

DOWNTOWN STADIUM

Parking & Traffic Evaluation

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I. INTRODUCTION

The Switchbacks FC Holdings Company is proposing to construct a new stadium in Downtown Colorado Springs. The Switchbacks Football Club (FC) currently plays home games at Weidner Field located in eastern Colorado Springs. In addition to hosting FC matches, the proposed new stadium facility would host community events and provide a physical therapy office and restaurant in support of the City of Colorado Springs' City for Champions initiative. The proposed stadium would be located on the southwest corner of Cimarron Street and Sahwatch Street. **Figure I** illustrates the location of the stadium relative to the adjacent roadway network.

This report provides the following:

- **Proposed Development:** A description of the proposed development, including individual uses within the site and use types
- **Parking Evaluation:** An evaluation of parking needs and supply associated with the proposed new stadium during events and day-to-day conditions
- **Traffic Evaluation:** An assessment of traffic flow conditions with and without estimated vehicle-trips to be added by FC matches

II. PROPOSED DEVELOPMENT

The proposed stadium supports the City of Colorado Springs' City for Champions initiative with the addition of an 145,000 square foot, 8,157-seat outdoor soccer stadium in Downtown Colorado Springs. The stadium also includes a 240-seat Sky Club (multi-use meeting/banquet room), a 3,950 square foot restaurant, and sports performance and training facilities.

A. Roadway Network

As shown on **Figure I**, the stadium site is bordered by Cimarron Street to the north, Moreno Avenue to the south, Sierra Madres Street to the west and Sahwatch Street to the east.

The proposed project would vacate Moreno Avenue and portions of the Sahwatch Street right-of-way to accommodate the stadium and create an expanded pedestrian plaza area.

B. Access

The primary stadium entrance would be located at the northeast corner (Cimarron Street/Sahwatch Street) with secondary entrances located along the Moreno Avenue pedestrian plaza.

C. Downtown Stadium Use Types

The Switchbacks would host approximately 22 home matches each year (averaging 2.5 games per month during the season). Switchbacks soccer matches are most likely to occur on Saturdays between March and October, beginning in the late afternoon or early evening. This analysis assumes a sold-out event with attendees arriving one-hour before the start and leaving during the hour following the match.

The stadium is also projected to host numerous small and large events. Three use scenarios have been selected for analysis in the study to represent a range of operating conditions:

1. Switchbacks FC Soccer Matches: Soccer matches would accommodate a crowd of up to 8,157
2. Daily use: Several on-site uses will see daily activity
3. Special Events: Large special events (up to roughly 4 per year) would attract up to 15,000

Table I summarizes the anticipated attendance levels associated with scenarios 1 and 2.

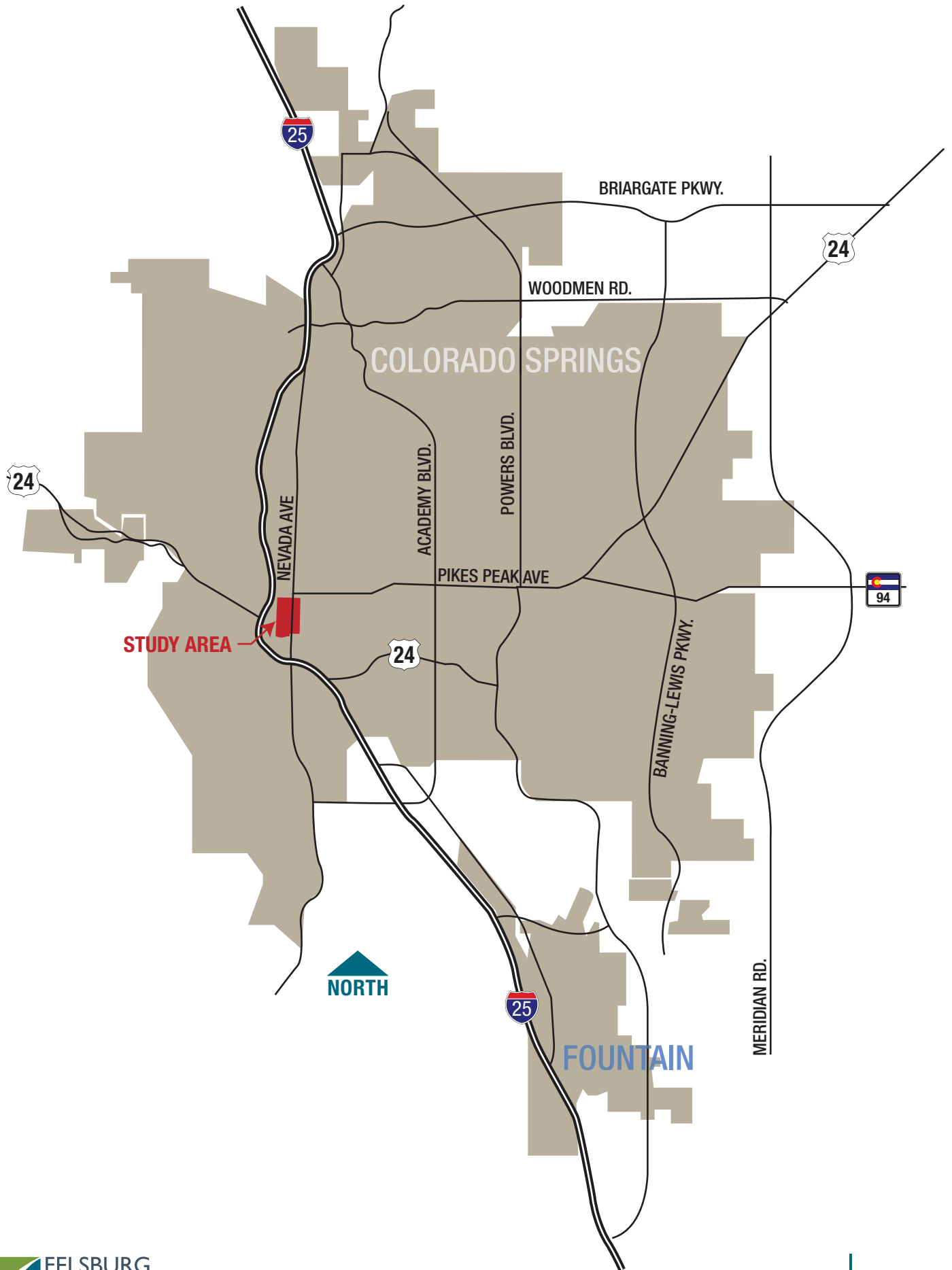


Table 1. Downtown Stadium Typical Programming

Event	#/yr	Estimated Attendance per	Capacity (Maximum Attendance)
League Matches	17	6,000	8,157
Non-League Matches	5	3,000	8,157
Concerts	4	10,000	15,000

*Note: Actual event scheduling may vary

III. PARKING EVALUATION

A. Parking Inventory – Existing Supply & Demand

A parking inventory was conducted from Colorado Avenue south to Fountain Boulevard and from Sierra Madre Street east to Weber Street to record available and occupied spaces on Saturdays during the late afternoon and early evening. **Figure 2** depicts the parking inventory evaluation area. This parking inventory was conducted as a tool to provide the project team with insight into the adequacy of current parking supply surrounding the stadium site to meet the demand expected to be generated by the proposed development. It is important to note that parking availability is dynamic, often changing from day to day with larger impacts associated with new development and/or parking management changes.

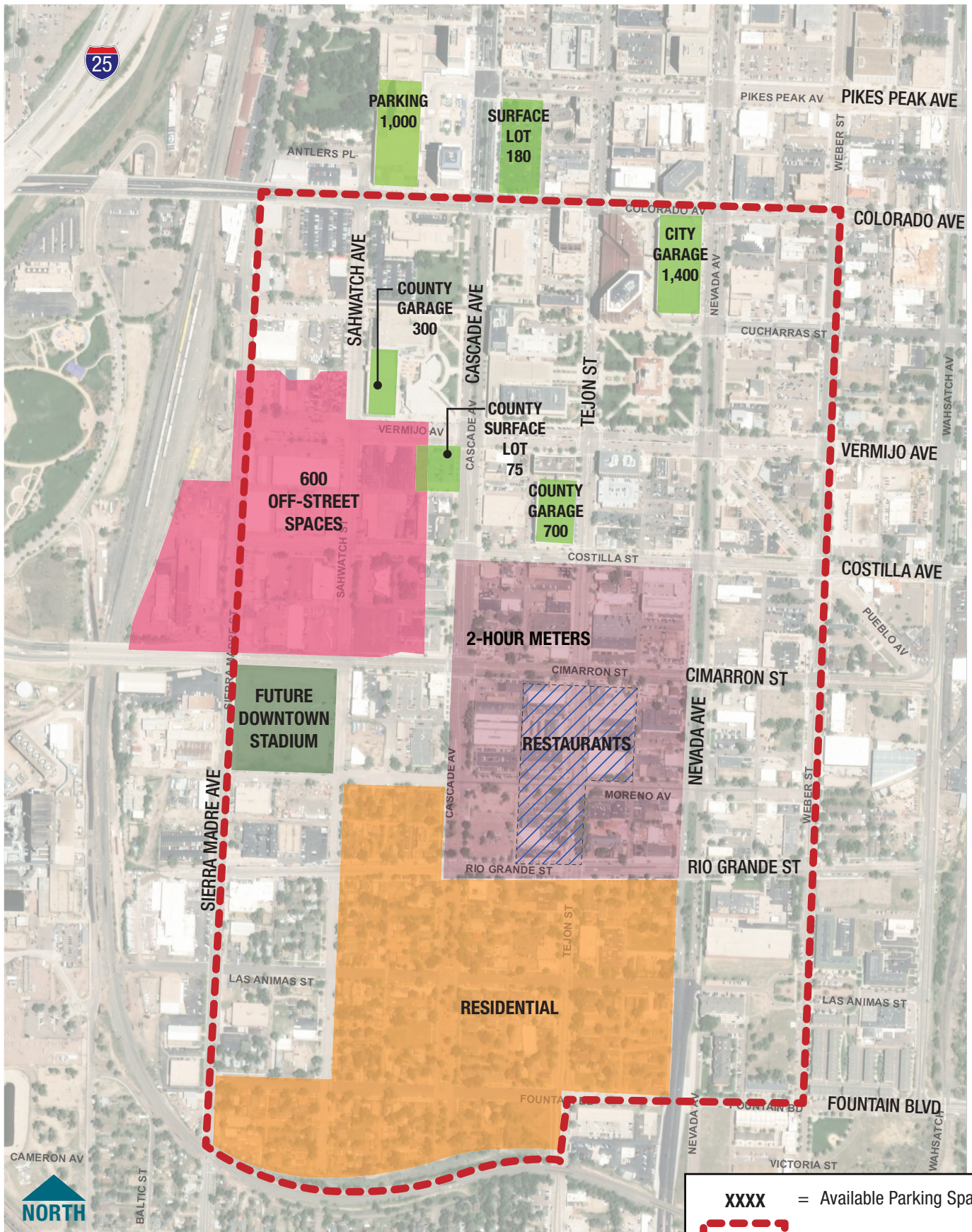
A walk shed analysis was used to identify the available public parking supply located within a 5-minute and 10-minute walking distance, or walkshed. A 10-minute walking distance is assumed to be the upper time limit match attendees would willingly walk. The walksheds are shown on Figure 3.

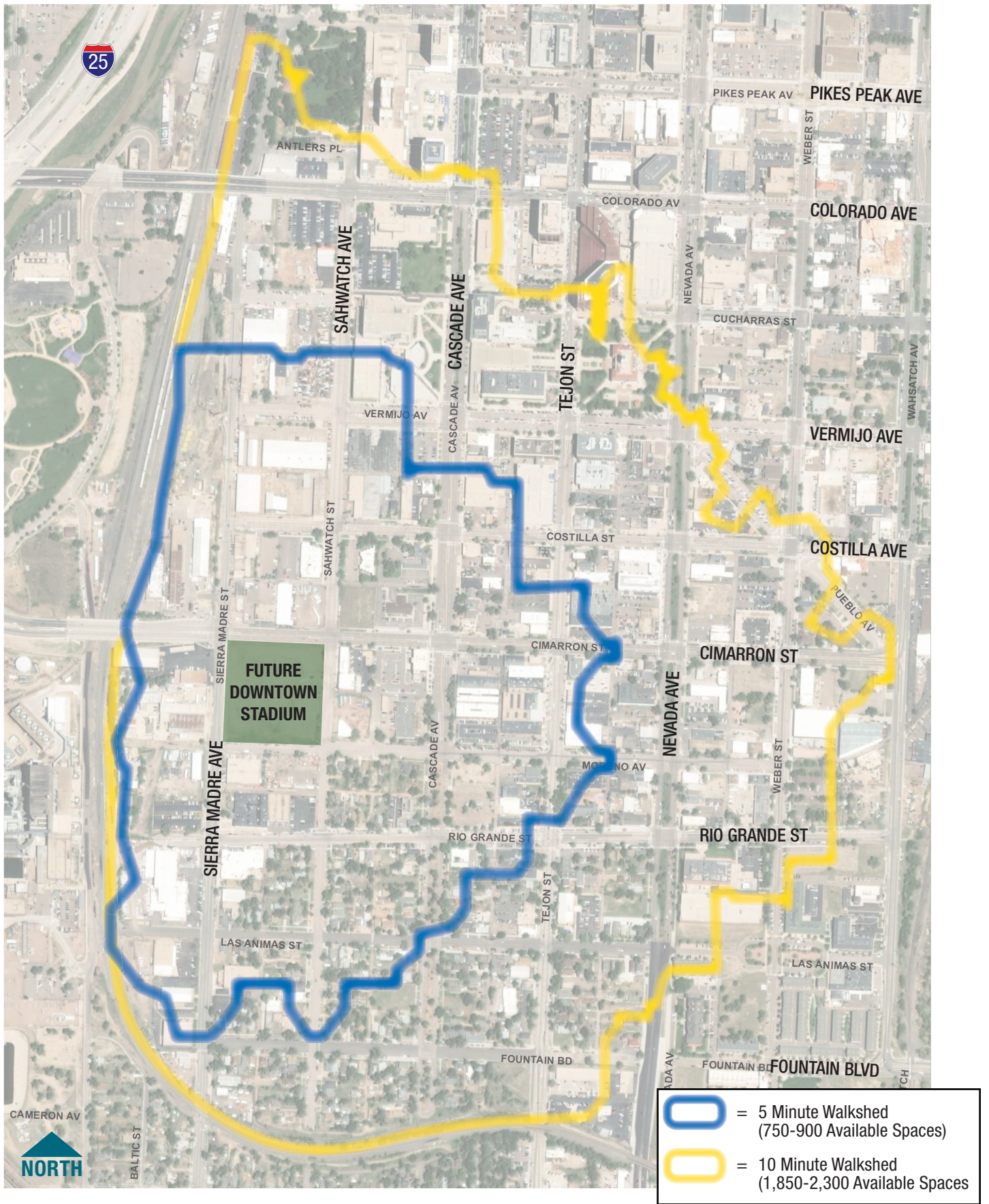
Within the 5-minute walkshed there are approximately 2,000 total parking spaces. The parking inventory indicated that approximately 1,350 of these spaces could be available for use by match attendees during Switchbacks matches. Of the 1,350 available spaces, 150 available spaces are in areas that currently have 2-hour parking restrictions or are in residential areas that could implement residential permitting restrictions. Therefore, in all there are approximately 1,200 – 1,350 available spaces within the 5-minute walkshed. There are approximately 4,000 total parking spaces in the 10-minute walkshed (includes spaces in the 5-minute walkshed). The parking observations and inventory indicate that approximately 2,750 of these spaces could be available for Switchbacks matches. The available spaces include approximately 450 spaces that currently have 2-hour parking restrictions or could be subject to residential parking restrictions. Therefore, the 10-minute walkshed could provide 2,300 – 2,750 parking spaces for Switchbacks matches.

The parking supply surrounding the proposed Downtown Stadium site includes a mixture of parking options such as county garages and surface lots, 2-hour metered parking, private garages, private parking lots, and on-street parking. Just outside the study area other parking supply sources including additional privately-operated public parking garages and surface parking lots. These include:

- The City Parking Garage at Colorado Avenue & Nevada Avenue– 1,400 available spaces
- Antler’s Plaza Parking Garage – 1,000 available spaces
- Privately Operated Public Parking Lot at Colorado Avenue & Cascade Avenue – 180 available spaces

These parking lots are on the edge of the 10-minute walkshed, the assumed upper limit for how long attendees would be willing to walk to/from the Downtown Stadium to a parking location; however, the available parking supply could help meet the parking demand for a sold-out Switchbacks match. Providing a shuttle service to/from these parking facilities on the fringes of the 10-minute walk shed would increase the viability of these locations as parking solutions. a shuttle system could be implemented as a





shared resource among downtown-area entities. It is anticipated that implementation of a shuttle system would be led by the City of Colorado Springs.

There are also private parking lots and facilities within the 5- and 10-minute walksheds that could provide special event parking options for the Downtown Stadium. For example, a collaborative effort between Nor'wood and Weidner Apartment Homes to meet the parking needs of both the new US Olympic and Paralympic Museum, and the Downtown Stadium resulting in an additional 600+ surface parking spots having been identified within the 5-minute walkshed of both venues. These 600+ spaces are incorporated into the parking supply quantities shown in Table 3.

It is our understanding that Weidner Apartment Homes will be revising its parking plan to include a significant number of additional spaces for Stadium use within their planned mixed-use development adjacent to the Stadium, potentially as a public/private partnership with the City of Colorado Springs' Parking Enterprise. The details of these additional spaces are unknown at this time and have not been included in this analysis.

The walksheds and number of available parking spaces are shown on Figure 4.

B. Switchbacks Sold-Out Match Parking Evaluation

There are many factors that impact parking demand for stadiums: stadium size, location, type of event, availability of transit, bicycle and pedestrian infrastructure, availability of parking, etc. As such, there currently are no standards for estimating parking demand for a stadium. This parking evaluation utilized a customized approach, examining the anticipated parking demand for a sold-out soccer match relative to the surrounding multimodal transportation infrastructure and available parking supply.

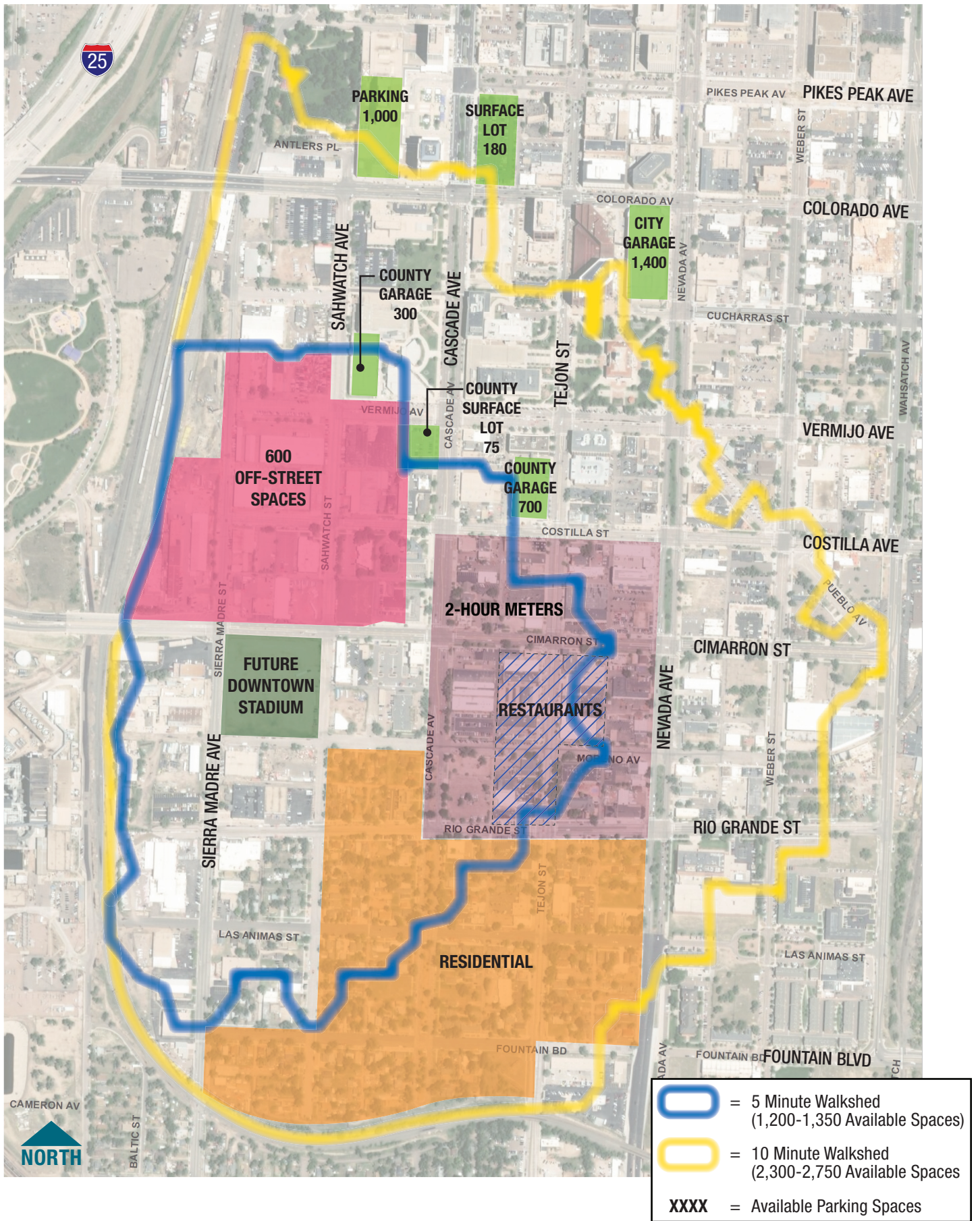
A 2012 research paper titled *Parking at Sporting Event Stadiums in Denver, Colorado* analyzed parking at Denver's four major sports facilities – Mile High Stadium, Coors Field, Pepsi Center and Dick's Sporting Goods Park. The study presented data on parking supply, parking use, auto occupancy, and mode share during sporting events at these facilities. The study also described the characteristics of the built environments around these venues (for example, location, transportation infrastructure, services, etc.). Based on these characteristics, the study assessed how the built environment can influence the decisions patrons make on how to travel to these venues.

The key variables that will impact parking demand for Switchbacks matches are auto mode share and average auto occupancy. Auto mode share reflects the percentage of attendees expected to travel to the stadium in a private vehicle. The research paper noted that the auto mode share at Denver locations varied by location:

- Coors Field – 58.2%
- Pepsi Center – 66.2%
- Mile High Stadium – 69.2%
- Dick's Sporting Goods Park – 97.2%

As expected, venue locations closer to Denver's Central Business District (CBD) had a lower auto mode share. The mode share at Dick's Sporting Goods Park (soccer) is higher because the stadium is in Commerce City, an area of low density, low land use diversity, and high auto dependency with a large parking supply.

