	92	92	80	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	7	0	61	24	0	13	15	481	12	2	761	4
Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	1291	1290	763	1315	1286	487	765	0	0	493	0	0
Stage 1	767	767	-	517	517	-	-	-	-	-	-	-
Stage 2	524	523	-	798	769	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	140	163	404	135	164	581	848	-	-	1071	-	-
Stage 1	395	411	-	541	534	-	-	-	-	-	-	-
Stage 2	537	530	-	380	411	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	135	160	404	113	161	581	848	-	-	1071	-	-
Mov Cap-2 Maneuver	135	160	-	113	161	-	-	-	-	-	-	-
Stage 1	388	410	-	531	524	-	-	-	-	-	-	-
Stage 2	516	520	-	322	410	-	-	-	-	-	-	-
Approach	EB		WB		NB		SB					
HCM Control Delay, s	18.4		34.6		0.3		0					
HCM LOS	C		D									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR					
Capacity (veh/h)	848	-	-	337	158	1071	-	-				
HCM Lane V/C Ratio	0.018	-	-	0.202	0.234	0.002	-	-				
HCM Control Delay (s)	9.3	-	-	18.4	34.6	8.4	-	-				
HCM Lane LOS	A	-	-	C	D	A	-	-				
HCM 95th %tile Q(veh)	0.1	-	-	0.7	0.9	0	-	-				

HCM 6th TWSC  
25: Antelope Ridge Dr. & North Site Access

2040 Total Traffic  
AM Peak Hour

Intersection						
Int Delay, s/veh	1.9					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	53	26	382	20	5	562
Future Vol, veh/h	53	26	382	20	5	562
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	-	-	-	80	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	75	92	92	75
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	58	28	509	22	5	749
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	1279	520	0	0	531	0
Stage 1	520	-	-	-	-	-
Stage 2	759	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	183	556	-	-	1036	-
Stage 1	597	-	-	-	-	-
Stage 2	462	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	182	556	-	-	1036	-
Mov Cap-2 Maneuver	182	-	-	-	-	-
Stage 1	594	-	-	-	-	-
Stage 2	462	-	-	-	-	-
Approach	WB	NB	SB			
HCM Control Delay, s	29	0	0.1			
HCM LOS	D					
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT		
Capacity (veh/h)	-	-	234	1036	-	
HCM Lane V/C Ratio	-	-	0.367	0.005	-	
HCM Control Delay (s)	-	-	29	8.5	-	
HCM Lane LOS	-	-	D	A	-	
HCM 95th %tile Q(veh)	-	-	1.6	0	-	

HCM 6th TWSC  
4: Antelope Ridge Dr. & North Carefree

2040 Total Traffic  
3:00 - 4:00 PM

Intersection												
Int Delay, s/veh	353.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	176	530	2	0	1215	152	0	0	1	232	0	287
Future Vol, veh/h	176	530	2	0	1215	152	0	0	1	232	0	287
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	345	-	-	-	-	155	-	-	-	150	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	97	97	97	89	95	89	100	100	100	90	90	90
Heavy Vehicles, %	1	2	2	2	2	1	2	2	2	1	2	1
Mvmt Flow	181	546	2	0	1279	171	0	0	1	258	0	319

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1450	0	0	548	0	0	1421	2359	274	1859	2189	640
Stage 1	-	-	-	-	-	-	909	909	-	1279	1279	-
Stage 2	-	-	-	-	-	-	512	1450	-	580	910	-
Critical Hdwy	5.32	-	-	5.34	-	-	6.44	6.54	7.14	6.42	6.54	7.12
Critical Hdwy Stg 1	-	-	-	-	-	-	7.34	5.54	-	7.32	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.74	5.54	-	6.72	5.54	-
Follow-up Hdwy	3.11	-	-	3.12	-	-	3.82	4.02	3.92	3.81	4.02	3.91
Pot Cap-1 Maneuver	238	-	-	643	-	-	144	35	617	~ 79	45	360
Stage 1	-	-	-	-	-	-	230	352	-	~ 128	235	-
Stage 2	-	-	-	-	-	-	468	194	-	428	352	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	238	-	-	643	-	-	6	8	617	~ 30	11	360
Mov Cap-2 Maneuver	-	-	-	-	-	-	6	8	-	~ 30	11	-
Stage 1	-	-	-	-	-	-	55	84	-	~ 31	235	-
Stage 2	-	-	-	-	-	-	53	194	-	~ 102	84	-




















Approach	EB	WB	NB	SB
HCM Control Delay, s	14	0	10.8	\$ 1673.5
HCM LOS			B	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	617	238	-	-	643	-	-	30	360
HCM Lane V/C Ratio	0.002	0.762	-	-	-	-	-	8.593	0.886
HCM Control Delay (s)	10.8	56.4	-	-	0	-	-	\$ 3672.5	57.5
HCM Lane LOS	B	F	-	-	A	-	-	F	F
HCM 95th %tile Q(veh)	0	5.4	-	-	0	-	-	31.5	8.7

Notes			
~: Volume exceeds capacity	\$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

# Timings 4: Antelope Ridge Dr. & North Carefree

2040 Total Traffic  
3:00 - 4:00 PM

							
Lane Group	EBL	EBT	WBT	WBR	NBT	SBL	SBT
Lane Configurations		  	  		 		
Traffic Volume (vph)	176	530	1215	152	0	232	0
Future Volume (vph)	176	530	1215	152	0	232	0
Turn Type	pm+pt	NA	NA	Perm	NA	Perm	NA
Protected Phases	5	2	6		8		4
Permitted Phases	2			6		4	
Detector Phase	5	2	6	6	8	4	4
Switch Phase							
Minimum Initial (s)	5.0	10.0	10.0	10.0	5.0	5.0	5.0
Minimum Split (s)	10.0	15.0	15.0	15.0	10.0	10.0	10.0
Total Split (s)	10.0	60.0	50.0	50.0	30.0	30.0	30.0
Total Split (%)	11.1%	66.7%	55.6%	55.6%	33.3%	33.3%	33.3%
Yellow Time (s)	3.0	3.0	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
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead		Lag	Lag			
Lead-Lag Optimize?	Yes		Yes	Yes			
Recall Mode	None	C-Max	C-Max	C-Max	None	None	None
Act Effect Green (s)	59.2	59.2	47.6	47.6	20.8	20.8	20.8
Actuated g/C Ratio	0.66	0.66	0.53	0.53	0.23	0.23	0.23
v/c Ratio	0.62	0.16	0.48	0.18	0.00	0.79	0.67
Control Delay	18.6	6.6	14.6	2.5	0.0	49.2	23.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	18.6	6.6	14.6	2.5	0.0	49.2	23.9
LOS	B	A	B	A	A	D	C
Approach Delay		9.5	13.2				35.2
Approach LOS		A	B				D







## Intersection Summary

Cycle Length: 90
Actuated Cycle Length: 90
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 55
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.79
Intersection Signal Delay: 16.8
Intersection Capacity Utilization 65.8%
Analysis Period (min) 15
Intersection LOS: B
ICU Level of Service C