Recommendation: Because the Switchbacks venue is in the CBD, a lower automobile mode share could be expected. The Downtown Stadium development will be complemented by the addition of new



high-density residential housing within easy biking and walking distance to the stadium. Additionally, Switchback matches are typically attended by young professionals (ages 18-34) who are more likely to live in the adjacent residential areas and travel to the game by alternatives modes (e.g. biking, walking or via ridesharing). The parking analysis has assumed a private automobile mode share of 85 percent. For those who arrive to the event by private automobile, auto occupancy is the number of patrons per automobile. In the study of Denver sports venues, the auto occupancy per venue is as follows:

- Coors Field – 2.4 people per automobile
- Pepsi Center – 2.2 people per automobile
- Mile High – 3.0 people per automobile
- Dick’s Sporting Goods Soccer Stadium – 2.8 people per automobile

The research paper identified availability of close, convenient parking and time of day/day of week as key factors impacting auto occupancy. The study found that limited close, convenient parking incentivized carpooling and late evening and weekend games provided opportunities arrange carpooling.

Recommendation: Assume an auto occupancy of 2.9 people per car given the limited available parking near the site, the family-oriented nature of soccer matches and ability of late evening, weekend games to provide carpooling opportunities.

There are two types of matches that will be hosted at the Downtown Stadium: (1) league matches and (2) non-league matches, which are expected to have an estimated attendance of 6,000 and 3,000 attendees per game, respectively. **Table 2** shows the anticipated parking demand for a sold-out Switchbacks match (8,157 attendees) using the previously noted assumptions.

Table 2. Downtown Stadium Parking Demand

	Parking Demand Assumptions
Attendance	8,157
Auto Mode Share	85%
Auto Occupancy	2.9
Parking Demand	2,390

The estimated parking demand generated by attendees of a sold-out Switchbacks match is approximately 2,390 spaces. This demand estimate does not include parking for match-day stadium employees and support personnel. Also, it is assumed that the on-site medical use will be closed during matches and restaurant patrons will be limited to people attending the match.

There are several parking supply combinations that can serve varying levels of attendance. The table below summarizes each parking supply scenario by number of spaces that would be provided and the associated total number of attendees that would be accommodated.

Table 3. Downtown Stadium Parking Scenarios

Scenario	Total Available Spaces	Total Attendees
5-min Walkshed (w/ Restrictions)	1,200	4,095
5-min Walkshed	1,350	4,605
10-min Walkshed (w/ Restrictions)	2,300	7,845
City/County Garages Only	2,470	8,430
10-min Walkshed	2,750	9,380
10-min Walkshed (w/ Restrictions & 1000 spaces in Antlers Garage)	3,300	11,260

As shown in **Table 3**, the currently available public parking in the 10-minute walkshed would accommodate game attendance ranging from approximately 7,800 to 9,400 attendees depending on the availability of residential parking and two-hour parking near the restaurants.

This evaluation assumes that parking restrictions will remove available supply in the residential Mill Avenue neighborhood and in the restaurant area. Therefore, to meet the demand for nearly 2,400 parking spaces it would be necessary to rely upon spaces available within the city and county lots on the northern edge of the 10-minute walkshed. The available supply in the five City/County garages/lots (shown on **Figure 4**) have the capacity to provide 2,470 spaces (serving approximately 8,430 attendees). As previously noted, providing match-day shuttle services to/from these parking facilities on the fringes of the 10-minute walk shed would increase the viability of these locations as parking solutions. A shuttle system could be implemented as a shared resource among downtown-area entities. It is anticipated that implementation of a shuttle system would be led by the City of Colorado Springs.

The project team does not plan to construct any on-site parking spaces with the stadium project. Therefore, accommodating a sold-out crowd will require reliance on available parking within existing supply. The inventory of available supply indicates that sufficient parking for event attendees is available but would require walking for more than ten minutes to reach a portion of the supply.

In view of these anticipated conditions, the following parking strategies should be considered:

- Use a shuttle system to transport attendees to/from parking spaces; a shuttle system could be implemented as a shared resource among downtown-area entities. It is anticipated that implementation of a shuttle system would be led by the City of Colorado Springs.
- Support amenities and infrastructure that support non-private automobile options (transit, pedestrian, bicycle, scooter, or mobility services such as Uber or Lyft) and reduce the impact on available parking and ensure the non-auto mode share attains a minimum of 15 percent (as shown in **Table 2**). Amenities and infrastructure options include bicycle parking, pedestrian walkways, mobility kiosks providing information regarding alternative modes, transit stops and connections near the site, and a designated pick-up/drop-off location for shared mobility service users.
- Provide information to attendees to help inform travel and parking plans (e.g. a map-based website or app that directs attendees to available parking spaces).
- Mobilize a match day team of Switchbacks FC staff to monitor parking conditions and help guide attendees to the stadium.
- Coordinate with private and public parking providers surrounding the site to ensure awareness of upcoming matches to identify and mitigate potential concerns.

C. Downtown Stadium Daily Use Parking Evaluation

The Downtown Stadium includes a restaurant and sports medicine offices that would be open year-round. Switchbacks players will be transported to weekday training via shuttles and the stadium is projected to have 15-20 staff on-site daily.

The estimated typical weekday parking demand for the restaurant and medical offices has been calculated based on the parking generation rates found in the *ITE Parking Generation Manual, 5th Edition (2019)*.

Typical weekday daily use parking demand calculations are summarized in **Table 4**.

Table 4. Downtown Stadium Typical Weekday Parking Demand

	ITE Code	Quantity	Parking Demand
Restaurant	932	200 Seats	55
Medical Office	630	2,500 SF	10
Stadium Staff	-	20 Employees	20
Parking Demand			85

The estimated maximum parking demand for typical weekday activity is 85 spaces. The existing parking supply/demand inventory did not include weekday conditions. The projected demand would represent approximately 5 percent of the 1600-space existing supply in the 5-minute walkshed.

D. Downtown Stadium – Special Event Parking

The Downtown Stadium will host up to four large special events annually. It is expected that these events could draw up to 15,000 attendees.

The special event parking demand has been calculated for a 15,000-person event with an assumed 80 percent of attendees arriving by vehicle with a 3.0 person per vehicle occupancy, assumptions developed in collaboration with City of Colorado Springs Staff. The special event parking demand calculations are summarized in **Table 5**.

Table 5. Downtown Stadium Special Event Parking Demand

	Parking Demand Assumptions
Attendance	15,000
Auto Mode Share	80%
Auto Occupancy	3.0
Parking Demand	4,000

These special events are projected to generate an estimated parking demand for 4,000 spaces and would require event specific parking management plans and have not been addressed in this evaluation. The unique nature of these events would likely be best served by customized parking management plans to meet the needs of each event.

E. ADA parking

The U.S. Department of Justice (DOJ) issued new regulations under the Americans with Disabilities Act (ADA) in 2010 that specify the new 2010 ADA Standards for Accessible Design and outlining minimum accessibility requirements for buildings and facilities. The regulations specify the minimum number of accessible parking spaces required relative to the total number of parking spaces in a lot.

Because the Downtown Stadium will be using the existing parking supply, there is no designated lot associated with the stadium. Nevertheless, providing enough ADA accessible parking and access to the stadium is essential. Total number of ADA accessible parking spaces has been calculated relative to the number of spaces that would be required if the Switchbacks parking demand were to be accommodated with a new parking lot. Based on demand for 2,400 spaces, the stadium should include 34 ADA accessible parking spaces.

Based on the maximum demand for typical weekday activity of 85 spaces, 4 spaces would be required to serve these land uses. Depending on the nature of the clientele at the Medical facilities, additional ADA

spaces may be required. To meet daily ADA parking requirements, a minimum of 4 ADA on-street parking spaces will be provided on Sahwatch Street and Sierra Madre Avenue; exact location to be determined.

The parking agreement between Nor'wood and Weidner Apartment Homes includes 190 spaces to be initially provided on Sahwatch Street directly north of Cimarron that would be used for initial daily stadium parking demand and ADA parking for special events.

Further evaluation is required to identify the ultimate location and means to guarantee the provision of ADA accessible parking for all stadium uses.

F. Potential Event Conflicts

Downtown Colorado Springs is a popular destination and parking supply is a fluid commodity. Conflicting events have the potential to generate competing parking demand. Public outreach efforts have indicated that there is the potential for conflict with other smaller scale events (e.g. weddings) and larger events such as those held at the Pikes Peak Center. The Pikes Peak Center is an existing facility located northwest of the Downtown Stadium. The Pikes Peak Center has the capacity to seat approximately 2,000 patrons and currently directs its visitors to park in the county garage on Sahwatch Avenue. The current known schedule events for the 2019 calendar year indicates the potential for conflicting events at the Pikes Peak Center occurring on the same day as approximately 50 percent of the Switchbacks home games or roughly 8-9 times per season.

It is estimated that a sold-out event at the Pikes Peak Center could increase the parking demand in the area by up to 1,000 spaces. The parking garages and lots on the edge of the Downtown Stadium 10-minute walkshed are within the 10-minute walkshed for the Pikes Peak Center and could help meet the additional parking demand.

Given the size of events at the Pikes Peak Center and the potential frequency of events occurring on game days, it is recommended that for nights when there are competing large events in the Downtown area, that the events coordinate to direct patrons to event specific parking. In future years, it may also be possible for the Downtown Stadium and Pikes Peak Center to coordinate the scheduling of larger events to minimize the likelihood of conflicts.

IV. TRAFFIC EVALUATION

A. Existing Traffic Conditions

Turning movement counts at select project area intersections were recorded between 5:30 PM - 6:00 PM and between 7:30 PM - 9:00 PM on a Saturday evening in February to coincide with the projected start and end times of a typical Switchbacks game. Traffic counts were recorded at the following intersections:

- Colorado Avenue / Sahwatch Street
- Colorado Avenue / Cascade Avenue
- Cimarron Street / I-25 Ramps
- Cimarron Street / Sierra Madre Street
- Cimarron Street / Sahwatch Street
- Cimarron Street / Cascade Avenue
- Cimarron Street / Tejon Street
- Cimarron Street / Nevada Avenue

Figure 5 shows traffic volumes, and **Appendix A** includes the count data.

Traffic operations within the study area were evaluated according to techniques documented in the *Highway Capacity Manual, 6th Edition*, and executed using Trafficware's Synchro 10 software. Operations were evaluated using the existing traffic volumes and intersection geometry. Level of Service (LOS) is a qualitative measure of traffic operational conditions based on roadway capacity and vehicle delay. LOS is described by a letter designation ranging from A to F, with LOS A representing almost free-flow travel, while LOS F represents congested conditions. For signalized intersections, LOS is reported as an average for the entire intersection. For stop-sign controlled intersections, LOS is calculated for each movement that must yield the right-of-way.

Figure 5 shows the results of the existing conditions analysis, including existing traffic control and current intersection geometry. As shown, all the signalized intersections currently operate at LOS C or better during both the study time periods. All the yielding turning movements at the study intersections operate at LOS C or better during both study periods.

Heavy movements at the I-25/Cimarron interchange include the southbound left-turn in the early PM and the westbound right during the late PM. Both movements are projected to operate at LOS C during the respective peak hours.

Appendix B includes capacity analysis worksheets for existing traffic conditions.

LEGEND

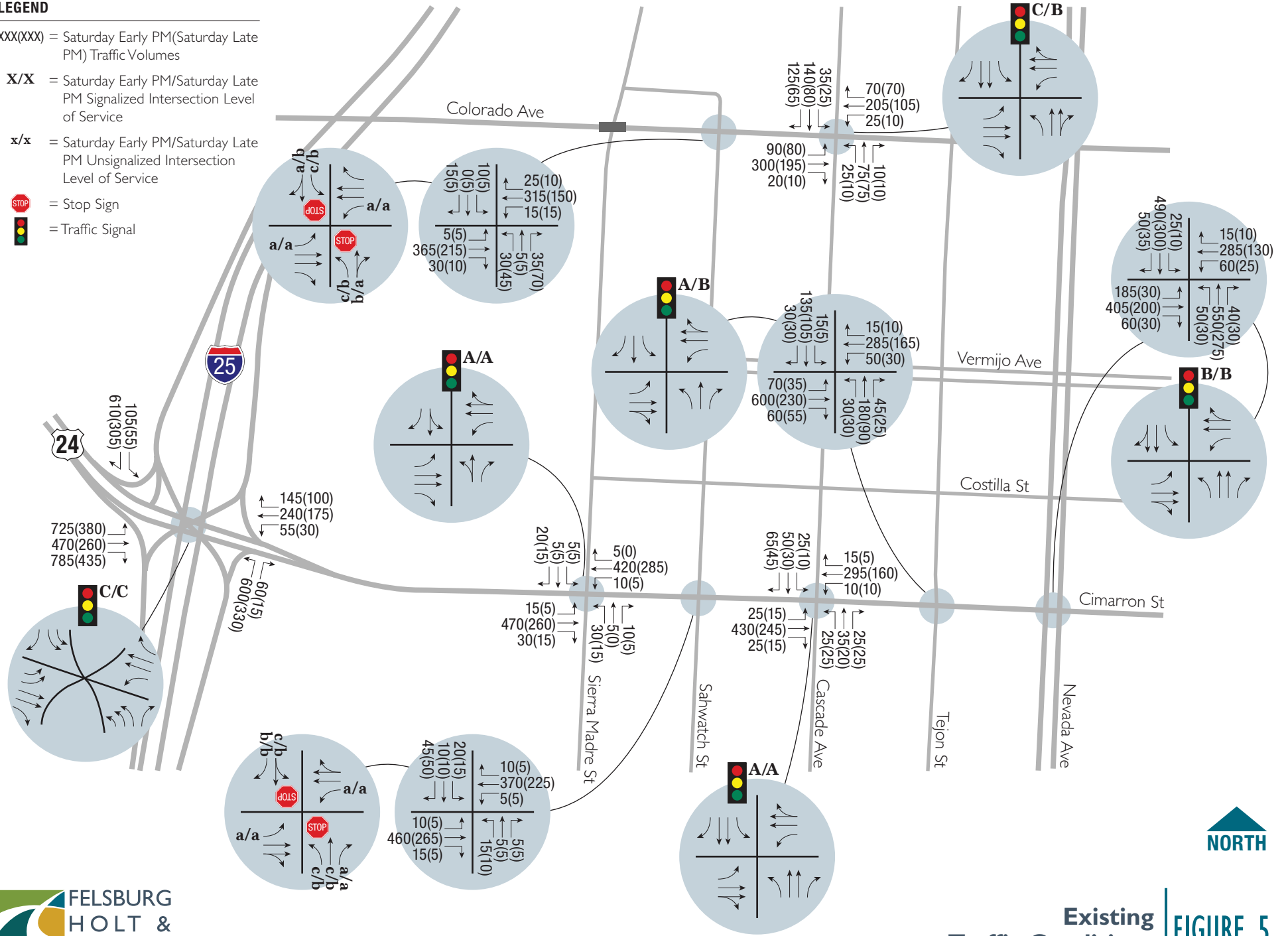
XXX(XXX) = Saturday Early PM(Saturday Late PM) Traffic Volumes

X/X = Saturday Early PM/Saturday Late PM Signalized Intersection Level of Service

x/x = Saturday Early PM/Saturday Late PM Unsignalized Intersection Level of Service

 = Stop Sign

 = Traffic Signal



B. Trip Generation & Distribution

A sold-out switchbacks match would draw 8,157 attendees generating a parking demand for approximately 2,400 parking spaces, resulting in 2,400 vehicles entering the area before and exiting the area after the match.

It is more likely that attendees, employees and players will arrive at the stadium during the one to two hours leading up to the match with match-specific traffic exiting the area being more concentration in the hours immediately following the match. To be conservative, the traffic analysis assumes that all parked cars arrive and depart in the one-hour period leading up to and immediately following the match. Stadium employees would likely generate additional parking demand that would likely occur well in advance of the arrival of attendees; the parking demand for employees has not been included in the traffic analyses.

The traffic analysis has assumed that parking near the restaurants will be restricted to two-hour parking and the Mill Street neighborhood would implement residential parking restrictions; the 10-minute walkshed would have an available capacity for 2,300 spaces. It has been assumed that the available parking within the 10-minute walkshed would be filled first. The remaining parking demand would be met by the three lots on the edge of the 10-minute walkshed.

An overall trip distribution was developed based on the surrounding roadway network. **Figure 6** provides the assumed trip distribution. As shown, the following distribution has been calculated:

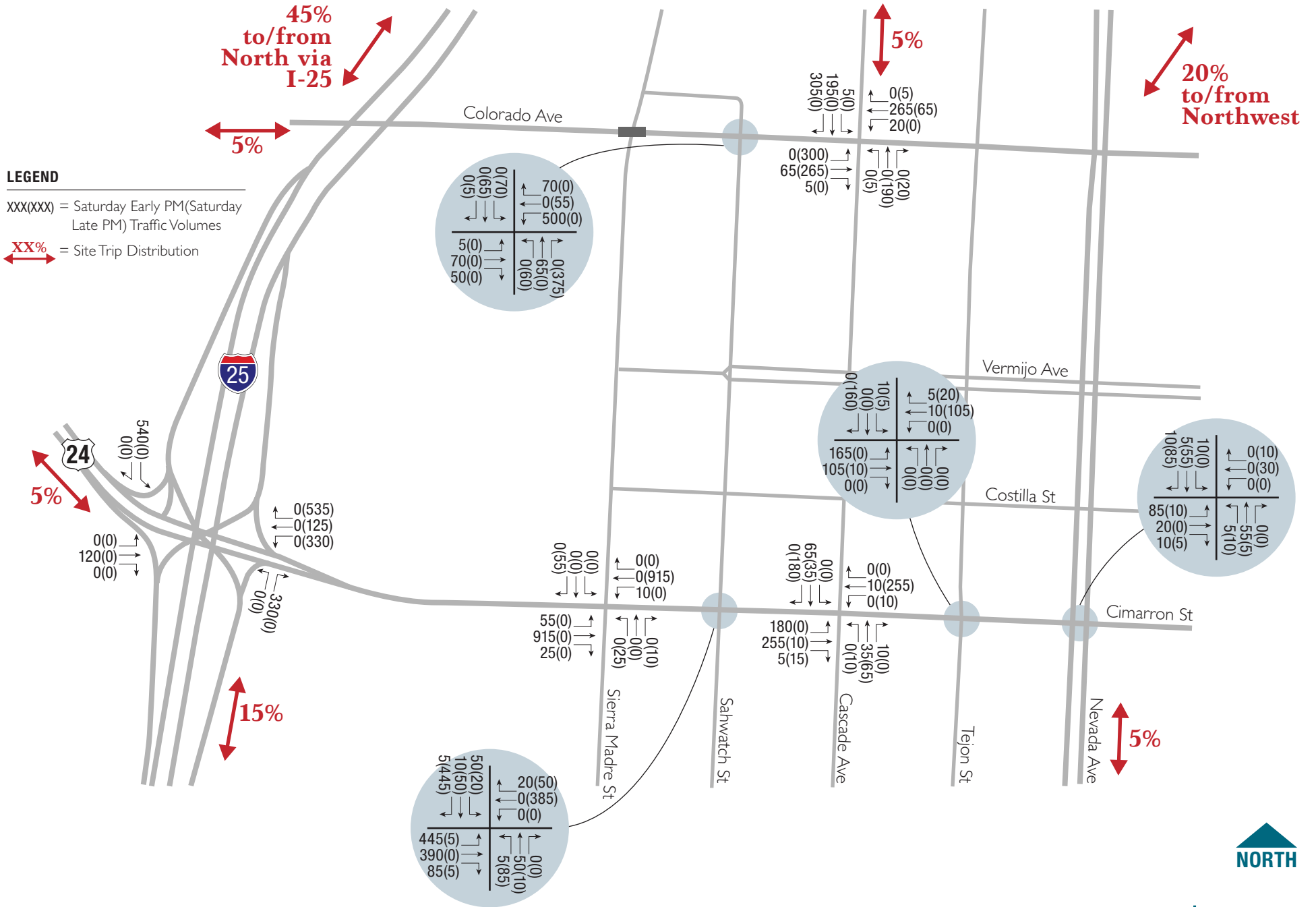
- 45% to/from the north via I-25. It is forecasted that many of these trips will use Bijou Street, but some will also use Cimarron Street to enter/exit the study area.
- 20% to/from the northeast. It is anticipated that these trips will use various roads to approach the study area, including Platte Avenue, Colorado Avenue, and Nevada Avenue.
- 15% to/from the south via I-25.
- 5% to/from the west via Colorado Avenue.
- 5% to/from the west via US 24 (Cimarron Street).
- 5% to/from the north via Cascade Avenue.
- 5% to/from the south via Nevada Avenue.

The above trip distribution and the assumed parking supply locations were used to assign trips associated with the stadium to the roadway network; as shown on **Figure 6**.

LEGEND

XXX(XXX) = Saturday Early PM(Saturday
Late PM) Traffic Volumes

XX% = Site Trip Distribution



C. Total Traffic Conditions

The existing traffic volumes on **Figure 5** were added to the trips generated by the proposed stadium on **Figure 6** to create the total traffic volumes shown on **Figure 7**. As shown, there is an increase in eastbound traffic on Cimarron Street during the early PM period. Likewise, there is a large increase in westbound traffic during the late PM period.

D. Total Traffic Operations

Signalization of the Colorado Avenue / Sahwatch Street intersection is anticipated in near future; the total traffic operations analysis includes signalization of this intersection. Similarly, as a result of the Downtown Stadium, a signal is also anticipated at the Cimarron Street / Sahwatch Street intersection. The signalized condition of the Cimarron Street / Sahwatch Street intersection has been evaluated with an exclusive left and shared thru/right lane configuration for the northbound and southbound approaches.

Figure 5 provides the resulting traffic operations during both study periods. As shown, all the signalized study intersections are forecasted to operate at a LOS C or better during both study periods, acceptable conditions.

Appendix C contains capacity analysis worksheets for short term future traffic conditions.

LEGEND

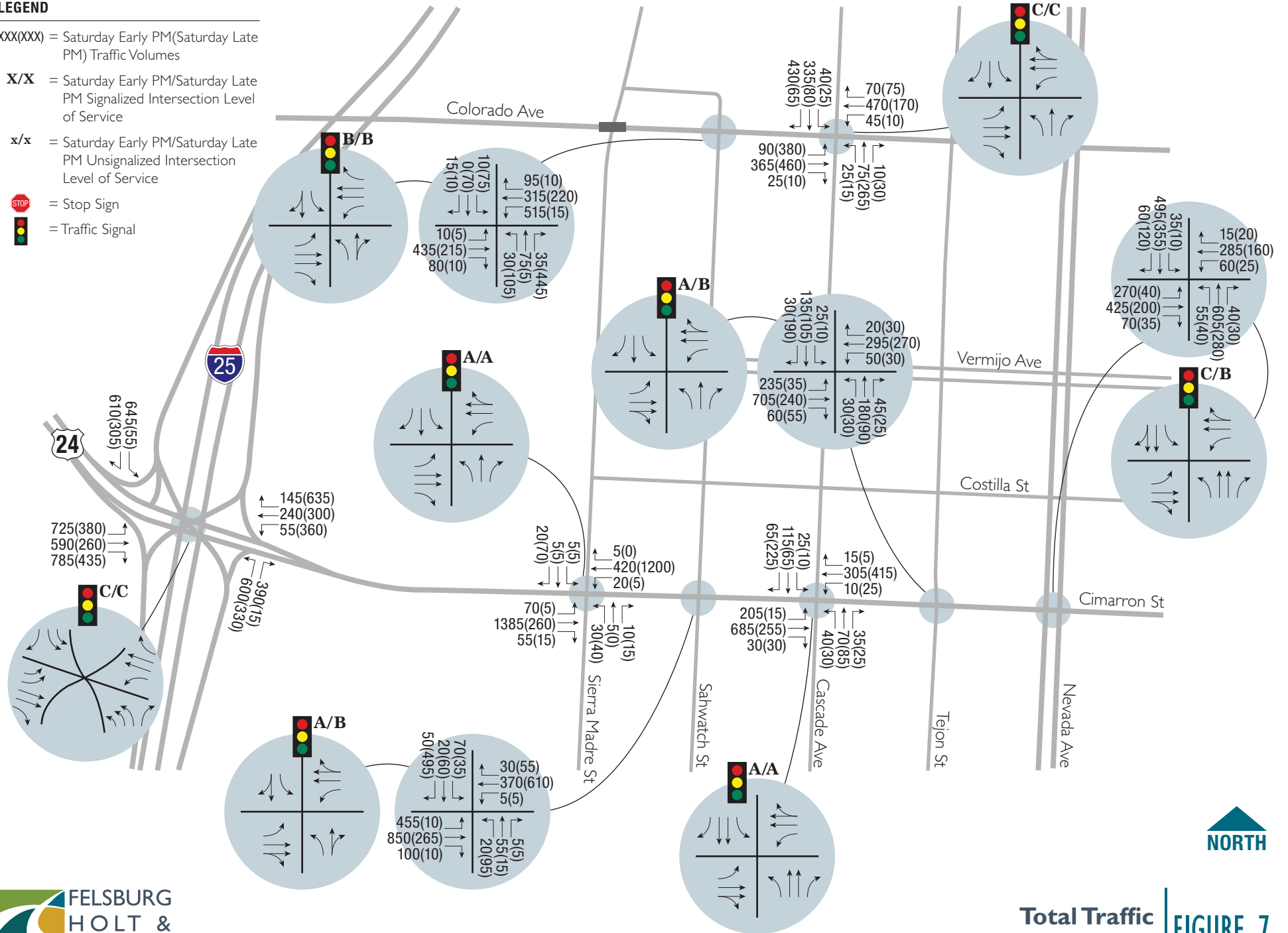
XXX(XXX) = Saturday Early PM(Saturday Late PM) Traffic Volumes

X/X = Saturday Early PM/Saturday Late PM Signalized Intersection Level of Service

x/x = Saturday Early PM/Saturday Late PM Unsignalized Intersection Level of Service

= Stop Sign

= Traffic Signal



Total Traffic Conditions | **FIGURE 7**

V. FINDINGS AND RECOMMENDATIONS

The proposed Downtown Stadium would be located on the southwest corner of Cimarron Street and Sahwatch Street and includes addition of an 145,000 square foot, 8,157-seat outdoor soccer stadium in Downtown Colorado Springs. The stadium will host up to 22 soccer matches annually (sold-out attendance of 8,157 attendees) and up to 4 large special events (e.g. concerts, festivals, etc.) that would attract up to 15,000 attendees. The stadium also includes a restaurant and sports medicine offices that would be open year-round. Attendees are anticipated to generate a parking demand and a trip generation of about 2,400 vehicles for an 8,157-person sold-out soccer match. Based on these numbers, the findings and recommendations of the parking and traffic analysis are as follows.

Parking & Traffic

- An estimated 2,300 of 4,000 parking spaces within the Downtown Stadium 10-minute walkshed will be available on a typical Saturday evening.
- Consider parking restrictions in the Mill Street neighborhood to prevent parking demand conflicts between stadium attendees and Mill Street Residents.
- Maintain the existing 2-hour meter restrictions near the restaurant area to preserve existing parking supply to serve restaurant patrons.
- Evaluate the use of a shuttle system to transport attendees to/from parking spaces; a shuttle system could be implemented as a shared resource among downtown-area entities. It is anticipated that implementation of a shuttle system would be led by the City of Colorado Springs.
- Evaluate options to define, reserve and guarantee the required 34 ADA accessible spaces.
- Support amenities and infrastructure that support non-private automobile options (transit, pedestrian, bicycle, scooter, or mobility services such as Uber or Lyft) and reduce the impact on available parking.
- Provide information to attendees to help inform travel and parking plans (e.g. a map-based website or app that directs attendees to available parking spaces).
- Mobilize a match day team of Switchbacks FC staff to monitor parking conditions and help guide attendees to the stadium.
- Coordinate with private and public parking providers and neighboring event venues to ensure awareness of upcoming matches to identify and mitigate potential concerns.
- Signalize the Cimarron Street/Sahwatch Street intersection with exclusive left and shared thru/right lane configurations on the northbound and southbound approaches.

A sold-out event at the stadium will increase traffic volumes along streets and at intersections in the southwest downtown area. The traffic operations analysis of this additional traffic did not show significant traffic operations impacts to major intersections in the study area.

There are several reasons for this finding:

- Late Saturday afternoon and evening traffic is lower than weekday peak traffic – the study area intersections and roadways have Saturday evening capacity to absorb additional traffic generated by the stadium.
- Second, the multiple ways to access the area from I-25 and other arterials spread the load of traffic among many intersections and roadways.
- Third, the newly constructed I-25 / Cimarron interchange has the capacity to accommodate stadium traffic.

APPENDIX A. TRAFFIC COUNTS



(303) 216-2439
www.alltrafficdata.net

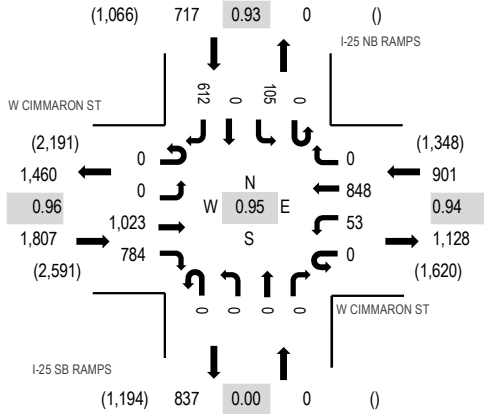
Location: 1 I-25 SB RAMPS & W CIMMARON ST PM

Date: Saturday, February 23, 2019

Peak Hour: 04:30 PM - 05:30 PM

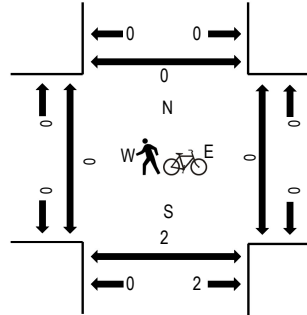
Peak 15-Minutes: 04:45 PM - 05:00 PM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles on Crosswalk



Traffic Counts

Interval Start Time	W CIMMARON ST Eastbound				W CIMMARON ST Westbound				I-25 SB RAMPS Northbound				I-25 NB RAMPS Southbound				Total	Rolling Hour	Pedestrian Crossings				
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North	
4:30 PM	0	0	261	195	0	14	186	0	0	0	0	0	0	0	18	0	135	809	3,425	0	0	0	0
4:45 PM	0	0	255	214	0	18	224	0	0	0	0	0	0	0	35	0	153	899	3,389	0	0	1	0
5:00 PM	0	0	262	188	0	16	216	0	0	0	0	0	0	0	24	0	157	863	3,297	0	0	0	0
5:15 PM	0	0	245	187	0	5	222	0	0	0	0	0	0	0	28	0	167	854		0	0	1	0
5:30 PM	1	0	211	184	0	7	205	0	0	0	0	0	0	0	22	0	143	773		0	0	0	0
5:45 PM	0	0	231	157	0	9	226	0	0	0	0	0	0	0	28	0	156	807		0	0	0	0
Count Total	1	0	1,465	1,125	0	69	1,279	0	0	0	0	0	0	0	155	0	911	5,005		0	0	2	0
Peak Hour	0	0	1,023	784	0	53	848	0	0	0	0	0	0	0	105	0	612	3,425		0	0	2	0



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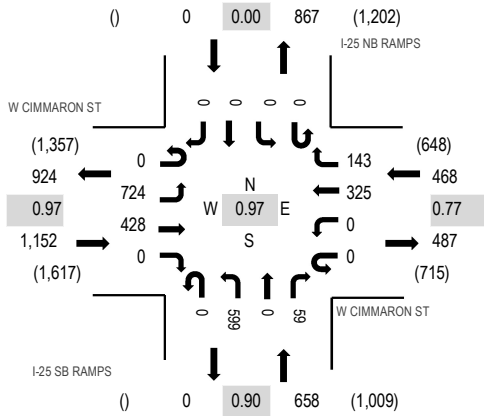
Location: 2 I-25 SB RAMPS & W CIMMARON ST PM

Date: Saturday, February 23, 2019

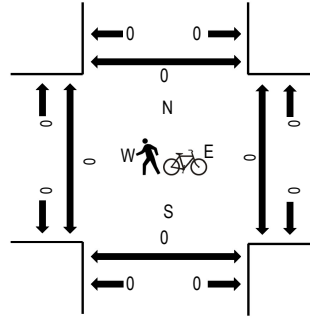
Peak Hour: 04:30 PM - 05:30 PM

Peak 15-Minutes: 05:00 PM - 05:15 PM

Peak Hour - All Vehicles



Peak Hour - Pedestrians/Bicycles on Crosswalk



Note: Total study counts contained in parentheses.

Traffic Counts

Interval Start Time	W CIMMARON ST Eastbound				W CIMMARON ST Westbound				I-25 SB RAMPS Northbound				I-25 NB RAMPS Southbound				Total	Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
4:30 PM	0	183	98	0	0	0	70	36	0	140	0	10	0	0	0	0	537	2,278	0	0	0	0
4:45 PM	0	176	107	0	0	0	88	38	0	157	0	18	0	0	0	0	584	2,212	0	0	0	0
5:00 PM	0	172	120	0	0	0	108	43	0	125	0	17	0	0	0	0	585	2,153	0	0	0	0
5:15 PM	0	193	103	0	0	0	59	26	0	177	0	14	0	0	0	0	572		0	0	0	0
5:30 PM	1	119	94	0	0	0	62	33	0	142	0	20	0	0	0	0	471		0	0	0	0
5:45 PM	0	151	100	0	0	0	53	32	0	175	0	14	0	0	0	0	525		0	0	0	0
Count Total	1	994	622	0	0	0	440	208	0	916	0	93	0	0	0	0	3,274		0	0	0	0
Peak Hour	0	724	428	0	0	0	325	143	0	599	0	59	0	0	0	0	2,278		0	0	0	0



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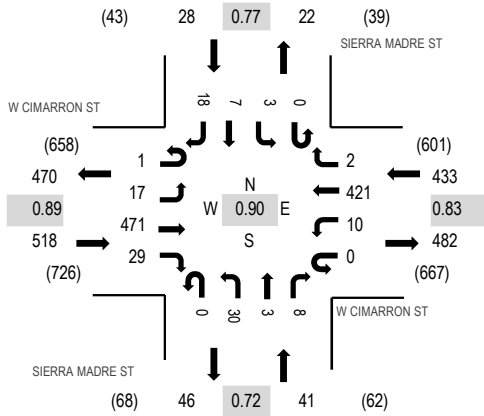
Location: 3 SIERRA MADRE ST & W CIMARRON ST PM

Date: Saturday, February 23, 2019

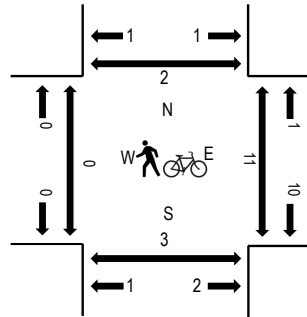
Peak Hour: 04:30 PM - 05:30 PM

Peak 15-Minutes: 04:45 PM - 05:00 PM

Peak Hour - All Vehicles



Peak Hour - Pedestrians/Bicycles on Crosswalk



Note: Total study counts contained in parentheses.

Traffic Counts

Interval Start Time	W CIMARRON ST Eastbound				W CIMARRON ST Westbound				SIERRA MADRE ST Northbound				SIERRA MADRE ST Southbound				Total	Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
4:30 PM	0	3	108	2	0	3	100	0	0	7	0	6	0	0	3	6	238	1,020	0	2	0	0
4:45 PM	1	6	126	13	0	0	131	0	0	5	1	1	0	0	0	0	284	986	0	3	1	0
5:00 PM	0	4	132	5	0	5	116	1	0	6	1	1	0	0	2	6	279	910	0	3	1	0
5:15 PM	0	4	105	9	0	2	74	1	0	12	1	0	0	3	2	6	219		0	3	1	1
5:30 PM	1	9	89	5	0	2	78	0	0	10	4	1	0	0	4	1	204		0	3	0	0
5:45 PM	0	2	93	9	0	0	86	2	0	6	0	0	0	2	2	6	208		0	0	0	0
Count Total	2	28	653	43	0	12	585	4	0	46	7	9	0	5	13	25	1,432		0	14	3	1
Peak Hour	1	17	471	29	0	10	421	2	0	30	3	8	0	3	7	18	1,020		0	11	3	1



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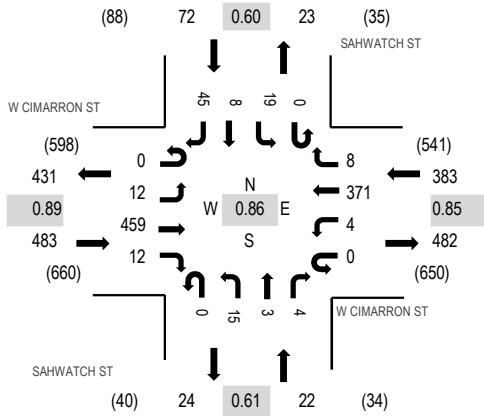
Location: 4 SAHWATCH ST & W CIMARRON ST PM

Date: Saturday, February 23, 2019

Peak Hour: 04:30 PM - 05:30 PM

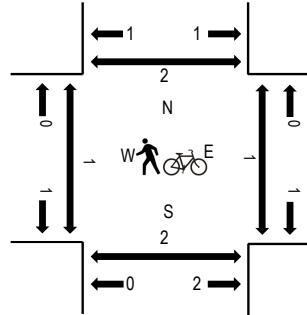
Peak 15-Minutes: 04:45 PM - 05:00 PM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles on Crosswalk



Traffic Counts

Interval Start Time	W CIMARRON ST Eastbound				W CIMARRON ST Westbound				SAHWATCH ST Northbound				SAHWATCH ST Southbound				Total	Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
4:30 PM	0	2	108	2	0	0	89	3	0	5	0	1	0	4	1	6	221	960	1	1	0	0
4:45 PM	0	3	125	3	0	1	109	3	0	5	1	0	0	8	2	20	280	914	0	0	1	0
5:00 PM	0	4	127	4	0	1	99	1	0	4	1	2	0	4	4	17	268	822	0	0	1	0
5:15 PM	0	3	99	3	0	2	74	1	0	1	1	1	0	3	1	2	191		0	0	0	1
5:30 PM	1	4	83	3	0	1	72	2	0	2	0	1	0	1	2	3	175		0	0	0	1
5:45 PM	0	1	82	3	0	2	79	2	0	5	3	1	0	0	5	5	188		0	0	0	0
Count Total	1	17	624	18	0	7	522	12	0	22	6	6	0	20	15	53	1,323		1	1	2	2
Peak Hour	0	12	459	12	0	4	371	8	0	15	3	4	0	19	8	45	960		1	1	2	1



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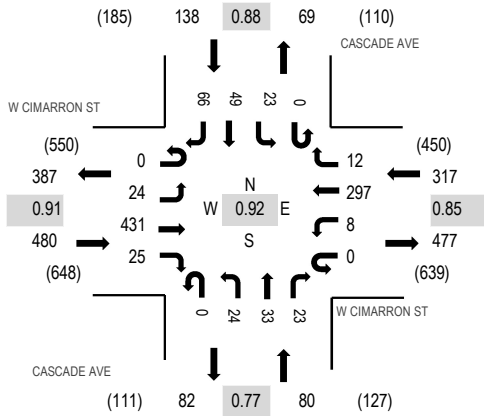
Location: 5 CASCADE AVE & W CIMARRON ST PM

Date: Saturday, February 23, 2019

Peak Hour: 04:30 PM - 05:30 PM

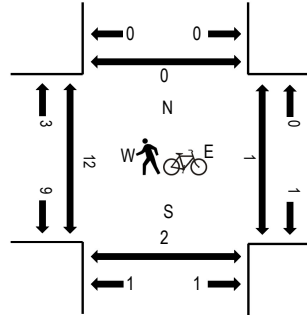
Peak 15-Minutes: 04:45 PM - 05:00 PM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles on Crosswalk



Traffic Counts

Interval Start Time	W CIMARRON ST Eastbound				W CIMARRON ST Westbound				CASCADE AVE Northbound			CASCADE AVE Southbound				Total	Rolling Hour	Pedestrian Crossings				
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru			Right	West	East	South	North
4:30 PM	0	6	103	5	0	3	75	1	0	3	10	5	0	5	14	16	246	1,015	5	0	0	0
4:45 PM	0	4	121	7	0	4	87	2	0	9	7	3	0	5	9	18	276	963	1	0	1	0
5:00 PM	0	7	116	9	0	1	75	4	0	8	9	3	0	8	14	17	271	888	1	1	0	0
5:15 PM	0	7	91	4	0	0	60	5	0	4	7	12	0	5	12	15	222		4	0	0	0
5:30 PM	0	6	72	5	0	1	54	2	0	9	11	10	0	3	7	14	194		1	0	0	0
5:45 PM	0	9	72	4	0	3	69	4	0	6	9	2	0	3	9	11	201		4	0	0	0
Count Total	0	39	575	34	0	12	420	18	0	39	53	35	0	29	65	91	1,410		16	1	1	0
Peak Hour	0	24	431	25	0	8	297	12	0	24	33	23	0	23	49	66	1,015		11	1	1	0



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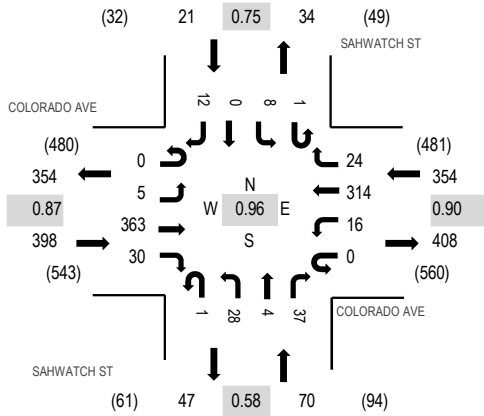
Location: 6 SAHWATCH ST & COLORADO AVE PM

Date: Saturday, February 23, 2019

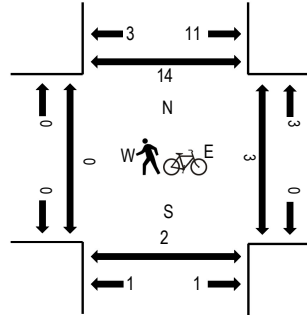
Peak Hour: 04:30 PM - 05:30 PM

Peak 15-Minutes: 04:30 PM - 04:45 PM

Peak Hour - All Vehicles



Peak Hour - Pedestrians/Bicycles on Crosswalk



Note: Total study counts contained in parentheses.

Traffic Counts

Interval Start Time	COLORADO AVE Eastbound				COLORADO AVE Westbound				SAHWATCH ST Northbound			SAHWATCH ST Southbound				Total	Rolling Hour	Pedestrian Crossings				
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru			Right	West	East	South	North
4:30 PM	0	3	86	9	0	2	87	9	0	5	1	11	1	4	0	2	220	843	0	1	1	1
4:45 PM	0	0	79	6	0	3	82	11	0	16	2	12	0	2	0	4	217	784	0	0	1	3
5:00 PM	0	1	103	10	0	6	69	2	0	6	1	7	0	1	0	3	209	713	0	2	0	5
5:15 PM	0	1	95	5	0	5	76	2	1	1	0	7	0	1	0	3	197		0	0	0	3
5:30 PM	0	4	71	4	0	4	56	3	0	6	0	6	0	2	0	5	161		0	0	1	2
5:45 PM	0	2	61	3	0	3	55	6	0	4	0	8	0	4	0	0	146		1	0	0	0
Count Total	0	11	495	37	0	23	425	33	1	38	4	51	1	14	0	17	1,150		1	3	3	14
Peak Hour	0	5	363	30	0	16	314	24	1	28	4	37	1	8	0	12	843		0	3	2	12



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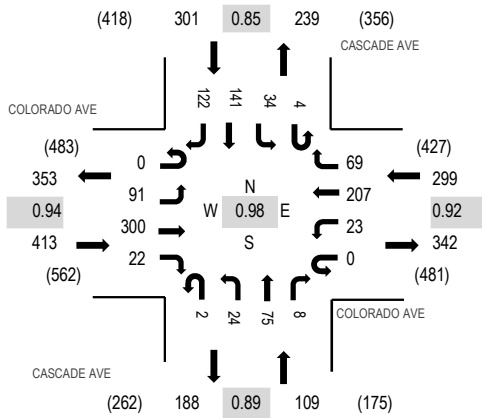
Location: 7 CASCADE AVE & COLORADO AVE PM

Date: Saturday, February 23, 2019

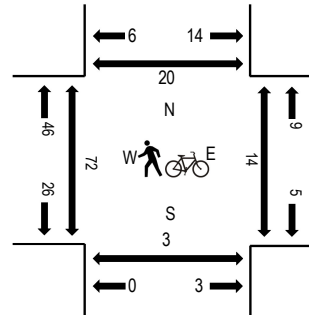
Peak Hour: 04:30 PM - 05:30 PM

Peak 15-Minutes: 04:30 PM - 04:45 PM

Peak Hour - All Vehicles



Peak Hour - Pedestrians/Bicycles on Crosswalk



Note: Total study counts contained in parentheses.