Splits and Phases: 4: Antelope Ridge Dr. & North Carefree









Intersection												
Int Delay, s/veh	1.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	2	0	24	14	0	6	35	274	19	4	480	8
Future Vol, veh/h	2	0	24	14	0	6	35	274	19	4	480	8
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	-	-	-	-	-	-	80	-	-	80	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	92	92	92	70	70	92	92	100	100
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	2	0	24	15	0	7	50	391	21	4	480	8
Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	997	1004	484	1006	998	402	488	0	0	412	0	0
Stage 1	492	492	-	502	502	-	-	-	-	-	-	-
Stage 2	505	512	-	504	496	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	223	242	583	220	244	648	1075	-	-	1147	-	-
Stage 1	558	548	-	552	542	-	-	-	-	-	-	-
Stage 2	549	536	-	550	545	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	212	230	583	203	232	648	1075	-	-	1147	-	-
Mov Cap-2 Maneuver	212	230	-	203	232	-	-	-	-	-	-	-
Stage 1	532	546	-	526	517	-	-	-	-	-	-	-
Stage 2	518	511	-	526	543	-	-	-	-	-	-	-
Approach	EB		WB		NB		SB					
HCM Control Delay, s	12.4		20.4		0.9		0.1					
HCM LOS	B		C									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR					
Capacity (veh/h)	1075	-	-	514	256	1147	-	-				
HCM Lane V/C Ratio	0.047	-	-	0.051	0.085	0.004	-	-				
HCM Control Delay (s)	8.5	-	-	12.4	20.4	8.2	-	-				
HCM Lane LOS	A	-	-	B	C	A	-	-				
HCM 95th %tile Q(veh)	0.1	-	-	0.2	0.3	0	-	-				

HCM 6th TWSC  
25: Antelope Ridge Dr. & North Site Access

2040 Total Traffic  
3:00 - 4:00 PM

Intersection						
Int Delay, s/veh	0.8					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	25	14	246	36	8	468
Future Vol, veh/h	25	14	246	36	8	468
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	-	-	-	80	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	70	92	92	100
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	27	15	351	39	9	468
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	857	371	0	0	390	0
Stage 1	371	-	-	-	-	-
Stage 2	486	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	328	675	-	-	1169	-
Stage 1	698	-	-	-	-	-
Stage 2	618	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	325	675	-	-	1169	-
Mov Cap-2 Maneuver	325	-	-	-	-	-
Stage 1	692	-	-	-	-	-
Stage 2	618	-	-	-	-	-
Approach	WB	NB	SB			
HCM Control Delay, s	15.1	0	0.1			
HCM LOS	C					
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT		
Capacity (veh/h)	-	-	399	1169	-	
HCM Lane V/C Ratio	-	-	0.106	0.007	-	
HCM Control Delay (s)	-	-	15.1	8.1	-	
HCM Lane LOS	-	-	C	A	-	
HCM 95th %tile Q(veh)	-	-	0.4	0	-	

HCM 6th TWSC  
4: Antelope Ridge Dr. & North Carefree

2040 Total Traffic  
PM Peak Hour

Intersection												
Int Delay, s/veh	597.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	167	1546	1	5	1305	234	12	0	3	92	0	84
Future Vol, veh/h	167	1546	1	5	1305	234	12	0	3	92	0	84
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	345	-	-	-	-	-	-	-	-	150	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	95	90	94	95	94	38	38	38	78	78	78
Heavy Vehicles, %	1	2	2	2	2	1	2	2	2	1	2	1
Mvmt Flow	186	1627	1	5	1374	249	32	0	8	118	0	108

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1623	0	0	1628	0	0	2560	3633	814	2407	3384	687
Stage 1	-	-	-	-	-	-	2000	2000	-	1384	1384	-
Stage 2	-	-	-	-	-	-	560	1633	-	1023	2000	-
Critical Hdwy	5.32	-	-	5.34	-	-	6.44	6.54	7.14	6.42	6.54	7.12
Critical Hdwy Stg 1	-	-	-	-	-	-	7.34	5.54	-	7.32	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.74	5.54	-	6.72	5.54	-
Follow-up Hdwy	3.11	-	-	3.12	-	-	3.82	4.02	3.92	3.81	4.02	3.91
Pot Cap-1 Maneuver	196	-	-	192	-	-	~ 28	5	276	~ 36	7	336
Stage 1	-	-	-	-	-	-	39	103	-	~ 108	209	-
Stage 2	-	-	-	-	-	-	438	158	-	229	103	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	196	-	-	192	-	-	~ 2	0	276	~ 4	0	336
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 2	0	-	~ 4	0	-
Stage 1	-	-	-	-	-	-	~ 2	5	-	~ 6	132	-
Stage 2	-	-	-	-	-	-	188	100	-	~ 11	5	-






