Traffic Counts

Interval Start Time	COLORADO AVE Eastbound				COLORADO AVE Westbound				CASCADE AVE Northbound				CASCADE AVE Southbound				Total	Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
4:30 PM	0	18	82	6	0	1	56	12	0	6	15	1	2	9	43	35	286	1,122	10	0	1	3
4:45 PM	0	24	64	5	0	10	55	13	1	9	19	3	2	9	40	32	286	1,063	23	3	0	4
5:00 PM	0	26	79	5	0	6	50	15	1	4	19	4	0	8	40	26	283	1,010	21	1	0	5
5:15 PM	0	23	75	6	0	6	46	29	0	5	22	0	0	8	18	29	267		18	10	2	8
5:30 PM	0	16	62	3	0	4	39	21	2	6	19	5	1	9	23	17	227		17	3	3	7
5:45 PM	0	13	52	3	0	9	30	25	0	8	21	5	1	6	30	30	233		14	8	11	2
Count Total	0	120	414	28	0	36	276	115	4	38	115	18	6	49	194	169	1,582		103	25	17	29
Peak Hour	0	91	300	22	0	23	207	69	2	24	75	8	4	34	141	122	1,122		72	14	3	20



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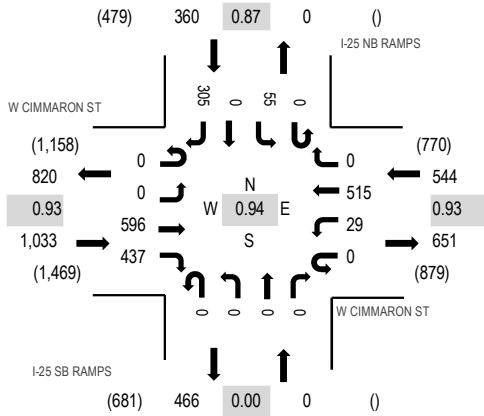
Location: 1 I-25 SB RAMPS & W CIMMARON ST PM

Date: Saturday, February 23, 2019

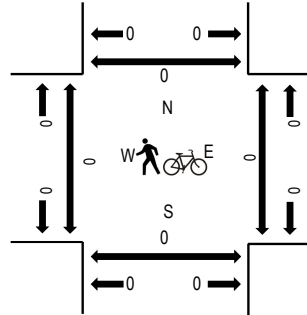
Peak Hour: 07:30 PM - 08:30 PM

Peak 15-Minutes: 07:30 PM - 07:45 PM

Peak Hour - All Vehicles



Peak Hour - Pedestrians/Bicycles on Crosswalk



Note: Total study counts contained in parentheses.

Traffic Counts

Interval Start Time	W CIMMARON ST Eastbound				W CIMMARON ST Westbound				I-25 SB RAMPS Northbound				I-25 NB RAMPS Southbound				Total	Rolling Hour	Pedestrian Crossings				
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North	
7:30 PM	0	0	156	121	0	1	133	0	0	0	0	0	0	0	17	0	87	515	1,937	0	0	0	0
7:45 PM	0	0	142	97	0	3	121	0	0	0	0	0	0	14	0	80	457	1,825	0	0	0	0	
8:00 PM	0	0	148	104	0	8	138	0	0	0	0	0	0	14	0	70	482	1,746	0	0	0	0	
8:15 PM	0	0	150	115	0	17	123	0	0	0	0	0	0	10	0	68	483		0	0	0	0	
8:30 PM	1	0	124	99	0	3	112	0	0	0	0	0	0	0	0	64	403		0	0	0	0	
8:45 PM	0	0	104	108	0	5	106	0	0	0	0	0	0	0	0	55	378		0	0	0	0	
Count Total	1	0	824	644	0	37	733	0	0	0	0	0	0	55	0	424	2,718		0	0	0	0	
Peak Hour	0	0	596	437	0	29	515	0	0	0	0	0	0	55	0	305	1,937		0	0	0	0	



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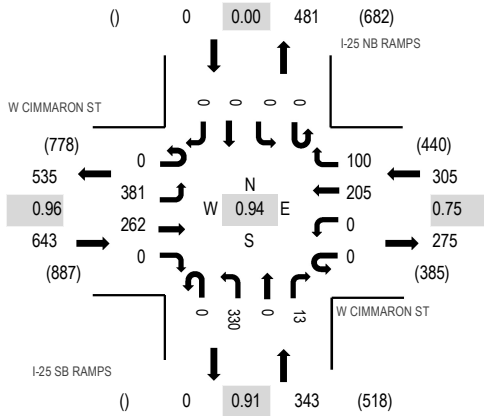
Location: 2 I-25 SB RAMPS & W CIMMARON ST PM

Date: Saturday, February 23, 2019

Peak Hour: 07:30 PM - 08:30 PM

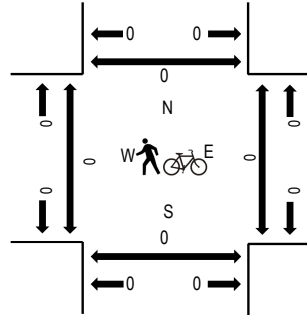
Peak 15-Minutes: 08:00 PM - 08:15 PM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles on Crosswalk



Traffic Counts

Interval Start Time	W CIMMARON ST Eastbound				W CIMMARON ST Westbound				I-25 SB RAMPS Northbound				I-25 NB RAMPS Southbound				Total	Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
7:30 PM	0	94	74	0	0	0	52	21	0	90	0	3	0	0	0	0	334	1,291	0	0	0	0
7:45 PM	0	89	72	0	0	0	36	23	0	89	0	3	0	0	0	0	312	1,242	0	0	0	0
8:00 PM	0	96	64	0	0	0	64	38	0	78	0	3	0	0	0	0	343	1,199	0	0	0	0
8:15 PM	0	102	52	0	0	0	53	18	0	73	0	4	0	0	0	0	302		0	0	0	0
8:30 PM	0	74	58	0	0	0	35	24	0	89	0	5	0	0	0	0	285		0	0	0	0
8:45 PM	0	74	38	0	0	0	47	29	0	72	0	9	0	0	0	0	269		0	0	0	0
Count Total	0	529	358	0	0	0	287	153	0	491	0	27	0	0	0	0	1,845		0	0	0	0
Peak Hour	0	381	262	0	0	0	205	100	0	330	0	13	0	0	0	0	1,291		0	0	0	0



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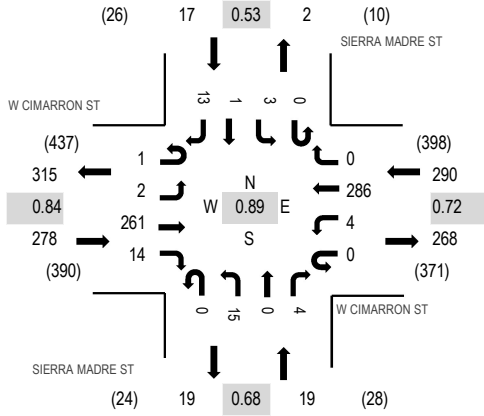
Location: 3 SIERRA MADRE ST & W CIMARRON ST PM

Date: Saturday, February 23, 2019

Peak Hour: 07:30 PM - 08:30 PM

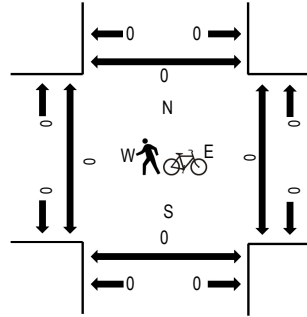
Peak 15-Minutes: 08:00 PM - 08:15 PM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles on Crosswalk



Traffic Counts

Interval Start Time	W CIMARRON ST Eastbound				W CIMARRON ST Westbound				SIERRA MADRE ST Northbound				SIERRA MADRE ST Southbound				Total	Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
7:30 PM	0	1	78	4	0	3	60	0	0	6	0	1	0	0	0	4	157	604	0	0	0	0
7:45 PM	0	0	71	3	0	0	51	0	0	4	0	1	0	2	1	5	138	564	0	0	0	0
8:00 PM	1	0	60	2	0	0	101	0	0	2	0	2	0	0	0	2	170	547	0	0	0	0
8:15 PM	0	1	52	5	0	1	74	0	0	3	0	0	0	1	0	2	139		0	0	0	0
8:30 PM	0	3	61	0	0	0	48	0	0	2	1	0	0	0	0	2	117		0	1	0	0
8:45 PM	1	3	40	4	0	0	60	0	0	4	1	1	0	1	1	5	121		0	0	0	0
Count Total	2	8	362	18	0	4	394	0	0	21	2	5	0	4	2	20	842		0	1	0	0
Peak Hour	1	2	261	14	0	4	286	0	0	15	0	4	0	3	1	13	604		0	0	0	0



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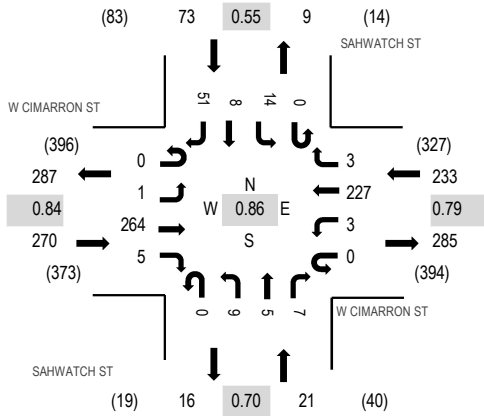
Location: 4 SAHWATCH ST & W CIMARRON ST PM

Date: Saturday, February 23, 2019

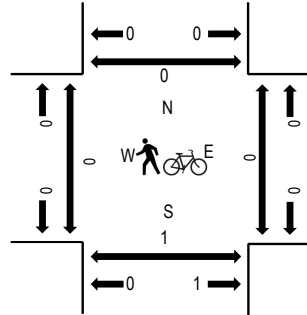
Peak Hour: 07:30 PM - 08:30 PM

Peak 15-Minutes: 08:00 PM - 08:15 PM

Peak Hour - All Vehicles



Peak Hour - Pedestrians/Bicycles on Crosswalk



Note: Total study counts contained in parentheses.

Traffic Counts

Interval Start Time	W CIMARRON ST Eastbound				W CIMARRON ST Westbound				SAHWATCH ST Northbound			SAHWATCH ST Southbound				Total	Rolling Hour	Pedestrian Crossings				
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru			Right	West	East	South	North
7:30 PM	0	0	78	2	0	0	54	1	0	3	1	3	0	1	3	5	151	597	0	0	0	0
7:45 PM	0	1	71	2	0	1	43	0	0	2	1	2	0	0	1	5	129	562	0	0	0	0
8:00 PM	0	0	62	0	0	1	73	0	0	2	2	1	0	6	1	26	174	543	0	0	1	0
8:15 PM	0	0	53	1	0	1	57	2	0	2	1	1	0	7	3	15	143		0	0	0	0
8:30 PM	0	2	58	1	0	0	41	0	0	3	1	5	0	1	0	4	116		0	0	3	0
8:45 PM	0	0	42	0	0	0	52	1	0	8	1	1	0	2	2	1	110		2	2	4	2
Count Total	0	3	364	6	0	3	320	4	0	20	7	13	0	17	10	56	823		2	2	8	2
Peak Hour	0	1	264	5	0	3	227	3	0	9	5	7	0	14	8	51	597		0	0	1	0



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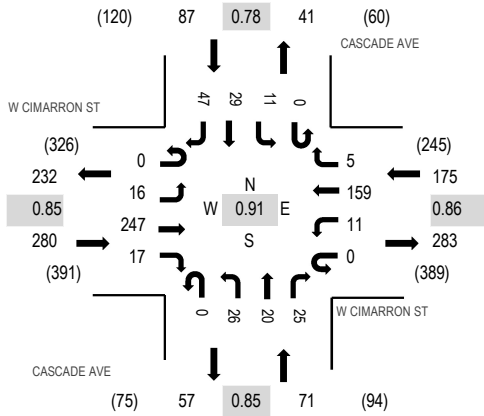
Location: 5 CASCADE AVE & W CIMARRON ST PM

Date: Saturday, February 23, 2019

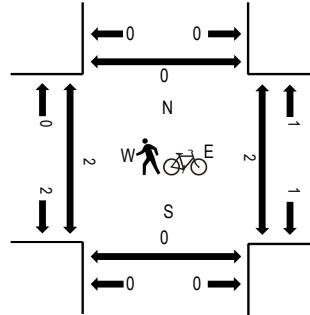
Peak Hour: 07:30 PM - 08:30 PM

Peak 15-Minutes: 08:00 PM - 08:15 PM

Peak Hour - All Vehicles



Peak Hour - Pedestrians/Bicycles on Crosswalk



Note: Total study counts contained in parentheses.

Traffic Counts

Interval Start Time	W CIMARRON ST Eastbound				W CIMARRON ST Westbound				CASCADE AVE Northbound			CASCADE AVE Southbound				Total	Rolling Hour	Pedestrian Crossings				
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru			Right	West	East	South	North
7:30 PM	0	2	76	4	0	6	40	1	0	8	6	5	0	3	10	7	168	613	0	1	0	0
7:45 PM	0	8	60	2	0	2	29	1	0	8	4	8	0	4	4	10	140	568	0	0	0	0
8:00 PM	0	4	58	7	0	1	48	2	0	7	7	7	0	3	8	17	169	542	0	1	0	0
8:15 PM	0	2	53	4	0	2	42	1	0	3	3	5	0	1	7	13	136		2	0	0	0
8:30 PM	0	5	57	2	0	2	26	2	0	10	3	2	0	1	8	5	123		2	1	0	0
8:45 PM	0	5	39	3	0	0	40	0	0	2	4	2	0	5	3	11	114		0	0	0	0
Count Total	0	26	343	22	0	13	225	7	0	38	27	29	0	17	40	63	850		4	3	0	0
Peak Hour	0	16	247	17	0	11	159	5	0	26	20	25	0	11	29	47	613		2	2	0	0



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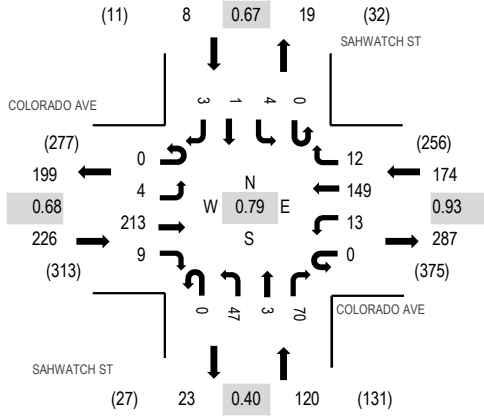
Location: 6 SAHWATCH ST & COLORADO AVE PM

Date: Saturday, February 23, 2019

Peak Hour: 07:30 PM - 08:30 PM

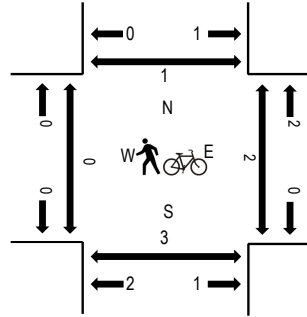
Peak 15-Minutes: 08:00 PM - 08:15 PM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles on Crosswalk



Traffic Counts

Interval Start Time	COLORADO AVE Eastbound				COLORADO AVE Westbound				SAHWATCH ST Northbound				SAHWATCH ST Southbound				Total	Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
7:30 PM	0	2	77	4	0	5	39	3	0	1	0	3	0	3	0	0	137	528	0	0	1	0
7:45 PM	0	0	44	2	0	2	38	4	0	1	0	2	0	0	0	0	93	477	0	0	1	0
8:00 PM	0	0	43	2	0	2	37	4	0	31	1	45	0	0	1	1	167	481	0	2	1	0
8:15 PM	0	2	49	1	0	4	35	1	0	14	2	20	0	1	0	2	131		0	0	0	0
8:30 PM	0	0	44	2	0	0	27	5	0	2	1	3	0	1	0	1	86		0	0	0	0
8:45 PM	0	2	38	1	0	1	44	5	0	3	0	2	0	0	0	1	97		0	0	0	0
Count Total	0	6	295	12	0	14	220	22	0	52	4	75	0	5	1	5	711		0	2	3	0
Peak Hour	0	4	213	9	0	13	149	12	0	47	3	70	0	4	1	3	528		0	2	3	0



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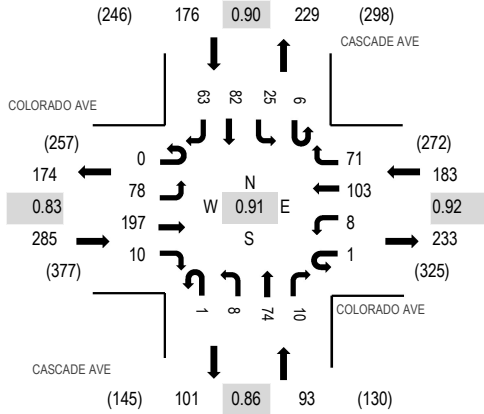
Location: 7 CASCADE AVE & COLORADO AVE PM

Date: Saturday, February 23, 2019

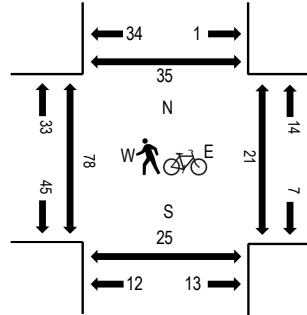
Peak Hour: 07:30 PM - 08:30 PM

Peak 15-Minutes: 07:30 PM - 07:45 PM

Peak Hour - All Vehicles



Peak Hour - Pedestrians/Bicycles on Crosswalk



Note: Total study counts contained in parentheses.

Traffic Counts

Interval Start Time	COLORADO AVE Eastbound				COLORADO AVE Westbound				CASCADE AVE Northbound				CASCADE AVE Southbound				Total	Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
7:30 PM	0	16	64	4	0	1	29	20	0	3	17	3	0	7	18	21	203	737	12	1	5	4
7:45 PM	0	11	37	1	0	2	22	23	0	2	16	2	1	7	21	13	158	678	13	4	2	10
8:00 PM	0	31	50	5	1	4	29	15	0	1	24	2	2	3	19	15	201	664	27	10	7	17
8:15 PM	0	20	46	0	0	1	23	13	1	2	17	3	3	8	24	14	175		26	6	11	4
8:30 PM	0	10	41	0	0	7	24	9	0	2	18	3	3	3	16	8	144		10	2	2	3
8:45 PM	0	5	34	2	0	1	33	15	0	4	7	3	2	8	18	12	144		8	1	0	3
Count Total	0	93	272	12	1	16	160	95	1	14	99	16	11	36	116	83	1,025		96	24	27	41
Peak Hour	0	78	197	10	1	8	103	71	1	8	74	10	6	25	82	63	737		78	21	25	35



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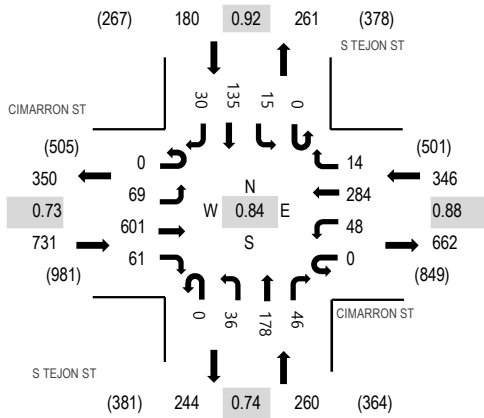
Location: 1 S TEJON ST & CIMARRON ST PM

Date: Saturday, March 9, 2019

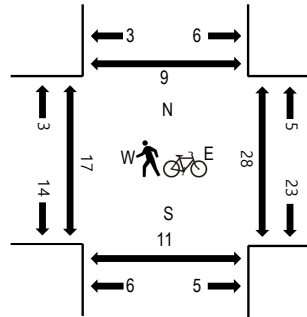
Peak Hour: 04:30 PM - 05:30 PM

Peak 15-Minutes: 04:45 PM - 05:00 PM

Peak Hour - All Vehicles



Peak Hour - Pedestrians/Bicycles on Crosswalk



Note: Total study counts contained in parentheses.

Traffic Counts

Interval Start Time	CIMARRON ST Eastbound				CIMARRON ST Westbound				S TEJON ST Northbound				S TEJON ST Southbound				Total	Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
4:30 PM	0	10	140	10	0	12	72	3	0	6	40	12	0	4	30	10	349	1,517	4	5	5	1
4:45 PM	0	20	216	13	0	16	75	7	0	8	44	5	0	2	43	4	453	1,466	4	7	2	1
5:00 PM	0	18	137	20	0	10	72	2	0	16	56	16	0	3	34	9	393	1,311	1	5	2	1
5:15 PM	0	21	108	18	0	10	65	2	0	6	38	13	0	6	28	7	322		8	11	2	5
5:30 PM	0	16	85	14	0	13	63	7	0	13	39	3	0	2	36	7	298		2	4	3	0
5:45 PM	0	17	88	30	0	10	58	4	0	7	34	8	0	1	34	7	298		3	5	0	1
Count Total	0	102	774	105	0	71	405	25	0	56	251	57	0	18	205	44	2,113		22	37	14	9
Peak Hour	0	69	601	61	0	48	284	14	0	36	178	46	0	15	135	30	1,517		17	28	11	8



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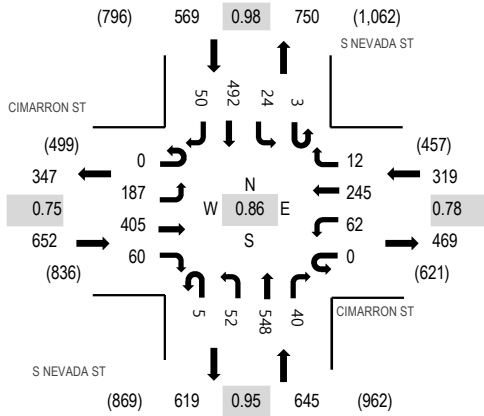
Location: 2 S NEVADA ST & CIMARRON ST PM

Date: Saturday, March 9, 2019

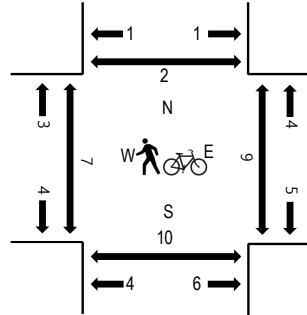
Peak Hour: 04:30 PM - 05:30 PM

Peak 15-Minutes: 04:45 PM - 05:00 PM

Peak Hour - All Vehicles



Peak Hour - Pedestrians/Bicycles on Crosswalk



Note: Total study counts contained in parentheses.