Approach	EB	WB	NB	SB
HCM Control Delay, s	10.3	2.5	\$ 11831.1	\$ 7639.9
HCM LOS			F	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	2	196	-	-	192	-	-	4	336
HCM Lane V/C Ratio	19.737	0.947	-	-	0.028	-	-	29.487	0.321
HCM Control Delay (s)	\$ 11831.1	100.6	-	-	24.3	2.9	\$ 14596.5	20.7	
HCM Lane LOS	F	F	-	-	C	A	-	F	C
HCM 95th %tile Q(veh)	6.8	7.7	-	-	0.1	-	-	16.9	1.4

Notes												
~: Volume exceeds capacity    \$: Delay exceeds 300s    +: Computation Not Defined    *: All major volume in platoon												

# Timings 4: Antelope Ridge Dr. & North Carefree

2040 Total Traffic  
PM Peak Hour

									
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations		  		  			 		
Traffic Volume (vph)	167	1546	5	1305	234	12	0	92	0
Future Volume (vph)	167	1546	5	1305	234	12	0	92	0
Turn Type	pm+pt	NA	Perm	NA	Perm	Perm	NA	Perm	NA
Protected Phases	5	2		6			8		4
Permitted Phases	2		6		6	8		4	
Detector Phase	5	2	6	6	6	8	8	4	4
Switch Phase									
Minimum Initial (s)	5.0	10.0	10.0	10.0	10.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.0	15.0	15.0	15.0	15.0	10.0	10.0	10.0	10.0
Total Split (s)	10.0	65.0	55.0	55.0	55.0	25.0	25.0	25.0	25.0
Total Split (%)	11.1%	72.2%	61.1%	61.1%	61.1%	27.8%	27.8%	27.8%	27.8%
Yellow Time (s)	3.0	3.0	3.0	3.0	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
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0
Lead/Lag	Lead		Lag	Lag	Lag				
Lead-Lag Optimize?	Yes		Yes	Yes	Yes				
Recall Mode	None	C-Max	C-Max	C-Max	C-Max	None	None	None	None
Act Effect Green (s)	67.0	67.0		54.1	54.1		13.0	13.0	13.0
Actuated g/C Ratio	0.74	0.74		0.60	0.60		0.14	0.14	0.14
v/c Ratio	0.57	0.43		0.49	0.23		0.15	0.60	0.31
Control Delay	12.5	5.2		11.5	1.9		2.1	47.7	6.2
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	12.5	5.2		11.5	1.9		2.1	47.7	6.2
LOS	B	A		B	A		A	D	A
Approach Delay		5.9		10.0			2.1		27.8
Approach LOS		A		B			A		C