Traffic Counts

Interval Start Time	CIMARRON ST Eastbound				CIMARRON ST Westbound				S NEVADA ST Northbound				S NEVADA ST Southbound				Total	Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
4:30 PM	0	33	101	19	0	15	59	3	0	18	138	9	1	8	111	14	529	2,185	1	3	2	0
4:45 PM	0	63	143	11	0	22	76	4	1	10	145	12	0	8	125	12	632	2,114	3	4	4	2
5:00 PM	0	60	81	15	0	15	57	3	2	17	133	8	0	5	132	8	536	1,890	2	2	3	0
5:15 PM	0	31	80	15	0	10	53	2	2	7	132	11	2	3	124	16	488		1	0	1	0
5:30 PM	0	16	66	11	0	11	60	5	3	14	147	8	0	5	102	10	458		0	2	2	0
5:45 PM	0	15	65	11	0	11	50	1	0	12	127	6	1	2	101	6	408		1	1	2	0
Count Total	0	218	536	82	0	84	355	18	8	78	822	54	4	31	695	66	3,051		8	12	14	2
Peak Hour	0	187	405	60	0	62	245	12	5	52	548	40	3	24	492	50	2,185		7	9	10	2



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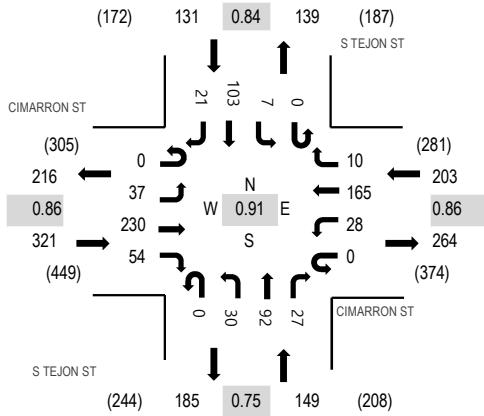
Location: 1 S TEJON ST & CIMARRON ST PM

Date: Saturday, March 9, 2019

Peak Hour: 07:30 PM - 08:30 PM

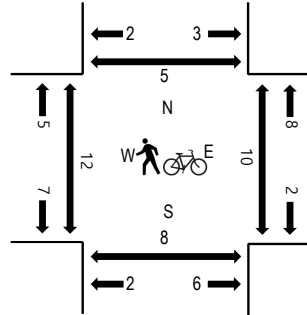
Peak 15-Minutes: 07:45 PM - 08:00 PM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles on Crosswalk



Traffic Counts

Interval Start Time	CIMARRON ST Eastbound				CIMARRON ST Westbound				S TEJON ST Northbound			S TEJON ST Southbound				Total	Rolling Hour	Pedestrian Crossings				
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru			Right	West	East	South	North
7:30 PM	0	8	66	19	0	13	42	4	0	9	14	12	0	4	22	5	218	804	3	0	3	0
7:45 PM	0	15	55	14	0	6	49	3	0	6	38	6	0	0	26	3	221	730	3	5	0	1
8:00 PM	0	7	60	20	0	7	42	3	0	8	18	3	0	2	31	6	207	671	4	2	0	2
8:15 PM	0	7	49	1	0	2	32	0	0	7	22	6	0	1	24	7	158		2	3	5	2
8:30 PM	0	3	49	13	0	4	31	1	0	9	12	7	0	0	11	4	144		2	0	0	0
8:45 PM	0	8	48	7	0	5	34	3	0	6	21	4	0	2	19	5	162		1	5	0	0
Count Total	0	48	327	74	0	37	230	14	0	45	125	38	0	9	133	30	1,110		15	15	8	5
Peak Hour	0	37	230	54	0	28	165	10	0	30	92	27	0	7	103	21	804		12	10	8	5



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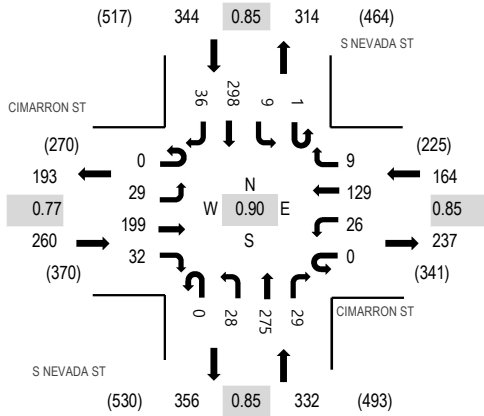
Location: 2 S NEVADA ST & CIMARRON ST PM

Date: Saturday, March 9, 2019

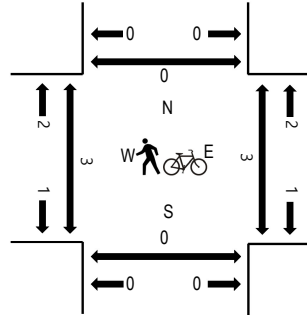
Peak Hour: 07:30 PM - 08:30 PM

Peak 15-Minutes: 07:45 PM - 08:00 PM

Peak Hour - All Vehicles



Peak Hour - Pedestrians/Bicycles on Crosswalk



Note: Total study counts contained in parentheses.

Traffic Counts

Interval Start Time	CIMARRON ST Eastbound				CIMARRON ST Westbound				S NEVADA ST Northbound				S NEVADA ST Southbound				Total	Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
7:30 PM	0	7	66	11	0	5	38	5	0	9	78	7	1	3	63	9	302	1,100	1	1	0	0
7:45 PM	0	3	43	11	0	9	37	2	0	8	83	7	0	3	87	11	304	1,034	2	2	0	0
8:00 PM	0	12	48	3	0	10	30	2	0	4	51	7	0	2	81	14	264	999	0	0	0	0
8:15 PM	0	7	42	7	0	2	24	0	0	7	63	8	0	1	67	2	230		0	0	0	0
8:30 PM	0	10	34	12	0	4	24	1	0	4	73	3	0	4	60	7	236		5	1	0	0
8:45 PM	0	5	45	4	0	4	27	1	0	8	59	14	1	4	90	7	269		0	1	0	0
Count Total	0	44	278	48	0	34	180	11	0	40	407	46	2	17	448	50	1,605		8	5	0	0
Peak Hour	0	29	199	32	0	26	129	9	0	28	275	29	1	9	298	36	1,100		3	3	0	0

APPENDIX B. EXISTING TRAFFIC LOS WORKSHEETS

Lanes, Volumes, Timings
4: I-25 & Cimarron St

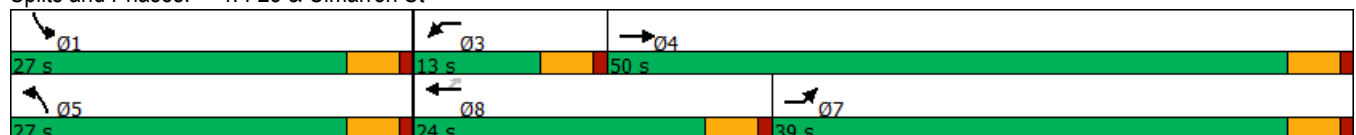
Existing Early PM
03/13/2019

Lane Group	EBL	EBT	EBR2	WBL	WBT	WBR2	NBL	NBR2	SBL	SBR2
Lane Configurations										
Traffic Volume (vph)	724	471	784	53	239	143	599	59	105	612
Future Volume (vph)	724	471	784	53	239	143	599	59	105	612
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	500			380			550		500	
Storage Lanes	2			1			0		1	
Taper Length (ft)	25			25			25		25	
Satd. Flow (prot)	3433	3539	1583	1770	3539	1583	4990	1583	3433	1583
Flt Permitted	0.950			0.950			0.950		0.950	
Satd. Flow (perm)	3433	3539	1583	1770	3539	1583	4990	1583	3433	1583
Right Turn on Red			Yes			Yes		Yes		Yes
Satd. Flow (RTOR)			852			155		182		580
Link Speed (mph)		30			30					
Link Distance (ft)		655			846					
Travel Time (s)		14.9			19.2					
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)										
Lane Group Flow (vph)	787	512	852	58	260	155	651	64	114	665
Turn Type	Prot	NA	Free	Prot	NA	Perm	Prot	Free	Prot	Free
Protected Phases	7	4		3	8		5		1	
Permitted Phases			Free			8		Free		Free
Total Split (s)	39.0	50.0		13.0	24.0	24.0	27.0		27.0	
Total Lost Time (s)	4.5	4.5		4.5	4.5	4.5	4.5		4.5	
Act Effct Green (s)	26.6	32.7	90.0	8.3	12.4	12.4	37.5	90.0	37.5	90.0
Actuated g/C Ratio	0.30	0.36	1.00	0.09	0.14	0.14	0.42	1.00	0.42	1.00
v/c Ratio	0.78	0.40	0.54	0.36	0.53	0.44	0.31	0.04	0.08	0.42
Control Delay	34.3	22.1	1.3	36.4	31.8	14.2	19.7	0.1	18.7	0.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	34.3	22.1	1.3	36.4	31.8	14.2	19.7	0.1	18.7	0.8
LOS	C	C	A	D	C	B	B	A	B	A
Approach Delay		18.3			26.6					
Approach LOS		B			C					

Intersection Summary






















Area Type: Other
 Cycle Length: 90
 Actuated Cycle Length: 90
 Offset: 34 (38%), Referenced to phase 2: and 6:, Start of Green
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.78
 Intersection Signal Delay: 16.4
 Intersection Capacity Utilization 49.9%
 Analysis Period (min) 15
 Intersection LOS: B
 ICU Level of Service A

Splits and Phases: 4: I-25 & Cimarron St



HCM 6th Signalized Intersection Summary
 9: Sierra Madre St & Cimarron St

Existing Early PM
 03/13/2019

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	17	471	29	10	421	2	30	3	8	3	7	18
Future Volume (veh/h)	17	471	29	10	421	2	30	3	8	3	7	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	18	512	32	11	458	2	33	3	9	3	8	20
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	291	823	367	248	840	4	884	74	901	313	781	901
Arrive On Green	0.23	0.23	0.23	0.46	0.46	0.46	0.57	0.57	0.57	0.57	0.57	0.57
Sat Flow, veh/h	932	3554	1585	862	3629	16	1286	130	1585	372	1375	1585
Grp Volume(v), veh/h	18	512	32	11	224	236	36	0	9	11	0	20
Grp Sat Flow(s),veh/h/ln	932	1777	1585	862	1777	1868	1416	0	1585	1746	0	1585
Q Serve(g_s), s	0.8	5.8	0.7	0.5	4.1	4.1	0.3	0.0	0.1	0.0	0.0	0.2
Cycle Q Clear(g_c), s	4.8	5.8	0.7	6.3	4.1	4.1	0.4	0.0	0.1	0.1	0.0	0.2
Prop In Lane	1.00		1.00	1.00		0.01	0.92		1.00	0.27		1.00
Lane Grp Cap(c), veh/h	291	823	367	248	411	432	958	0	901	1095	0	901
V/C Ratio(X)	0.06	0.62	0.09	0.04	0.55	0.55	0.04	0.00	0.01	0.01	0.00	0.02
Avail Cap(c_a), veh/h	448	1421	634	393	711	747	958	0	901	1095	0	901
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	16.9	15.5	13.6	13.4	10.4	10.4	4.3	0.0	4.2	4.2	0.0	4.2
Incr Delay (d2), s/veh	0.1	0.8	0.1	0.1	1.1	1.1	0.1	0.0	0.0	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	2.1	0.2	0.1	1.3	1.3	0.1	0.0	0.0	0.0	0.0	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	17.0	16.3	13.7	13.4	11.5	11.5	4.4	0.0	4.2	4.2	0.0	4.3
LnGrp LOS	B	B	B	B	B	B	A	A	A	A	A	A
Approach Vol, veh/h		562			471			45			31	
Approach Delay, s/veh		16.2			11.5			4.3			4.3	
Approach LOS		B			B			A			A	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		30.1		14.9		30.1		14.9				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		18.0		18.0		18.0		18.0				
Max Q Clear Time (g_c+I1), s		2.4		7.8		2.2		8.3				
Green Ext Time (p_c), s		0.1		2.6		0.0		1.9				
Intersection Summary												
HCM 6th Ctrl Delay				13.4								
HCM 6th LOS				B								

Intersection												
Int Delay, s/veh	1.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↵	↕↗		↵	↕↗		↵	↕	↗	↵	↗	↕
Traffic Vol, veh/h	12	459	12	4	371	8	15	3	4	19	8	45
Future Vol, veh/h	12	459	12	4	371	8	15	3	4	19	8	45
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	50	-	-	50	-	-	50	-	25	50	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	13	499	13	4	403	9	16	3	4	21	9	49



























Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	412	0	0	512	0	0	746	952	256	693	954	206
Stage 1	-	-	-	-	-	-	532	532	-	416	416	-
Stage 2	-	-	-	-	-	-	214	420	-	277	538	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	1143	-	-	1050	-	-	302	258	743	330	257	800
Stage 1	-	-	-	-	-	-	499	524	-	585	590	-
Stage 2	-	-	-	-	-	-	768	588	-	706	521	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1143	-	-	1050	-	-	273	254	743	321	253	800
Mov Cap-2 Maneuver	-	-	-	-	-	-	273	254	-	321	253	-
Stage 1	-	-	-	-	-	-	494	518	-	579	588	-
Stage 2	-	-	-	-	-	-	708	586	-	690	515	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.2			0.1			17.4			13		
HCM LOS							C			B		

Minor Lane/Major Mvmt	NBLn1	NBLn2	NBLn3	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	273	254	743	1143	-	-	1050	-	-	321	603
HCM Lane V/C Ratio	0.06	0.013	0.006	0.011	-	-	0.004	-	-	0.064	0.096
HCM Control Delay (s)	19	19.4	9.9	8.2	-	-	8.4	-	-	17	11.6
HCM Lane LOS	C	C	A	A	-	-	A	-	-	C	B
HCM 95th %tile Q(veh)	0.2	0	0	0	-	-	0	-	-	0.2	0.3























HCM 6th Signalized Intersection Summary
 15: Cascade Ave & Cimarron St

Existing Early PM
 03/13/2019

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 			 			 			 	
Traffic Volume (veh/h)	24	431	25	8	297	12	24	33	23	23	49	66
Future Volume (veh/h)	24	431	25	8	297	12	24	33	23	23	49	66
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	26	468	27	9	323	13	26	36	25	25	53	72
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	283	707	41	247	721	29	903	2107	940	950	2107	940
Arrive On Green	0.41	0.41	0.41	0.07	0.07	0.07	0.59	0.59	0.59	0.59	0.59	0.59
Sat Flow, veh/h	1044	3415	197	902	3482	140	1266	3554	1585	1341	3554	1585
Grp Volume(v), veh/h	26	243	252	9	164	172	26	36	25	25	53	72
Grp Sat Flow(s),veh/h/ln	1044	1777	1835	902	1777	1845	1266	1777	1585	1341	1777	1585
Q Serve(g_s), s	0.9	5.0	5.0	0.4	4.0	4.0	0.4	0.2	0.3	0.4	0.3	0.9
Cycle Q Clear(g_c), s	4.9	5.0	5.0	5.4	4.0	4.0	0.7	0.2	0.3	0.5	0.3	0.9
Prop In Lane	1.00		0.11	1.00		0.08	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	283	368	380	247	368	382	903	2107	940	950	2107	940
V/C Ratio(X)	0.09	0.66	0.66	0.04	0.45	0.45	0.03	0.02	0.03	0.03	0.03	0.08
Avail Cap(c_a), veh/h	484	711	734	421	711	738	903	2107	940	950	2107	940
HCM Platoon Ratio	2.00	2.00	2.00	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.98	0.98	0.98	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	13.5	11.9	11.9	21.6	18.5	18.5	3.9	3.8	3.8	3.9	3.8	3.9
Incr Delay (d2), s/veh	0.1	2.0	2.0	0.1	0.8	0.8	0.1	0.0	0.1	0.1	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	1.6	1.7	0.1	1.6	1.7	0.1	0.0	0.1	0.1	0.1	0.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	13.7	13.9	13.9	21.6	19.3	19.3	4.0	3.8	3.8	3.9	3.8	4.1
LnGrp LOS	B	B	B	C	B	B	A	A	A	A	A	A
Approach Vol, veh/h		521			345			87			150	
Approach Delay, s/veh		13.9			19.4			3.9			3.9	
Approach LOS		B			B			A			A	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		31.2		13.8		31.2		13.8				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		18.0		18.0		18.0		18.0				
Max Q Clear Time (g_c+I1), s		2.7		7.0		2.9		7.4				
Green Ext Time (p_c), s		0.2		2.3		0.5		1.4				
Intersection Summary												
HCM 6th Ctrl Delay				13.5								
HCM 6th LOS				B								



























HCM 6th Signalized Intersection Summary
 18: Tejon St & Cimarron St

Existing Early PM
 03/13/2019

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	69	601	61	48	284	14	36	178	46	15	135	30
Future Volume (veh/h)	69	601	61	48	284	14	36	178	46	15	135	30
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	75	653	66	52	309	15	39	193	50	16	147	33
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	398	1007	102	259	1066	52	699	918	778	652	918	778
Arrive On Green	0.31	0.31	0.31	0.10	0.10	0.10	0.49	0.49	0.49	0.49	0.49	0.49
Sat Flow, veh/h	1056	3259	329	733	3450	167	1204	1870	1585	1137	1870	1585
Grp Volume(v), veh/h	75	356	363	52	159	165	39	193	50	16	147	33
Grp Sat Flow(s),veh/h/ln	1056	1777	1811	733	1777	1840	1204	1870	1585	1137	1870	1585
Q Serve(g_s), s	2.7	7.8	7.8	3.1	3.7	3.7	0.8	2.6	0.7	0.4	2.0	0.5
Cycle Q Clear(g_c), s	6.4	7.8	7.8	10.9	3.7	3.7	2.8	2.6	0.7	3.0	2.0	0.5
Prop In Lane	1.00		0.18	1.00		0.09	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	398	549	560	259	549	569	699	918	778	652	918	778
V/C Ratio(X)	0.19	0.65	0.65	0.20	0.29	0.29	0.06	0.21	0.06	0.02	0.16	0.04
Avail Cap(c_a), veh/h	494	711	724	326	711	736	699	918	778	652	918	778
HCM Platoon Ratio	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.88	0.88	0.88	0.97	0.97	0.97	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	14.5	13.4	13.4	22.7	15.6	15.6	7.1	6.5	6.0	7.4	6.3	6.0
Incr Delay (d2), s/veh	0.2	1.1	1.1	0.4	0.3	0.3	0.2	0.5	0.2	0.1	0.4	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	2.7	2.8	0.6	1.4	1.4	0.2	0.9	0.2	0.1	0.7	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	14.7	14.6	14.6	23.0	15.9	15.9	7.2	7.0	6.2	7.4	6.7	6.1
LnGrp LOS	B	B	B	C	B	B	A	A	A	A	A	A
Approach Vol, veh/h		794			376			282			196	
Approach Delay, s/veh		14.6			16.9			6.9			6.6	
Approach LOS		B			B			A			A	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		26.6		18.4		26.6		18.4				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		18.0		18.0		18.0		18.0				
Max Q Clear Time (g_c+I1), s		4.8		9.8		5.0		12.9				
Green Ext Time (p_c), s		1.1		3.1		0.7		1.0				
Intersection Summary												
HCM 6th Ctrl Delay				12.9								
HCM 6th LOS				B								

HCM 6th Signalized Intersection Summary
21: Nevada Ave & Cimarron St

Existing Early PM
03/13/2019

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 			 			 			 	
Traffic Volume (veh/h)	187	405	60	62	285	12	52	548	40	24	492	50
Future Volume (veh/h)	187	405	60	62	285	12	52	548	40	24	492	50
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	203	440	65	67	310	13	57	596	43	26	535	54
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	421	978	144	375	1094	46	478	1724	769	461	1582	159
Arrive On Green	0.63	0.63	0.63	0.31	0.31	0.31	0.49	0.49	0.49	0.49	0.49	0.49
Sat Flow, veh/h	1057	3108	457	894	3476	145	827	3554	1585	790	3260	328
Grp Volume(v), veh/h	203	250	255	67	158	165	57	596	43	26	291	298
Grp Sat Flow(s),veh/h/ln	1057	1777	1788	894	1777	1844	827	1777	1585	790	1777	1811
Q Serve(g_s), s	7.1	3.3	3.3	2.8	3.0	3.0	2.1	4.7	0.6	0.9	4.5	4.6
Cycle Q Clear(g_c), s	10.1	3.3	3.3	6.1	3.0	3.0	6.6	4.7	0.6	5.6	4.5	4.6
Prop In Lane	1.00		0.26	1.00		0.08	1.00		1.00	1.00		0.18
Lane Grp Cap(c), veh/h	421	559	563	375	559	580	478	1724	769	461	862	879
V/C Ratio(X)	0.48	0.45	0.45	0.18	0.28	0.28	0.12	0.35	0.06	0.06	0.34	0.34
Avail Cap(c_a), veh/h	512	711	715	452	711	738	478	1724	769	461	862	879
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.81	0.81	0.81	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	8.8	6.3	6.3	14.0	11.6	11.6	9.2	7.2	6.1	8.9	7.1	7.1
Incr Delay (d2), s/veh	0.7	0.5	0.5	0.2	0.3	0.3	0.5	0.6	0.1	0.2	1.1	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	0.9	0.9	0.5	1.0	1.1	0.4	1.4	0.2	0.2	1.5	1.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	9.5	6.8	6.8	14.2	11.9	11.9	9.7	7.7	6.3	9.1	8.2	8.2
LnGrp LOS	A	A	A	B	B	B	A	A	A	A	A	A
Approach Vol, veh/h		708			390			696			615	
Approach Delay, s/veh		7.6			12.3			7.8			8.2	
Approach LOS		A			B			A			A	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		26.3		18.7		26.3		18.7				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		18.0		18.0		18.0		18.0				
Max Q Clear Time (g_c+I1), s		8.6		12.1		7.6		8.1				
Green Ext Time (p_c), s		3.1		2.0		2.8		1.6				
Intersection Summary												
HCM 6th Ctrl Delay				8.6								
HCM 6th LOS				A								

Intersection												
Int Delay, s/veh	1.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↵	↕	↗	↵	↕	↗	↵	↕	↗	↵	↕	↗
Traffic Vol, veh/h	5	363	30	16	314	24	28	4	37	8	0	12
Future Vol, veh/h	5	363	30	16	314	24	28	4	37	8	0	12
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	50	-	50	50	-	50	50	-	-	25	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	5	395	33	17	341	26	30	4	40	9	0	13



























Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	367	0	0	428	0	0	610	806	198	585	813	171
Stage 1	-	-	-	-	-	-	405	405	-	375	375	-
Stage 2	-	-	-	-	-	-	205	401	-	210	438	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	1188	-	-	1128	-	-	378	314	810	394	311	843
Stage 1	-	-	-	-	-	-	593	597	-	618	615	-
Stage 2	-	-	-	-	-	-	778	599	-	773	577	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1188	-	-	1128	-	-	367	308	810	365	305	843
Mov Cap-2 Maneuver	-	-	-	-	-	-	367	308	-	365	305	-
Stage 1	-	-	-	-	-	-	591	595	-	616	606	-
Stage 2	-	-	-	-	-	-	754	590	-	726	575	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	0.4	12.6	11.6
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	367	699	1188	-	-	1128	-	-	365	843
HCM Lane V/C Ratio	0.083	0.064	0.005	-	-	0.015	-	-	0.024	0.015
HCM Control Delay (s)	15.7	10.5	8	-	-	8.2	-	-	15.1	9.3
HCM Lane LOS	C	B	A	-	-	A	-	-	C	A
HCM 95th %tile Q(veh)	0.3	0.2	0	-	-	0	-	-	0.1	0

HCM 6th Signalized Intersection Summary
29: Cascade Ave & Colorado Ave

Existing Early PM
03/13/2019

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 			 			 			 	
Traffic Volume (veh/h)	91	300	22	23	207	69	24	75	8	34	141	122
Future Volume (veh/h)	91	300	22	23	207	69	24	75	8	34	141	122
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	99	326	24	25	225	75	26	82	9	37	153	133
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	351	690	308	314	392	127	588	1207	130	682	1361	607
Arrive On Green	0.08	0.19	0.19	0.03	0.15	0.15	0.03	0.37	0.37	0.04	0.38	0.38
Sat Flow, veh/h	1781	3554	1585	1781	2637	856	1781	3235	350	1781	3554	1585
Grp Volume(v), veh/h	99	326	24	25	150	150	26	44	47	37	153	133
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1716	1781	1777	1807	1781	1777	1585
Q Serve(g_s), s	2.3	4.0	0.6	0.6	3.9	4.1	0.4	0.8	0.8	0.6	1.4	2.8
Cycle Q Clear(g_c), s	2.3	4.0	0.6	0.6	3.9	4.1	0.4	0.8	0.8	0.6	1.4	2.8
Prop In Lane	1.00		1.00	1.00		0.50	1.00		0.19	1.00		1.00
Lane Grp Cap(c), veh/h	351	690	308	314	264	255	588	663	674	682	1361	607
V/C Ratio(X)	0.28	0.47	0.08	0.08	0.57	0.59	0.04	0.07	0.07	0.05	0.11	0.22
Avail Cap(c_a), veh/h	415	1326	591	441	645	623	713	663	674	790	1361	607
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	16.0	17.7	16.3	17.0	19.6	19.7	9.0	10.0	10.0	8.7	9.9	10.3
Incr Delay (d2), s/veh	0.4	0.5	0.1	0.1	1.9	2.2	0.0	0.2	0.2	0.0	0.2	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	1.5	0.2	0.2	1.6	1.6	0.1	0.3	0.3	0.2	0.5	1.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	16.4	18.2	16.4	17.1	21.5	21.9	9.0	10.2	10.2	8.8	10.0	11.1
LnGrp LOS	B	B	B	B	C	C	A	B	B	A	B	B
Approach Vol, veh/h		449			325			117			323	
Approach Delay, s/veh		17.7			21.3			9.9			10.3	
Approach LOS		B			C			A			B	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	6.5	23.0	6.0	14.1	6.0	23.5	8.2	11.9				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	5.0	18.5	5.0	18.5	5.0	18.5	5.5	18.0				
Max Q Clear Time (g_c+I1), s	2.6	2.8	2.6	6.0	2.4	4.8	4.3	6.1				
Green Ext Time (p_c), s	0.0	0.3	0.0	1.7	0.0	1.1	0.0	1.3				
Intersection Summary												
HCM 6th Ctrl Delay			16.0									
HCM 6th LOS			B									

Lanes, Volumes, Timings
4: I-25 & Cimarron St

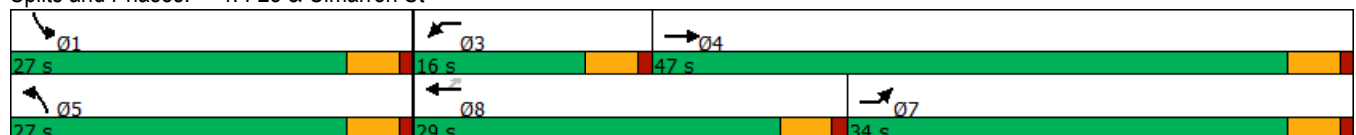
Existing Late PM
03/13/2019

Lane Group	EBL	EBT	EBR2	WBL	WBT	WBR2	NBL	NBR2	SBL	SBR2
Lane Configurations										
Traffic Volume (vph)	381	261	437	29	176	100	330	13	55	305
Future Volume (vph)	381	261	437	29	176	100	330	13	55	305
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	500			380			550		500	
Storage Lanes	2			1			0		1	
Taper Length (ft)	25			25			25		25	
Satd. Flow (prot)	3433	3539	1583	1770	3539	1583	4990	1583	3433	1583
Flt Permitted	0.950			0.950			0.950		0.950	
Satd. Flow (perm)	3433	3539	1583	1770	3539	1583	4990	1583	3433	1583
Right Turn on Red			Yes			Yes		Yes		Yes
Satd. Flow (RTOR)			475			109		182		332
Link Speed (mph)		30			30					
Link Distance (ft)		655			846					
Travel Time (s)		14.9			19.2					
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)										
Lane Group Flow (vph)	414	284	475	32	191	109	359	14	60	332
Turn Type	Prot	NA	Free	Prot	NA	Perm	Prot	Free	Prot	Free
Protected Phases	7	4		3	8		5		1	
Permitted Phases			Free			8		Free		Free
Total Split (s)	34.0	47.0		16.0	29.0	29.0	27.0		27.0	
Total Lost Time (s)	4.5	4.5		4.5	4.5	4.5	4.5		4.5	
Act Effct Green (s)	16.2	23.5	90.0	7.2	10.4	10.4	49.9	90.0	49.9	90.0
Actuated g/C Ratio	0.18	0.26	1.00	0.08	0.12	0.12	0.55	1.00	0.55	1.00
v/c Ratio	0.67	0.31	0.30	0.23	0.47	0.39	0.13	0.01	0.03	0.21
Control Delay	39.7	28.0	0.5	28.8	27.5	14.9	10.7	0.0	11.0	0.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	39.7	28.0	0.5	28.8	27.5	14.9	10.7	0.0	11.0	0.3
LOS	D	C	A	C	C	B	B	A	B	A
Approach Delay		21.0			23.5					
Approach LOS		C			C					

Intersection Summary
























Area Type: Other
 Cycle Length: 90
 Actuated Cycle Length: 90
 Offset: 42 (47%), Referenced to phase 2: and 6:, Start of Green
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.67
 Intersection Signal Delay: 16.3
 Intersection Capacity Utilization 33.3%
 Analysis Period (min) 15
 Intersection LOS: B
 ICU Level of Service A

Splits and Phases: 4: I-25 & Cimarron St



HCM 6th Signalized Intersection Summary
 9: Sierra Madre St & Cimarron St

Existing Late PM
 03/13/2019

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 			 							
Traffic Volume (veh/h)	2	261	14	4	286	0	15	0	4	3	1	13
Future Volume (veh/h)	2	261	14	4	286	0	15	0	4	3	1	13
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	2	284	15	4	311	0	16	0	4	3	1	14
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	248	552	246	249	552	0	778	0	1022	635	193	1022
Arrive On Green	0.16	0.16	0.16	0.31	0.31	0.00	0.64	0.00	0.64	0.64	0.64	0.64
Sat Flow, veh/h	1068	3554	1585	1080	3647	0	958	0	1585	768	299	1585
Grp Volume(v), veh/h	2	284	15	4	311	0	16	0	4	4	0	14
Grp Sat Flow(s),veh/h/ln	1068	1777	1585	1080	1777	0	958	0	1585	1067	0	1585
Q Serve(g_s), s	0.1	3.3	0.4	0.1	3.3	0.0	0.3	0.0	0.0	0.0	0.0	0.1
Cycle Q Clear(g_c), s	3.4	3.3	0.4	3.4	3.3	0.0	9.4	0.0	0.0	9.3	0.0	0.1
Prop In Lane	1.00		1.00	1.00		0.00	1.00		1.00	0.75		1.00
Lane Grp Cap(c), veh/h	248	552	246	249	552	0	778	0	1022	828	0	1022
V/C Ratio(X)	0.01	0.51	0.06	0.02	0.56	0.00	0.02	0.00	0.00	0.00	0.00	0.01
Avail Cap(c_a), veh/h	509	1421	634	513	1421	0	778	0	1022	828	0	1022
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	19.0	17.4	16.2	15.7	14.2	0.0	7.1	0.0	2.8	3.7	0.0	2.9
Incr Delay (d2), s/veh	0.0	0.7	0.1	0.0	0.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	1.2	0.1	0.0	1.1	0.0	0.1	0.0	0.0	0.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	19.0	18.2	16.3	15.7	15.1	0.0	7.1	0.0	2.9	3.7	0.0	2.9
LnGrp LOS	B	B	B	B	B	A	A	A	A	A	A	A
Approach Vol, veh/h		301			315			20				18
Approach Delay, s/veh		18.1			15.1			6.3				3.1
Approach LOS		B			B			A				A
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		33.5		11.5		33.5		11.5				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		18.0		18.0		18.0		18.0				
Max Q Clear Time (g_c+I1), s		11.4		5.4		11.3		5.4				
Green Ext Time (p_c), s		0.0		1.4		0.0		1.6				
Intersection Summary												
HCM 6th Ctrl Delay				15.9								
HCM 6th LOS				B								

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	1	264	5	3	227	3	9	5	7	14	8	51
Future Vol, veh/h	1	264	5	3	227	3	9	5	7	14	8	51
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	50	-	-	50	-	-	50	-	25	50	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	287	5	3	247	3	10	5	8	15	9	55



























Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	250	0	0	292	0	0	426	548	146	403	549	125
Stage 1	-	-	-	-	-	-	292	292	-	255	255	-
Stage 2	-	-	-	-	-	-	134	256	-	148	294	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	1313	-	-	1267	-	-	512	442	875	532	442	902
Stage 1	-	-	-	-	-	-	692	670	-	727	695	-
Stage 2	-	-	-	-	-	-	855	694	-	840	668	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1313	-	-	1267	-	-	472	441	875	521	441	902
Mov Cap-2 Maneuver	-	-	-	-	-	-	472	441	-	521	441	-
Stage 1	-	-	-	-	-	-	691	669	-	726	694	-
Stage 2	-	-	-	-	-	-	791	693	-	825	667	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			0.1			11.7			10.4		
HCM LOS							B			B		

Minor Lane/Major Mvmt	NBLn1	NBLn2	NBLn3	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	472	441	875	1313	-	-	1267	-	-	521	790
HCM Lane V/C Ratio	0.021	0.012	0.009	0.001	-	-	0.003	-	-	0.029	0.081
HCM Control Delay (s)	12.8	13.3	9.2	7.7	-	-	7.8	-	-	12.1	10
HCM Lane LOS	B	B	A	A	-	-	A	-	-	B	B
HCM 95th %tile Q(veh)	0.1	0	0	0	-	-	0	-	-	0.1	0.3

HCM 6th Signalized Intersection Summary
 15: Cascade Ave & Cimarron St

Existing Late PM
 03/13/2019

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 			 			 			 	
Traffic Volume (veh/h)	16	247	17	11	159	5	26	20	25	11	29	47
Future Volume (veh/h)	16	247	17	11	159	5	26	20	25	11	29	47
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	17	268	18	12	173	5	28	22	27	12	32	51
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	277	479	32	240	499	14	1022	2340	1044	1050	2340	1044
Arrive On Green	0.28	0.28	0.28	0.14	0.14	0.14	0.66	0.66	0.66	0.66	0.66	0.66
Sat Flow, veh/h	1206	3381	226	1093	3527	102	1315	3554	1585	1356	3554	1585
Grp Volume(v), veh/h	17	140	146	12	87	91	28	22	27	12	32	51
Grp Sat Flow(s),veh/h/ln	1206	1777	1830	1093	1777	1852	1315	1777	1585	1356	1777	1585
Q Serve(g_s), s	0.5	3.0	3.1	0.5	2.0	2.0	0.3	0.1	0.3	0.1	0.1	0.5
Cycle Q Clear(g_c), s	2.5	3.0	3.1	3.5	2.0	2.0	0.5	0.1	0.3	0.2	0.1	0.5
Prop In Lane	1.00		0.12	1.00		0.05	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	277	252	259	240	252	262	1022	2340	1044	1050	2340	1044
V/C Ratio(X)	0.06	0.56	0.56	0.05	0.35	0.35	0.03	0.01	0.03	0.01	0.01	0.05
Avail Cap(c_a), veh/h	589	711	732	523	711	741	1022	2340	1044	1050	2340	1044
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.99	0.99	0.99	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	15.6	14.9	14.9	19.5	17.4	17.4	2.7	2.6	2.7	2.7	2.6	2.7
Incr Delay (d2), s/veh	0.1	1.9	1.9	0.1	0.8	0.8	0.0	0.0	0.0	0.0	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	1.1	1.2	0.1	0.8	0.8	0.1	0.0	0.1	0.0	0.0	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	15.7	16.9	16.9	19.6	18.2	18.2	2.8	2.6	2.7	2.7	2.7	2.8
LnGrp LOS	B	B	B	B	B	B	A	A	A	A	A	A
Approach Vol, veh/h		303			190			77			95	
Approach Delay, s/veh		16.8			18.3			2.7			2.7	
Approach LOS		B			B			A			A	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		34.1		10.9		34.1		10.9				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		18.0		18.0		18.0		18.0				
Max Q Clear Time (g_c+I1), s		2.5		5.1		2.5		5.5				
Green Ext Time (p_c), s		0.2		1.3		0.3		0.7				
Intersection Summary												
HCM 6th Ctrl Delay				13.6								
HCM 6th LOS				B								



























HCM 6th Signalized Intersection Summary
 18: Tejon St & Cimarron St

Existing Late PM
 03/13/2019

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	37	230	54	28	165	10	30	92	27	7	103	31
Future Volume (veh/h)	37	230	54	28	165	10	30	92	27	7	103	31
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	40	250	59	30	179	11	33	100	29	8	112	34
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	307	486	113	255	577	35	914	1179	999	929	1179	999
Arrive On Green	0.17	0.17	0.17	0.17	0.17	0.17	0.63	0.63	0.63	0.63	0.63	0.63
Sat Flow, veh/h	1193	2864	663	1070	3402	208	1242	1870	1585	1261	1870	1585
Grp Volume(v), veh/h	40	153	156	30	93	97	33	100	29	8	112	34
Grp Sat Flow(s),veh/h/ln	1193	1777	1751	1070	1777	1833	1242	1870	1585	1261	1870	1585
Q Serve(g_s), s	1.4	3.5	3.6	1.2	2.1	2.1	0.5	0.9	0.3	0.1	1.1	0.4
Cycle Q Clear(g_c), s	3.5	3.5	3.6	4.8	2.1	2.1	1.5	0.9	0.3	1.1	1.1	0.4
Prop In Lane	1.00		0.38	1.00		0.11	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	307	301	297	255	301	311	914	1179	999	929	1179	999
V/C Ratio(X)	0.13	0.51	0.52	0.12	0.31	0.31	0.04	0.08	0.03	0.01	0.09	0.03
Avail Cap(c_a), veh/h	582	711	700	501	711	733	914	1179	999	929	1179	999
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.94	0.94	0.94	0.99	0.99	0.99	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	17.9	17.0	17.0	19.2	16.4	16.4	3.6	3.2	3.1	3.5	3.3	3.1
Incr Delay (d2), s/veh	0.2	1.2	1.3	0.2	0.6	0.6	0.1	0.1	0.1	0.0	0.2	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	1.4	1.4	0.3	0.8	0.8	0.1	0.2	0.1	0.0	0.3	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	18.1	18.2	18.4	19.4	16.9	16.9	3.6	3.4	3.2	3.5	3.4	3.2
LnGrp LOS	B	B	B	B	B	B	A	A	A	A	A	A
Approach Vol, veh/h		349			220			162			154	
Approach Delay, s/veh		18.3			17.3			3.4			3.4	
Approach LOS		B			B			A			A	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		32.9		12.1		32.9		12.1				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		18.0		18.0		18.0		18.0				
Max Q Clear Time (g_c+I1), s		3.5		5.6		3.1		6.8				
Green Ext Time (p_c), s		0.6		1.5		0.6		0.8				
Intersection Summary												
HCM 6th Ctrl Delay				12.7								
HCM 6th LOS				B								

HCM 6th Signalized Intersection Summary
 21: Nevada Ave & Cimarron St

Existing Late PM
 03/13/2019

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 			 			 			 	
Traffic Volume (veh/h)	29	199	32	26	129	9	28	275	29	9	298	36
Future Volume (veh/h)	29	199	32	26	129	9	28	275	29	9	298	36
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	32	216	35	28	140	10	30	299	32	10	324	39
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	296	451	72	252	495	35	785	2320	1035	811	2087	249
Arrive On Green	0.15	0.15	0.15	0.15	0.15	0.15	0.65	0.65	0.65	0.65	0.65	0.65
Sat Flow, veh/h	1237	3069	490	1129	3366	238	1019	3554	1585	1049	3197	382
Grp Volume(v), veh/h	32	124	127	28	73	77	30	299	32	10	179	184
Grp Sat Flow(s),veh/h/ln	1237	1777	1782	1129	1777	1827	1019	1777	1585	1049	1777	1802
Q Serve(g_s), s	1.1	2.9	3.0	1.1	1.7	1.7	0.5	1.4	0.3	0.2	1.7	1.8
Cycle Q Clear(g_c), s	2.7	2.9	3.0	4.0	1.7	1.7	2.3	1.4	0.3	1.6	1.7	1.8
Prop In Lane	1.00		0.27	1.00		0.13	1.00		1.00	1.00		0.21
Lane Grp Cap(c), veh/h	296	261	262	252	261	269	785	2320	1035	811	1160	1176
V/C Ratio(X)	0.11	0.47	0.49	0.11	0.28	0.29	0.04	0.13	0.03	0.01	0.15	0.16
Avail Cap(c_a), veh/h	609	711	713	537	711	731	785	2320	1035	811	1160	1176
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.93	0.93	0.93	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	18.3	17.6	17.6	19.5	17.1	17.1	3.5	3.0	2.8	3.3	3.0	3.0
Incr Delay (d2), s/veh	0.1	1.2	1.3	0.2	0.6	0.6	0.1	0.1	0.1	0.0	0.3	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	1.1	1.2	0.3	0.6	0.7	0.1	0.3	0.1	0.0	0.4	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	18.5	18.8	18.9	19.7	17.7	17.7	3.6	3.1	2.8	3.3	3.3	3.3
LnGrp LOS	B	B	B	B	B	B	A	A	A	A	A	A
Approach Vol, veh/h		283			178			361			373	
Approach Delay, s/veh		18.8			18.0			3.1			3.3	
Approach LOS		B			B			A			A	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		33.9		11.1		33.9		11.1				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		18.0		18.0		18.0		18.0				
Max Q Clear Time (g_c+I1), s		4.3		5.0		3.8		6.0				
Green Ext Time (p_c), s		1.8		1.2		1.8		0.6				
Intersection Summary												
HCM 6th Ctrl Delay				9.1								
HCM 6th LOS				A								

Intersection												
Int Delay, s/veh	2.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↘	↗	↗	↘	↗	↗	↘	↗	↗	↘	↗	↗
Traffic Vol, veh/h	4	213	9	13	149	12	47	3	70	4	1	3
Future Vol, veh/h	4	213	9	13	149	12	47	3	70	4	1	3
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	50	-	50	50	-	50	50	-	-	25	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	4	232	10	14	162	13	51	3	76	4	1	3



























Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	175	0	0	242	0	0	350	443	116	316	440	81
Stage 1	-	-	-	-	-	-	240	240	-	190	190	-
Stage 2	-	-	-	-	-	-	110	203	-	126	250	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	1399	-	-	1322	-	-	580	508	914	613	510	963
Stage 1	-	-	-	-	-	-	742	706	-	794	742	-
Stage 2	-	-	-	-	-	-	883	732	-	865	699	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1399	-	-	1322	-	-	571	501	914	554	503	963
Mov Cap-2 Maneuver	-	-	-	-	-	-	571	501	-	554	503	-
Stage 1	-	-	-	-	-	-	740	704	-	792	734	-
Stage 2	-	-	-	-	-	-	869	724	-	787	697	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.1			0.6			10.4			10.6		
HCM LOS							B			B		

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	571	884	1399	-	-	1322	-	-	554	784
HCM Lane V/C Ratio	0.089	0.09	0.003	-	-	0.011	-	-	0.008	0.006
HCM Control Delay (s)	11.9	9.5	7.6	-	-	7.8	-	-	11.6	9.6
HCM Lane LOS	B	A	A	-	-	A	-	-	B	A
HCM 95th %tile Q(veh)	0.3	0.3	0	-	-	0	-	-	0	0

HCM 6th Signalized Intersection Summary
 29: Cascade Ave & Colorado Ave

Existing Late PM
 03/13/2019

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 			 			 			 	
Traffic Volume (veh/h)	78	197	10	8	103	71	8	74	10	25	82	63
Future Volume (veh/h)	78	197	10	8	103	71	8	74	10	25	82	63
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	85	214	11	9	112	77	9	80	11	27	89	68
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	350	615	274	305	236	151	667	1263	170	712	1496	667
Arrive On Green	0.07	0.17	0.17	0.01	0.11	0.11	0.01	0.40	0.40	0.03	0.42	0.42
Sat Flow, veh/h	1781	3554	1585	1781	2080	1328	1781	3146	424	1781	3554	1585
Grp Volume(v), veh/h	85	214	11	9	94	95	9	45	46	27	89	68
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1631	1781	1777	1794	1781	1777	1585
Q Serve(g_s), s	1.9	2.5	0.3	0.2	2.3	2.6	0.1	0.7	0.8	0.4	0.7	1.2
Cycle Q Clear(g_c), s	1.9	2.5	0.3	0.2	2.3	2.6	0.1	0.7	0.8	0.4	0.7	1.2
Prop In Lane	1.00		1.00	1.00		0.81	1.00		0.24	1.00		1.00
Lane Grp Cap(c), veh/h	350	615	274	305	202	185	667	713	720	712	1496	667
V/C Ratio(X)	0.24	0.35	0.04	0.03	0.47	0.51	0.01	0.06	0.06	0.04	0.06	0.10
Avail Cap(c_a), veh/h	416	1366	609	473	679	623	835	713	720	845	1496	667
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	16.3	17.1	16.2	18.1	19.5	19.6	8.2	8.7	8.7	7.7	8.1	8.2
Incr Delay (d2), s/veh	0.4	0.3	0.1	0.0	1.7	2.2	0.0	0.2	0.2	0.0	0.1	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	0.9	0.1	0.1	1.0	1.0	0.0	0.3	0.3	0.1	0.2	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	16.6	17.5	16.3	18.1	21.2	21.8	8.2	8.8	8.8	7.7	8.2	8.6
LnGrp LOS	B	B	B	B	C	C	A	A	A	A	A	A
Approach Vol, veh/h		310			198			100			184	
Approach Delay, s/veh		17.2			21.4			8.8			8.2	
Approach LOS		B			C			A			A	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	6.0	23.4	5.1	12.7	5.1	24.3	7.9	9.9				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	5.0	18.9	5.0	18.1	5.0	18.9	5.1	18.0				
Max Q Clear Time (g_c+I1), s	2.4	2.8	2.2	4.5	2.1	3.2	3.9	4.6				
Green Ext Time (p_c), s	0.0	0.3	0.0	1.1	0.0	0.6	0.0	0.8				
Intersection Summary												
HCM 6th Ctrl Delay			15.1									
HCM 6th LOS			B									