## Intersection Summary

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green

Natural Cycle: 45

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.60

Intersection Signal Delay: 9.0

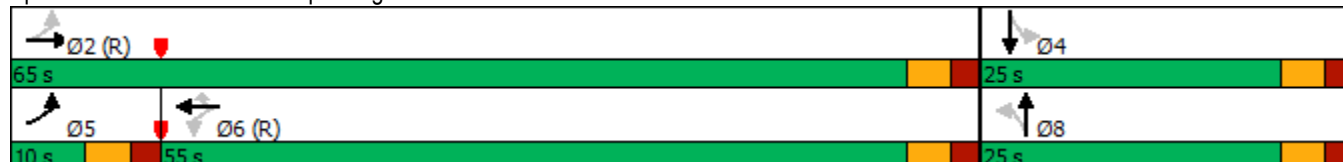
Intersection LOS: A

Intersection Capacity Utilization 75.2%

ICU Level of Service D
































Analysis Period (min) 15

Splits and Phases: 4: Antelope Ridge Dr. & North Carefree



Timings  
5: Marksheffel & North Carefree

2040 Total Traffic  
PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			  		 	 			 	
Traffic Volume (vph)	193	587	862	50	418	87	904	1273	75	138	926	222
Future Volume (vph)	193	587	862	50	418	87	904	1273	75	138	926	222
Turn Type	pm+pt	NA	Free	pm+pt	NA	Free	Prot	NA	Free	pm+pt	NA	Free
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		Free	8		Free			Free	6		Free
Detector Phase	7	4		3	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Minimum Split (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Total Split (s)	17.0	25.0		17.0	25.0		37.0	65.0		13.0	41.0	
Total Split (%)	14.2%	20.8%		14.2%	20.8%		30.8%	54.2%		10.8%	34.2%	
Yellow Time (s)	3.0	3.0		3.0	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	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	
Act Effect Green (s)	31.8	22.2	120.0	24.2	16.2	120.0	35.5	63.5	120.0	44.8	36.4	120.0
Actuated g/C Ratio	0.26	0.18	1.00	0.20	0.14	1.00	0.30	0.53	1.00	0.37	0.30	1.00
v/c Ratio	0.75	0.64	0.56	0.26	0.62	0.06	0.91	0.69	0.05	0.61	0.88	0.14
Control Delay	54.5	49.1	1.4	34.7	52.9	0.1	54.6	24.1	0.1	28.8	50.7	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	54.5	49.1	1.4	34.7	52.9	0.1	54.6	24.1	0.1	28.8	50.7	0.2
LOS	D	D	A	C	D	A	D	C	A	C	D	A
Approach Delay		24.7			43.0			35.5			39.6	
Approach LOS		C			D			D			D	

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

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

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.91

Intersection Signal Delay: 34.1

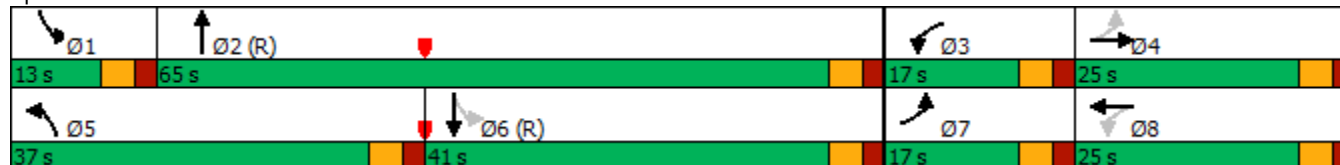
Intersection LOS: C

Intersection Capacity Utilization 86.8%

ICU Level of Service E

Analysis Period (min) 15

Splits and Phases: 5: Marksheffel & North Carefree



**Intersection**

Int Delay, s/veh 1.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↗	↖		↗	↖	
Traffic Vol, veh/h	6	0	21	18	0	8	44	321	36	8	138	4
Future Vol, veh/h	6	0	21	18	0	8	44	321	36	8	138	4
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	-	-	-	-	-	-	80	-	-	80	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	92	92	92	80	80	80	96	96	96
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	6	0	21	20	0	9	55	401	45	8	144	4





Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	700	718	146	707	698	424	148	0	0	446	0	0
Stage 1	162	162	-	534	534	-	-	-	-	-	-	-
Stage 2	538	556	-	173	164	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	354	355	901	350	364	630	1434	-	-	1114	-	-
Stage 1	840	764	-	530	524	-	-	-	-	-	-	-
Stage 2	527	513	-	829	762	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	337	339	901	330	348	630	1434	-	-	1114	-	-
Mov Cap-2 Maneuver	337	339	-	330	348	-	-	-	-	-	-	-
Stage 1	808	759	-	510	504	-	-	-	-	-	-	-
Stage 2	500	494	-	804	757	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	10.7		15		0.8		0.4	
HCM LOS	B		C					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1434	-	-	657 387	1114	-	-
HCM Lane V/C Ratio	0.038	-	-	0.041 0.073	0.007	-	-
HCM Control Delay (s)	7.6	-	-	10.7 15	8.3	-	-
HCM Lane LOS	A	-	-	B C	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.1 0.2	0	-	-