APPENDIX C. TOTAL TRAFFIC LOS WORKSHEETS

HCM 6th Signalized Intersection Summary
1: Sahwatch St & Colorado Ave

Switchbacks Stadium
Switchbacks Match Early PM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗	↘	↖	↗	↘	↖	↗	↘	↖	↗	↘
Traffic Volume (veh/h)	10	435	80	515	315	95	30	70	35	10	0	15
Future Volume (veh/h)	10	435	80	515	315	95	30	70	35	10	0	15
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	11	473	87	560	342	103	33	76	38	11	0	16
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	727	2612	1165	651	2612	1165	307	210	105	226	0	282
Arrive On Green	0.74	0.74	0.74	0.74	0.74	0.74	0.18	0.18	0.18	0.18	0.00	0.18
Sat Flow, veh/h	945	3554	1585	850	3554	1585	1397	1176	588	1279	0	1585
Grp Volume(v), veh/h	11	473	87	560	342	103	33	0	114	11	0	16
Grp Sat Flow(s),veh/h/ln	945	1777	1585	850	1777	1585	1397	0	1764	1279	0	1585
Q Serve(g_s), s	0.4	4.2	1.6	63.4	2.9	1.9	2.1	0.0	5.9	0.8	0.0	0.9
Cycle Q Clear(g_c), s	4.4	4.2	1.6	68.7	2.9	1.9	2.9	0.0	5.9	6.5	0.0	0.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.33	1.00		1.00
Lane Grp Cap(c), veh/h	727	2612	1165	651	2612	1165	307	0	314	226	0	282
V/C Ratio(X)	0.02	0.18	0.07	0.86	0.13	0.09	0.11	0.00	0.36	0.05	0.00	0.06
Avail Cap(c_a), veh/h	875	3166	1412	783	3166	1412	307	0	314	226	0	282
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	4.8	4.2	3.9	15.2	4.0	3.9	36.6	0.0	37.5	40.3	0.0	35.4
Incr Delay (d2), s/veh	0.0	0.0	0.0	8.4	0.0	0.0	0.7	0.0	3.2	0.4	0.0	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	1.3	0.4	11.7	0.9	0.5	0.8	0.0	2.8	0.3	0.0	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	4.8	4.2	3.9	23.5	4.1	3.9	37.3	0.0	40.7	40.7	0.0	35.8
LnGrp LOS	A	A	A	C	A	A	D	A	D	D	A	D
Approach Vol, veh/h		571			1005			147				27
Approach Delay, s/veh		4.2			14.9			39.9				37.8
Approach LOS		A			B			D				D
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		23.0		81.5		23.0		81.5				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		18.5		92.5		18.5		92.5				
Max Q Clear Time (g_c+I1), s		7.9		6.4		8.5		70.7				
Green Ext Time (p_c), s		0.4		4.0		0.0		7.0				
Intersection Summary												
HCM 6th Ctrl Delay				13.9								
HCM 6th LOS				B								

HCM 6th Signalized Intersection Summary

2: Cascade Ave & Colorado Ave

Switchbacks Stadium
Switchbacks Match Early PM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	90	365	25	45	470	70	25	75	10	40	335	430
Future Volume (veh/h)	90	365	25	45	470	70	25	75	10	40	335	430
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	98	397	27	49	511	76	27	82	11	43	364	467
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	221	822	367	268	650	96	430	1629	215	790	1864	832
Arrive On Green	0.06	0.23	0.23	0.04	0.21	0.21	0.03	0.52	0.52	0.03	0.52	0.52
Sat Flow, veh/h	1781	3554	1585	1781	3105	460	1781	3157	416	1781	3554	1585
Grp Volume(v), veh/h	98	397	27	49	292	295	27	45	48	43	364	467
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1788	1781	1777	1796	1781	1777	1585
Q Serve(g_s), s	4.2	9.6	1.3	2.1	15.5	15.6	0.7	1.3	1.3	1.1	5.4	19.8
Cycle Q Clear(g_c), s	4.2	9.6	1.3	2.1	15.5	15.6	0.7	1.3	1.3	1.1	5.4	19.8
Prop In Lane	1.00		1.00	1.00		0.26	1.00		0.23	1.00		1.00
Lane Grp Cap(c), veh/h	221	822	367	268	372	374	430	917	927	790	1864	832
V/C Ratio(X)	0.44	0.48	0.07	0.18	0.78	0.79	0.06	0.05	0.05	0.05	0.20	0.56
Avail Cap(c_a), veh/h	321	1371	612	318	597	600	481	917	927	826	1864	832
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	29.6	33.2	30.0	29.4	37.3	37.4	10.7	12.0	12.0	10.3	12.6	16.0
Incr Delay (d2), s/veh	1.4	0.4	0.1	0.3	3.7	3.8	0.1	0.1	0.1	0.0	0.2	2.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.9	4.2	0.5	0.9	7.0	7.1	0.3	0.5	0.5	0.4	2.1	7.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	31.0	33.6	30.1	29.7	41.0	41.1	10.8	12.1	12.1	10.3	12.8	18.7
LnGrp LOS	C	C	C	C	D	D	B	B	B	B	B	B
Approach Vol, veh/h		522			636			120			874	
Approach Delay, s/veh		33.0			40.2			11.8			15.8	
Approach LOS		C			D			B			B	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	8.0	56.0	8.2	27.6	7.1	56.8	10.4	25.4				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	5.5	51.5	6.5	38.5	5.5	51.5	11.5	33.5				
Max Q Clear Time (g_c+1), s	13.5	3.3	4.1	11.6	2.7	21.8	6.2	17.6				
Green Ext Time (p_c), s	0.0	0.5	0.0	2.8	0.0	4.5	0.1	3.3				
Intersection Summary												
HCM 6th Ctrl Delay											27.0	
HCM 6th LOS											C	

HCM 6th Signalized Intersection Summary
 3: Sierra Madre St & Cimarron St

Switchbacks Stadium
 Switchbacks Match Early PM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	70	1385	55	20	420	5	30	5	10	5	5	20
Future Volume (veh/h)	70	1385	55	20	420	5	30	5	10	5	5	20
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	76	1505	60	22	457	5	33	5	11	5	5	22
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	761	2680	1195	249	2716	30	277	89	195	287	52	227
Arrive On Green	0.75	0.75	0.75	1.00	1.00	1.00	0.17	0.17	0.17	0.17	0.17	0.17
Sat Flow, veh/h	930	3554	1585	329	3601	39	1383	520	1144	1397	302	1329
Grp Volume(v), veh/h	76	1505	60	22	225	237	33	0	16	5	0	27
Grp Sat Flow(s),veh/h/ln	930	1777	1585	329	1777	1863	1383	0	1664	1397	0	1631
Q Serve(g_s), s	2.6	21.7	1.2	2.1	0.0	0.0	2.5	0.0	1.0	0.4	0.0	1.7
Cycle Q Clear(g_c), s	2.6	21.7	1.2	23.8	0.0	0.0	4.1	0.0	1.0	1.3	0.0	1.7
Prop In Lane	1.00		1.00	1.00		0.02	1.00		0.69	1.00		0.81
Lane Grp Cap(c), veh/h	761	2680	1195	249	1340	1405	277	0	284	287	0	279
V/C Ratio(X)	0.10	0.56	0.05	0.09	0.17	0.17	0.12	0.00	0.06	0.02	0.00	0.10
Avail Cap(c_a), veh/h	761	2680	1195	249	1340	1405	277	0	284	287	0	279
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	1.00	1.00	0.99	0.99	0.99	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	3.9	6.3	3.8	2.8	0.0	0.0	43.7	0.0	41.7	42.2	0.0	41.9
Incr Delay (d2), s/veh	0.3	0.9	0.1	0.7	0.3	0.3	0.9	0.0	0.4	0.1	0.0	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln0.5		7.2	0.4	0.1	0.1	0.1	0.9	0.0	0.4	0.1	0.0	0.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	4.2	7.1	3.8	3.5	0.3	0.3	44.6	0.0	42.0	42.3	0.0	42.6
LnGrp LOS	A	A	A	A	A	A	D	A	D	D	A	D
Approach Vol, veh/h		1641			484			49				32
Approach Delay, s/veh		6.9			0.4			43.7				42.6
Approach LOS		A			A			D				D
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		95.0		25.0		95.0		25.0				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		90.5		20.5		90.5		20.5				
Max Q Clear Time (g_c+I1), s		23.7		3.7		25.8		6.1				
Green Ext Time (p_c), s		21.2		0.1		3.7		0.1				
Intersection Summary												
HCM 6th Ctrl Delay											6.8	
HCM 6th LOS											A	

HCM 6th Signalized Intersection Summary
 4: Sahwatch St & Cimarron St

Switchbacks Stadium
 Switchbacks Match Early PM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	455	850	100	5	370	30	20	55	5	70	20	50
Future Volume (veh/h)	455	850	100	5	370	30	20	55	5	70	20	50
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	495	924	109	5	402	33	22	60	5	76	22	54
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	795	2468	291	481	2564	210	251	288	244	229	288	244
Arrive On Green	1.00	1.00	1.00	1.00	1.00	1.00	0.15	0.15	0.15	0.15	0.15	0.15
Sat Flow, veh/h	954	3202	378	546	3326	272	1323	1870	1585	1337	1870	1585
Grp Volume(v), veh/h	495	513	520	5	214	221	22	60	5	76	22	54
Grp Sat Flow(s),veh/h/ln	954	1777	1802	546	1777	1821	1323	1870	1585	1337	1870	1585
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	0.0	1.7	3.4	0.3	6.3	1.2	3.6
Cycle Q Clear(g_c), s	0.0	0.0	0.0	0.0	0.0	0.0	2.9	3.4	0.3	9.7	1.2	3.6
Prop In Lane	1.00		0.21	1.00		0.15	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	795	1370	1389	481	1370	1404	251	288	244	229	288	244
V/C Ratio(X)	0.62	0.37	0.37	0.01	0.16	0.16	0.09	0.21	0.02	0.33	0.08	0.22
Avail Cap(c_a), veh/h	795	1370	1389	481	1370	1404	251	288	244	229	288	244
HCM Platoon Ratio	2.00	2.00	2.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	0.81	0.81	0.81	0.99	0.99	0.99	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	44.7	44.3	43.1	48.6	43.4	44.4
Incr Delay (d2), s/veh	3.0	0.6	0.6	0.0	0.2	0.2	0.7	1.6	0.2	3.9	0.5	2.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/lr0.7	0.2	0.2	0.0	0.1	0.1	0.1	0.6	1.7	0.1	2.4	0.6	1.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	3.0	0.6	0.6	0.0	0.2	0.2	45.4	46.0	43.2	52.5	44.0	46.5
LnGrp LOS	A	A	A	A	A	A	D	D	D	D	D	D
Approach Vol, veh/h		1528			440			87			152	
Approach Delay, s/veh		1.4			0.2			45.7			49.1	
Approach LOS		A			A			D			D	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		97.0		23.0		97.0		23.0				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		92.5		18.5		92.5		18.5				
Max Q Clear Time (g_c+l1), s		2.0		11.7		2.0		5.4				
Green Ext Time (p_c), s		15.3		0.2		3.0		0.2				
Intersection Summary												
HCM 6th Ctrl Delay				6.2								
HCM 6th LOS				A								

HCM 6th Signalized Intersection Summary
5: Cascade Ave & Cimarron St

Switchbacks Stadium
Switchbacks Match Early PM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↘	↕		↘	↕		↘	↕	↘	↘	↕	↘
Traffic Volume (veh/h)	205	685	30	10	305	15	40	70	35	25	115	65
Future Volume (veh/h)	205	685	30	10	305	15	40	70	35	25	115	65
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	223	745	33	11	332	16	43	76	38	27	125	71
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	779	2412	107	543	2402	115	299	814	363	331	814	363
Arrive On Green	1.00	1.00	1.00	1.00	1.00	1.00	0.23	0.23	0.23	0.23	0.23	0.23
Sat Flow, veh/h	1033	3466	153	694	3452	166	1187	3554	1585	1279	3554	1585
Grp Volume(v), veh/h	223	382	396	11	170	178	43	76	38	27	125	71
Grp Sat Flow(s),veh/h/ln	1033	1777	1843	694	1777	1841	1187	1777	1585	1279	1777	1585
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	0.0	3.6	2.0	2.3	2.0	3.4	4.3
Cycle Q Clear(g_c), s	0.0	0.0	0.0	0.0	0.0	0.0	7.0	2.0	2.3	4.1	3.4	4.3
Prop In Lane	1.00		0.08	1.00		0.09	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	779	1236	1282	543	1236	1281	299	814	363	331	814	363
V/C Ratio(X)	0.29	0.31	0.31	0.02	0.14	0.14	0.14	0.09	0.10	0.08	0.15	0.20
Avail Cap(c_a), veh/h	779	1236	1282	543	1236	1281	299	814	363	331	814	363
HCM Platoon Ratio	2.00	2.00	2.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	0.93	0.93	0.93	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	39.7	36.4	36.5	38.0	37.0	37.3
Incr Delay (d2), s/veh	0.9	0.6	0.6	0.1	0.2	0.2	1.0	0.2	0.6	0.5	0.4	1.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.2	0.2	0.0	0.1	0.1	1.1	0.9	0.9	0.7	1.5	1.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.9	0.6	0.6	0.1	0.2	0.2	40.7	36.7	37.1	38.5	37.4	38.5
LnGrp LOS	A	A	A	A	A	A	D	D	D	D	D	D
Approach Vol, veh/h		1001			359			157			223	
Approach Delay, s/veh		0.7			0.2			37.9			37.9	
Approach LOS		A			A			D			D	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		88.0		32.0		88.0		32.0				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		83.5		27.5		83.5		27.5				
Max Q Clear Time (g_c+I1), s		2.0		6.3		2.0		9.0				
Green Ext Time (p_c), s		7.4		1.0		2.3		0.6				
Intersection Summary												
HCM 6th Ctrl Delay				8.7								
HCM 6th LOS				A								

HCM 6th Signalized Intersection Summary
6: Tejon St & Cimarron St

Switchbacks Stadium
Switchbacks Match Early PM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	235	705	60	50	295	20	30	180	45	25	135	30
Future Volume (veh/h)	235	705	60	50	295	20	30	180	45	25	135	30
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	255	766	65	54	321	22	33	196	49	27	147	33
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	730	2141	182	486	2180	149	322	522	442	281	522	442
Arrive On Green	1.00	1.00	1.00	1.00	1.00	1.00	0.28	0.28	0.28	0.28	0.28	0.28
Sat Flow, veh/h	1038	3315	281	660	3376	230	1204	1870	1585	1135	1870	1585
Grp Volume(v), veh/h	255	410	421	54	168	175	33	196	49	27	147	33
Grp Sat Flow(s),veh/h/ln	1038	1777	1820	660	1777	1829	1204	1870	1585	1135	1870	1585
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	0.0	2.6	10.1	2.8	2.4	7.4	1.8
Cycle Q Clear(g_c), s	0.0	0.0	0.0	0.0	0.0	0.0	10.0	10.1	2.8	12.5	7.4	1.8
Prop In Lane	1.00		0.15	1.00		0.13	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	730	1148	1175	486	1148	1181	322	522	442	281	522	442
V/C Ratio(X)	0.35	0.36	0.36	0.11	0.15	0.15	0.10	0.38	0.11	0.10	0.28	0.07
Avail Cap(c_a), veh/h	730	1148	1175	486	1148	1181	322	522	442	281	522	442
HCM Platoon Ratio	2.00	2.00	2.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	0.96	0.96	0.96	0.99	0.99	0.99	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	37.8	34.8	32.2	39.9	33.8	31.8
Incr Delay (d2), s/veh	1.3	0.8	0.8	0.5	0.3	0.3	0.6	2.1	0.5	0.7	1.3	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/lr	0.3	0.3	0.3	0.1	0.1	0.1	0.8	4.9	1.1	0.7	3.6	0.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	1.3	0.8	0.8	0.5	0.3	0.3	38.4	36.9	32.7	40.5	35.2	32.2
LnGrp LOS	A	A	A	A	A	A	D	D	C	D	D	C
Approach Vol, veh/h		1086			397			278			207	
Approach Delay, s/veh		0.9			0.3			36.3			35.4	
Approach LOS		A			A			D			D	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		82.0		38.0		82.0		38.0				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		77.5		33.5		77.5		33.5				
Max Q Clear Time (g_c+I1), s		2.0		14.5		2.0		12.1				
Green Ext Time (p_c), s		8.3		0.9		2.8		1.3				
Intersection Summary												
HCM 6th Ctrl Delay				9.4								
HCM 6th LOS				A								

HCM 6th Signalized Intersection Summary
 7: Nevada Ave & Cimarron St

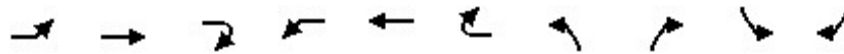
Switchbacks Stadium
 Switchbacks Match Early PM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↶	↶↷		↶	↶↷		↶	↶↷	↶	↶	↶↷	
Traffic Volume (veh/h)	270	425	70	60	285	15	55	605	40	35	495	60
Future Volume (veh/h)	270	425	70	60	285	15	55	605	40	35	495	60
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	293	462	76	65	310	16	60	658	43	38	538	65
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	636	1796	294	480	2020	104	226	1199	535	199	1078	130
Arrive On Green	0.39	0.39	0.39	0.59	0.59	0.59	0.34	0.34	0.34	0.34	0.34	0.34
Sat Flow, veh/h	1054	3057	500	867	3439	177	816	3554	1585	745	3193	385
Grp Volume(v), veh/h	293	267	271	65	160	166	60	658	43	38	299	304
Grp Sat Flow(s),veh/h/ln	1054	1777	1780	867	1777	1839	816	1777	1585	745	1777	1801
Q Serve(g_s), s	26.0	12.2	12.3	5.0	4.9	4.9	7.6	18.1	2.2	5.2	16.1	16.2
Cycle Q Clear(g_c), s	30.9	12.2	12.3	17.3	4.9	4.9	23.8	18.1	2.2	23.3	16.1	16.2
Prop In Lane	1.00		0.28	1.00		0.10	1.00		1.00	1.00		0.21
Lane Grp Cap(c), veh/h	636	1044	1046	480	1044	1080	226	1199	535	199	600	608
V/C Ratio(X)	0.46	0.26	0.26	0.14	0.15	0.15	0.27	0.55	0.08	0.19	0.50	0.50
Avail Cap(c_a), veh/h	636	1044	1046	480	1044	1080	226	1199	535	199	600	608
HCM Platoon Ratio	0.67	0.67	0.67	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	26.3	18.7	18.7	17.2	11.2	11.2	41.2	32.3	27.1	41.8	31.7	31.7
Incr Delay (d2), s/veh	2.3	0.6	0.6	0.6	0.3	0.3	2.9	1.8	0.3	2.1	2.9	2.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.3	5.6	5.7	1.1	2.0	2.1	1.7	8.1	0.9	1.1	7.4	7.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	28.6	19.3	19.3	17.8	11.5	11.5	44.0	34.1	27.4	43.9	34.6	34.6
LnGrp LOS	C	B	B	B	B	B	D	C	C	D	C	C
Approach Vol, veh/h		831			391			761			641	
Approach Delay, s/veh		22.6			12.6			34.5			35.2	
Approach LOS		C			B			C			D	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		75.0		45.0		75.0		45.0				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		70.5		40.5		70.5		40.5				
Max Q Clear Time (g_c+I1), s		32.9		25.3		19.3		25.8				
Green Ext Time (p_c), s		5.3		3.5		2.5		4.4				
Intersection Summary												
HCM 6th Ctrl Delay					27.6							
HCM 6th LOS					C							

Lanes, Volumes, Timings
8: I-25 & Cimarron St

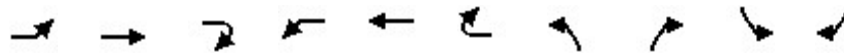
Switchbacks Stadium
Switchbacks Match Early PM



Lane Group	EBL	EBT	EBR2	WBL	WBT	WBR2	NBL	NBR2	SBL	SBR2
Lane Configurations										
Traffic Volume (vph)	725	590	785	55	240	145	600	390	645	610
Future Volume (vph)	725	590	785	55	240	145	600	390	645	610
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	500			380			550		500	
Storage Lanes	2			1			0		1	
Taper Length (ft)	25			25			25		25	
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95	1.00	0.94	1.00	0.97	1.00
Frt			0.850				0.850		0.850	0.850
Flt Protected	0.950			0.950			0.950		0.950	
Satd. Flow (prot)	3433	3539	1583	1770	3539	1583	4990	1583	3433	1583
Flt Permitted	0.950			0.950			0.950		0.950	
Satd. Flow (perm)	3433	3539	1583	1770	3539	1583	4990	1583	3433	1583
Right Turn on Red			Yes			Yes		Yes		Yes
Satd. Flow (RTOR)			853			158		232		535
Link Speed (mph)		30			30					
Link Distance (ft)		655			846					
Travel Time (s)		14.9			19.2					
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	788	641	853	60	261	158	652	424	701	663
Shared Lane Traffic (%)										
Lane Group Flow (vph)	788	641	853	60	261	158	652	424	701	663
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Right	Left	Right
Median Width(ft)		24			24					
Link Offset(ft)		0			0					
Crosswalk Width(ft)		16			16					
Two way Left Turn Lane										
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15	9	15	9
Number of Detectors	1	2	1	1	2	1	1	1	1	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Right	Left	Right
Leading Detector (ft)	20	100	20	20	100	20	20	20	20	20
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20	20	6	20	20	20	20	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel										
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94					
Detector 2 Size(ft)		6			6					
Detector 2 Type		Cl+Ex			Cl+Ex					
Detector 2 Channel										
Detector 2 Extend (s)		0.0			0.0					
Turn Type	Prot	NA	Free	Prot	NA	Perm	Prot	Free	Prot	Free
Protected Phases	7	4		3	8		5		1	
Permitted Phases			Free			8		Free		Free

Lanes, Volumes, Timings
8: I-25 & Cimarron St

Switchbacks Stadium
Switchbacks Match Early PM

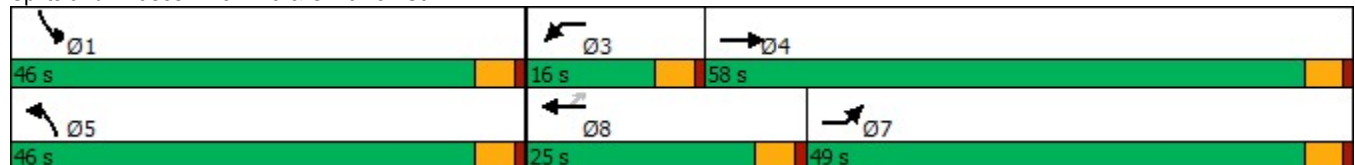


Lane Group	EBL	EBT	EBR2	WBL	WBT	WBR2	NBL	NBR2	SBL	SBR2
Detector Phase	7	4		3	8	8	5		1	
Switch Phase										
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	5.0		5.0	
Minimum Split (s)	9.5	22.5		9.5	22.5	22.5	9.5		9.5	
Total Split (s)	49.0	58.0		16.0	25.0	25.0	46.0		46.0	
Total Split (%)	40.8%	48.3%		13.3%	20.8%	20.8%	38.3%		38.3%	
Maximum Green (s)	44.5	53.5		11.5	20.5	20.5	41.5		41.5	
Yellow Time (s)	3.5	3.5		3.5	3.5	3.5	3.5		3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0		1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0		0.0	
Total Lost Time (s)	4.5	4.5		4.5	4.5	4.5	4.5		4.5	
Lead/Lag	Lag	Lag		Lead	Lead	Lead				
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes				
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0		3.0	
Recall Mode	None	None		None	None	None	None		None	
Walk Time (s)		7.0			7.0	7.0				
Flash Dont Walk (s)		11.0			11.0	11.0				
Pedestrian Calls (#/hr)		0			0	0				
Act Effct Green (s)	33.8	40.9	120.0	9.4	14.5	14.5	58.2	120.0	58.2	120.0
Actuated g/C Ratio	0.28	0.34	1.00	0.08	0.12	0.12	0.48	1.00	0.48	1.00
v/c Ratio	0.82	0.53	0.54	0.43	0.61	0.48	0.27	0.27	0.42	0.42
Control Delay	47.2	33.4	1.3	58.7	54.3	15.9	20.0	0.4	22.5	0.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	47.2	33.4	1.3	58.7	54.3	15.9	20.0	0.4	22.5	0.8
LOS	D	C	A	E	D	B	B	A	C	A
Approach Delay		26.2			42.2					
Approach LOS		C			D					