HCM 6th TWSC  
25: Antelope Ridge Dr. & North Site Access

2040 Total Traffic  
PM Peak Hour

Intersection						
Int Delay, s/veh	1.3					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	31	17	267	68	15	119
Future Vol, veh/h	31	17	267	68	15	119
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	-	-	-	80	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	80	92	92	96
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	34	18	334	74	16	124
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	527	371	0	0	408	0
Stage 1	371	-	-	-	-	-
Stage 2	156	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	512	675	-	-	1151	-
Stage 1	698	-	-	-	-	-
Stage 2	872	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	505	675	-	-	1151	-
Mov Cap-2 Maneuver	505	-	-	-	-	-
Stage 1	688	-	-	-	-	-
Stage 2	872	-	-	-	-	-
Approach	WB	NB	SB			
HCM Control Delay, s	12.2	0	1			
HCM LOS	B					
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT		
Capacity (veh/h)	-	-	554	1151	-	
HCM Lane V/C Ratio	-	-	0.094	0.014	-	
HCM Control Delay (s)	-	-	12.2	8.2	-	
HCM Lane LOS	-	-	B	A	-	
HCM 95th %tile Q(veh)	-	-	0.3	0	-	

# Queuing Reports

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## Queuing and Blocking Report

## Intersection: 4: Antelope Ridge Dr. &amp; North Carefree

Movement	EB	WB	WB	NB	SB	SB
Directions Served	L	LT	R	LTR	L	TR
Maximum Queue (ft)	130	4	32	28	335	433
Average Queue (ft)	50	0	4	3	159	148
95th Queue (ft)	104	3	19	16	348	433
Link Distance (ft)		256		140		499
Upstream Blk Time (%)						6
Queuing Penalty (veh)						43
Storage Bay Dist (ft)	345		155		330	
Storage Blk Time (%)					14	1
Queuing Penalty (veh)					81	2

Queuing and Blocking Report  
North Careree/Antelope Ridge TWSC

2040 Total Traffic  
AM Peak Hour

Intersection: 4: Antelope Ridge Dr. & North Carefree

Movement	EB	EB	WB	WB	NB	SB	SB
Directions Served	L	T	LT	R	LTR	L	TR
Maximum Queue (ft)	304	278	31	28	30	355	512
Average Queue (ft)	120	10	2	4	1	337	472
95th Queue (ft)	245	95	15	18	10	408	668
Link Distance (ft)		355	930	930	140		503
Upstream Blk Time (%)							78
Queuing Penalty (veh)							544
Storage Bay Dist (ft)	350					330	
Storage Blk Time (%)						91	
Queuing Penalty (veh)						352	

Queuing and Blocking Report  
North Carefree/Antelope Ridge Signal Control

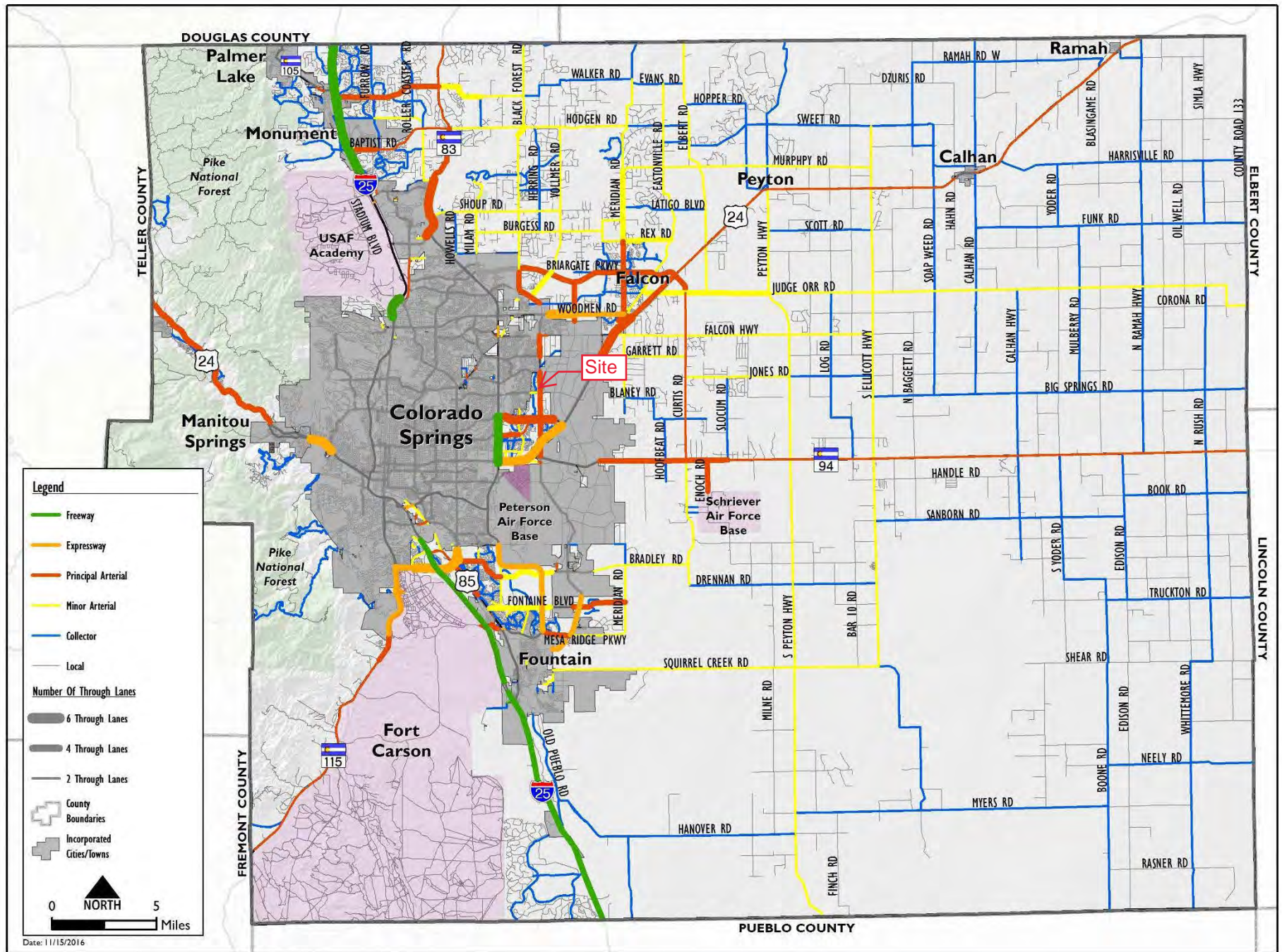
2040 Total Traffic  
AM Peak Hour

Intersection: 4: Antelope Ridge Dr. & North Carefree

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	SB	SB
Directions Served	L	T	T	TR	LT	T	T	R	LTR	L	TR
Maximum Queue (ft)	242	165	125	178	307	295	310	117	30	333	138
Average Queue (ft)	106	63	34	77	145	173	180	48	2	188	63
95th Queue (ft)	184	117	85	158	285	307	310	87	15	294	99
Link Distance (ft)		355	355	355	930	930	930	930	140		503
Upstream Blk Time (%)											
Queuing Penalty (veh)											
Storage Bay Dist (ft)	350									330	
Storage Blk Time (%)										0	
Queuing Penalty (veh)										0	

# MTCP Maps

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Map 14: 2040 Roadway Plan (Classification and Lanes)



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