Intersection Summary

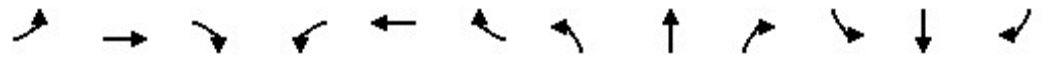
Area Type: Other
 Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 116 (97%), Referenced to phase 2: and 6:, Start of Green
 Natural Cycle: 65
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.82
 Intersection Signal Delay: 21.0
 Intersection LOS: C
 Intersection Capacity Utilization 57.0%
 ICU Level of Service B
 Analysis Period (min) 15

Splits and Phases: 8: I-25 & Cimarron St



HCM 6th Signalized Intersection Summary
 1: Sahwatch St & Colorado Ave

Switchbacks Stadium
 Switchbacks Match Late PM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗	↘	↖	↗	↘	↖	↗	↘	↖	↗	↘
Traffic Volume (veh/h)	5	215	10	15	220	10	95	5	570	75	70	10
Future Volume (veh/h)	5	215	10	15	220	10	95	5	570	75	70	10
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	5	234	11	16	239	11	103	5	620	82	76	11
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	116	382	170	118	382	170	1114	10	1273	615	1292	187
Arrive On Green	0.11	0.11	0.11	0.11	0.11	0.11	0.81	0.81	0.81	0.81	0.81	0.81
Sat Flow, veh/h	1130	3554	1585	1135	3554	1585	1310	13	1574	800	1598	231
Grp Volume(v), veh/h	5	234	11	16	239	11	103	0	625	82	0	87
Grp Sat Flow(s),veh/h/ln	1130	1777	1585	1135	1777	1585	1310	0	1587	800	0	1829
Q Serve(g_s), s	0.5	6.7	0.7	1.5	6.9	0.7	1.8	0.0	13.3	3.9	0.0	1.0
Cycle Q Clear(g_c), s	7.3	6.7	0.7	8.2	6.9	0.7	2.9	0.0	13.3	17.2	0.0	1.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.99	1.00		0.13
Lane Grp Cap(c), veh/h	116	382	170	118	382	170	1114	0	1283	615	0	1479
V/C Ratio(X)	0.04	0.61	0.06	0.14	0.63	0.06	0.09	0.00	0.49	0.13	0.00	0.06
Avail Cap(c_a), veh/h	253	814	363	256	814	363	1114	0	1283	615	0	1479
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	49.2	45.6	42.9	49.5	45.7	42.9	2.3	0.0	3.2	5.9	0.0	2.1
Incr Delay (d2), s/veh	0.2	1.6	0.2	0.5	1.7	0.2	0.2	0.0	1.3	0.5	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	3.0	0.3	0.4	3.1	0.3	0.4	0.0	3.4	0.7	0.0	0.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	49.4	47.2	43.1	50.1	47.4	43.1	2.5	0.0	4.6	6.4	0.0	2.1
LnGrp LOS	D	D	D	D	D	D	A	A	A	A	A	A
Approach Vol, veh/h		250			266			728				169
Approach Delay, s/veh		47.1			47.4			4.3				4.2
Approach LOS		D			D			A				A
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		91.0		16.0		91.0		16.0				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		86.5		24.5		86.5		24.5				
Max Q Clear Time (g_c+I1), s		15.3		9.3		19.2		10.2				
Green Ext Time (p_c), s		6.2		1.3		1.1		1.3				

Intersection Summary		
HCM 6th Ctrl Delay		20.0
HCM 6th LOS		B

HCM 6th Signalized Intersection Summary
2: Cascade Ave & Colorado Ave

Switchbacks Stadium
Switchbacks Match Late PM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	380	460	10	10	170	75	15	265	30	25	80	65
Future Volume (veh/h)	380	460	10	10	170	75	15	265	30	25	80	65
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	413	500	11	11	185	82	16	288	33	27	87	71
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	562	1206	538	230	293	125	584	1202	136	479	1363	608
Arrive On Green	0.23	0.34	0.34	0.01	0.12	0.12	0.02	0.37	0.37	0.03	0.38	0.38
Sat Flow, veh/h	1781	3554	1585	1781	2427	1034	1781	3216	365	1781	3554	1585
Grp Volume(v), veh/h	413	500	11	11	133	134	16	158	163	27	87	71
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1684	1781	1777	1805	1781	1777	1585
Q Serve(g_s), s	13.8	8.0	0.3	0.4	5.3	5.6	0.4	4.5	4.6	0.7	1.1	2.1
Cycle Q Clear(g_c), s	13.8	8.0	0.3	0.4	5.3	5.6	0.4	4.5	4.6	0.7	1.1	2.1
Prop In Lane	1.00		1.00	1.00		0.61	1.00		0.20	1.00		1.00
Lane Grp Cap(c), veh/h	562	1206	538	230	215	204	584	664	674	479	1363	608
V/C Ratio(X)	0.74	0.41	0.02	0.05	0.62	0.66	0.03	0.24	0.24	0.06	0.06	0.12
Avail Cap(c_a), veh/h	1225	2969	1324	363	567	538	707	664	674	585	1363	608
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	19.0	18.7	16.2	27.7	30.8	30.9	13.7	15.9	15.9	13.5	14.3	14.6
Incr Delay (d2), s/veh	1.9	0.2	0.0	0.1	2.9	3.6	0.0	0.8	0.8	0.0	0.1	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/lr	5.5	3.1	0.1	0.2	2.4	2.4	0.2	1.9	1.9	0.3	0.4	0.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	20.9	18.9	16.2	27.8	33.7	34.4	13.7	16.7	16.7	13.5	14.4	15.0
LnGrp LOS	C	B	B	C	C	C	B	B	B	B	B	B
Approach Vol, veh/h		924			278			337			185	
Approach Delay, s/veh		19.8			33.8			16.6			14.5	
Approach LOS		B			C			B			B	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	6.6	32.0	5.5	29.5	5.9	32.7	21.6	13.4				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	6.5	27.5	6.5	61.5	6.5	27.5	44.5	23.5				
Max Q Clear Time (g_c+I), s	12.5	6.6	2.4	10.0	2.4	4.1	15.8	7.6				
Green Ext Time (p_c), s	0.0	1.8	0.0	3.9	0.0	0.7	1.3	1.3				

Intersection Summary

HCM 6th Ctrl Delay	20.8
HCM 6th LOS	C

HCM 6th Signalized Intersection Summary
 3: Sierra Madre St & Cimarron St

Switchbacks Stadium
 Switchbacks Match Late PM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	260	15	5	1200	0	40	0	15	5	5	70
Future Volume (veh/h)	5	260	15	5	1200	0	40	0	15	5	5	70
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	5	283	16	5	1304	0	43	0	16	5	5	76
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	368	2591	1156	822	2591	0	315	366	310	334	366	310
Arrive On Green	0.73	0.73	0.73	1.00	1.00	0.00	0.20	0.00	0.20	0.20	0.20	0.20
Sat Flow, veh/h	422	3554	1585	1080	3647	0	1317	1870	1585	1397	1870	1585
Grp Volume(v), veh/h	5	283	16	5	1304	0	43	0	16	5	5	76
Grp Sat Flow(s),veh/h/ln	422	1777	1585	1080	1777	0	1317	1870	1585	1397	1870	1585
Q Serve(g_s), s	0.4	2.8	0.3	0.0	0.0	0.0	3.3	0.0	1.0	0.3	0.3	4.9
Cycle Q Clear(g_c), s	0.4	2.8	0.3	2.8	0.0	0.0	3.5	0.0	1.0	0.3	0.3	4.9
Prop In Lane	1.00		1.00	1.00		0.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	368	2591	1156	822	2591	0	315	366	310	334	366	310
V/C Ratio(X)	0.01	0.11	0.01	0.01	0.50	0.00	0.14	0.00	0.05	0.01	0.01	0.24
Avail Cap(c_a), veh/h	368	2591	1156	822	2591	0	315	366	310	334	366	310
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.81	0.81	0.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	4.5	4.8	4.4	0.0	0.0	0.0	40.3	0.0	39.2	38.9	38.9	40.8
Incr Delay (d2), s/veh	0.1	0.1	0.0	0.0	0.6	0.0	0.9	0.0	0.3	0.1	0.1	1.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/lr0.0	1.0	1.0	0.1	0.0	0.2	0.0	1.1	0.0	0.4	0.1	0.1	2.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	4.5	4.9	4.5	0.1	0.6	0.0	41.2	0.0	39.5	39.0	39.0	42.6
LnGrp LOS	A	A	A	A	A	A	D	A	D	D	D	D
Approach Vol, veh/h		304			1309			59				86
Approach Delay, s/veh		4.8			0.6			40.8				42.2
Approach LOS		A			A			D				D
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		92.0		28.0		92.0		28.0				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		87.5		23.5		87.5		23.5				
Max Q Clear Time (g_c+I1), s		4.8		6.9		4.8		5.5				
Green Ext Time (p_c), s		2.2		0.2		15.2		0.1				
Intersection Summary												
HCM 6th Ctrl Delay				4.7								
HCM 6th LOS				A								

HCM 6th Signalized Intersection Summary
4: Sahwatch St & Cimarron St

Switchbacks Stadium
Switchbacks Match Late PM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	265	10	5	610	55	95	15	5	35	60	495
Future Volume (veh/h)	10	265	10	5	610	55	95	15	5	35	60	495
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	11	288	11	5	663	60	103	16	5	38	65	538
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	237	1207	46	401	1140	103	327	791	247	859	101	833
Arrive On Green	0.69	0.69	0.69	0.69	0.69	0.69	0.58	0.58	0.58	0.58	0.58	0.58
Sat Flow, veh/h	730	3490	133	1080	3296	298	816	1366	427	1391	174	1438
Grp Volume(v), veh/h	11	146	153	5	357	366	103	0	21	38	0	603
Grp Sat Flow(s),veh/h/ln	730	1777	1846	1080	1777	1817	816	0	1793	1391	0	1612
Q Serve(g_s), s	1.0	3.6	3.7	0.2	12.4	12.5	11.6	0.0	0.6	1.4	0.0	30.2
Cycle Q Clear(g_c), s	13.4	3.6	3.7	3.9	12.4	12.5	41.8	0.0	0.6	2.0	0.0	30.2
Prop In Lane	1.00		0.07	1.00		0.16	1.00		0.24	1.00		0.89
Lane Grp Cap(c), veh/h	237	614	639	401	614	628	327	0	1039	859	0	933
V/C Ratio(X)	0.05	0.24	0.24	0.01	0.58	0.58	0.31	0.00	0.02	0.04	0.00	0.65
Avail Cap(c_a), veh/h	237	614	639	401	614	628	327	0	1039	859	0	933
HCM Platoon Ratio	2.00	2.00	2.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	1.00	1.00	0.97	0.97	0.97	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	17.5	12.7	12.7	13.4	14.0	14.0	31.0	0.0	10.8	11.2	0.0	17.0
Incr Delay (d2), s/veh	0.4	0.9	0.9	0.1	3.9	3.8	2.5	0.0	0.0	0.1	0.0	3.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/lr0.2	0.2	1.5	1.6	0.1	4.2	4.3	2.5	0.0	0.2	0.5	0.0	11.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	17.9	13.6	13.6	13.4	17.9	17.8	33.6	0.0	10.8	11.3	0.0	20.4
LnGrp LOS	B	B	B	B	B	B	C	A	B	B	A	C
Approach Vol, veh/h		310			728			124			641	
Approach Delay, s/veh		13.7			17.8			29.7			19.9	
Approach LOS		B			B			C			B	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		46.0		74.0		46.0		74.0				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		41.5		69.5		41.5		69.5				
Max Q Clear Time (g_c+I1), s		15.4		32.2		14.5		43.8				
Green Ext Time (p_c), s		1.8		5.4		4.9		0.7				
Intersection Summary												
HCM 6th Ctrl Delay				18.7								
HCM 6th LOS				B								

HCM 6th Signalized Intersection Summary
5: Cascade Ave & Cimarron St

Switchbacks Stadium
Switchbacks Match Late PM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↖↗		↖	↖↗		↖	↖↗	↖	↖	↖↗	↖
Traffic Volume (veh/h)	15	255	30	20	415	5	30	85	25	10	65	225
Future Volume (veh/h)	15	255	30	20	415	5	30	85	25	10	65	225
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	16	277	33	22	451	5	33	92	27	11	71	245
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	450	1401	165	514	1575	17	567	1732	773	663	1732	773
Arrive On Green	0.88	0.88	0.88	0.88	0.88	0.88	0.49	0.49	0.49	0.49	0.49	0.49
Sat Flow, veh/h	935	3201	378	1069	3600	40	1064	3554	1585	1273	3554	1585
Grp Volume(v), veh/h	16	153	157	22	222	234	33	92	27	11	71	245
Grp Sat Flow(s),veh/h/ln	935	1777	1802	1069	1777	1863	1064	1777	1585	1273	1777	1585
Q Serve(g_s), s	0.4	1.6	1.6	0.4	2.5	2.5	2.0	1.6	1.1	0.6	1.3	11.2
Cycle Q Clear(g_c), s	2.9	1.6	1.6	2.0	2.5	2.5	3.3	1.6	1.1	2.2	1.3	11.2
Prop In Lane	1.00		0.21	1.00		0.02	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	450	777	789	514	777	815	567	1732	773	663	1732	773
V/C Ratio(X)	0.04	0.20	0.20	0.04	0.29	0.29	0.06	0.05	0.03	0.02	0.04	0.32
Avail Cap(c_a), veh/h	450	777	789	514	777	815	567	1732	773	663	1732	773
HCM Platoon Ratio	2.00	2.00	2.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.98	0.98	0.98	0.98	0.98	0.98	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	4.6	4.3	4.3	4.5	4.4	4.4	16.9	16.2	16.0	16.8	16.1	18.6
Incr Delay (d2), s/veh	0.1	0.6	0.6	0.2	0.9	0.9	0.2	0.1	0.1	0.0	0.0	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln0.1	0.7	0.7	0.1	1.0	1.0	1.0	0.5	0.7	0.4	0.2	0.5	4.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	4.8	4.9	4.9	4.6	5.3	5.2	17.1	16.2	16.1	16.8	16.1	19.7
LnGrp LOS	A	A	A	A	A	A	B	B	B	B	B	B
Approach Vol, veh/h		326			478			152			327	
Approach Delay, s/veh		4.9			5.2			16.4			18.8	
Approach LOS		A			A			B			B	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		57.0		63.0		57.0		63.0				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		52.5		58.5		52.5		58.5				
Max Q Clear Time (g_c+I1), s		4.9		13.2		4.5		5.3				
Green Ext Time (p_c), s		2.1		1.4		3.1		0.9				
Intersection Summary												
HCM 6th Ctrl Delay				9.9								
HCM 6th LOS				A								

HCM 6th Signalized Intersection Summary
6: Tejon St & Cimarron St

Switchbacks Stadium
Switchbacks Match Late PM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	35	240	55	30	270	30	30	90	25	10	105	190
Future Volume (veh/h)	35	240	55	30	270	30	30	90	25	10	105	190
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	38	261	60	33	293	33	33	98	27	11	114	207
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	463	1164	263	465	1302	145	578	974	826	686	974	826
Arrive On Green	0.81	0.81	0.81	0.81	0.81	0.81	0.52	0.52	0.52	0.52	0.52	0.52
Sat Flow, veh/h	1054	2880	650	1059	3223	360	1059	1870	1585	1266	1870	1585
Grp Volume(v), veh/h	38	159	162	33	160	166	33	98	27	11	114	207
Grp Sat Flow(s),veh/h/ln	1054	1777	1753	1059	1777	1806	1059	1870	1585	1266	1870	1585
Q Serve(g_s), s	1.1	2.5	2.6	0.9	2.5	2.6	2.0	3.2	1.0	0.5	3.7	8.6
Cycle Q Clear(g_c), s	3.7	2.5	2.6	3.5	2.5	2.6	5.7	3.2	1.0	3.7	3.7	8.6
Prop In Lane	1.00		0.37	1.00		0.20	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	463	718	709	465	718	730	578	974	826	686	974	826
V/C Ratio(X)	0.08	0.22	0.23	0.07	0.22	0.23	0.06	0.10	0.03	0.02	0.12	0.25
Avail Cap(c_a), veh/h	463	718	709	465	718	730	578	974	826	686	974	826
HCM Platoon Ratio	2.00	2.00	2.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	0.99	0.99	0.99	0.99	0.99	0.99	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	7.5	7.1	7.1	7.5	7.1	7.1	16.1	14.5	14.0	15.5	14.7	15.8
Incr Delay (d2), s/veh	0.3	0.7	0.7	0.3	0.7	0.7	0.2	0.2	0.1	0.0	0.2	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/lr	0.3	1.0	1.1	0.2	1.0	1.1	0.5	1.4	0.4	0.2	1.7	3.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	7.9	7.8	7.8	7.8	7.8	7.8	16.3	14.7	14.1	15.5	14.9	16.6
LnGrp LOS	A	A	A	A	A	A	B	B	B	B	B	B
Approach Vol, veh/h		359			359			158			332	
Approach Delay, s/veh		7.8			7.8			15.0			16.0	
Approach LOS		A			A			B			B	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		53.0		67.0		53.0		67.0				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		48.5		62.5		48.5		62.5				
Max Q Clear Time (g_c+I1), s		5.7		10.6		5.5		7.7				
Green Ext Time (p_c), s		2.2		1.5		2.2		0.8				
Intersection Summary												
HCM 6th Ctrl Delay											11.0	
HCM 6th LOS											B	

HCM 6th Signalized Intersection Summary
 7: Nevada Ave & Cimarron St

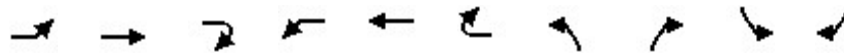
Switchbacks Stadium
 Switchbacks Match Late PM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↘	↗		↘	↗		↘	↗	↘	↗	↗	↘
Traffic Volume (veh/h)	40	200	35	25	160	20	40	280	30	10	355	120
Future Volume (veh/h)	40	200	35	25	160	20	40	280	30	10	355	120
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	43	217	38	27	174	22	43	304	33	11	386	130
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	446	1099	189	441	1153	144	490	1999	892	604	1473	490
Arrive On Green	0.73	0.73	0.73	0.36	0.36	0.36	0.56	0.56	0.56	0.56	0.56	0.56
Sat Flow, veh/h	1187	3031	522	1125	3179	397	885	3554	1585	1043	2619	871
Grp Volume(v), veh/h	43	126	129	27	96	100	43	304	33	11	260	256
Grp Sat Flow(s),veh/h/ln	1187	1777	1776	1125	1777	1799	885	1777	1585	1043	1777	1714
Q Serve(g_s), s	1.6	2.7	2.8	2.0	4.4	4.5	3.2	4.9	1.1	0.6	9.0	9.2
Cycle Q Clear(g_c), s	6.1	2.7	2.8	4.8	4.4	4.5	12.4	4.9	1.1	5.5	9.0	9.2
Prop In Lane	1.00		0.29	1.00		0.22	1.00		1.00	1.00		0.51
Lane Grp Cap(c), veh/h	446	644	644	441	644	652	490	1999	892	604	999	964
V/C Ratio(X)	0.10	0.20	0.20	0.06	0.15	0.15	0.09	0.15	0.04	0.02	0.26	0.27
Avail Cap(c_a), veh/h	446	644	644	441	644	652	490	1999	892	604	999	964
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.99	0.99	0.99	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	12.2	10.9	10.9	26.9	25.8	25.8	16.7	12.6	11.7	13.9	13.5	13.5
Incr Delay (d2), s/veh	0.4	0.7	0.7	0.3	0.5	0.5	0.4	0.2	0.1	0.1	0.6	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	1.1	1.2	0.6	2.0	2.0	0.7	2.0	0.4	0.2	3.7	3.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	12.6	11.6	11.6	27.1	26.3	26.3	17.0	12.7	11.8	13.9	14.1	14.2
LnGrp LOS	B	B	B	C	C	C	B	B	B	B	B	B
Approach Vol, veh/h		298			223			380			527	
Approach Delay, s/veh		11.7			26.4			13.1			14.1	
Approach LOS		B			C			B			B	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		48.0		72.0		48.0		72.0				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		43.5		67.5		43.5		67.5				
Max Q Clear Time (g_c+I1), s		8.1		11.2		6.8		14.4				
Green Ext Time (p_c), s		1.7		3.7		1.3		2.6				
Intersection Summary												
HCM 6th Ctrl Delay				15.3								
HCM 6th LOS				B								

Lanes, Volumes, Timings
8: I-25 & Cimarron St

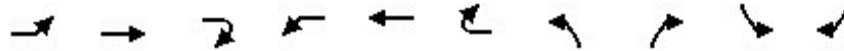
Switchbacks Stadium
Switchbacks Match Late PM



Lane Group	EBL	EBT	EBR2	WBL	WBT	WBR2	NBL	NBR2	SBL	SBR2
Lane Configurations										
Traffic Volume (vph)	380	260	435	360	300	635	330	15	55	305
Future Volume (vph)	380	260	435	360	300	635	330	15	55	305
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	500			380			550		500	
Storage Lanes	2			1			0		1	
Taper Length (ft)	25			25			25		25	
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95	1.00	0.94	1.00	0.97	1.00
Frt			0.850			0.850		0.850		0.850
Flt Protected	0.950			0.950			0.950		0.950	
Satd. Flow (prot)	3433	3539	1583	1770	3539	1583	4990	1583	3433	1583
Flt Permitted	0.950			0.950			0.950		0.950	
Satd. Flow (perm)	3433	3539	1583	1770	3539	1583	4990	1583	3433	1583
Right Turn on Red			Yes			Yes		Yes		Yes
Satd. Flow (RTOR)			473			511		136		332
Link Speed (mph)		30			30					
Link Distance (ft)		655			846					
Travel Time (s)		14.9			19.2					
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	413	283	473	391	326	690	359	16	60	332
Shared Lane Traffic (%)										
Lane Group Flow (vph)	413	283	473	391	326	690	359	16	60	332
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Right	Left	Right
Median Width(ft)		24			24					
Link Offset(ft)		0			0					
Crosswalk Width(ft)		16			16					
Two way Left Turn Lane										
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15	9	15	9
Number of Detectors	1	2	1	1	2	1	1	1	1	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Right	Left	Right
Leading Detector (ft)	20	100	20	20	100	20	20	20	20	20
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20	20	6	20	20	20	20	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel										
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94					
Detector 2 Size(ft)		6			6					
Detector 2 Type		Cl+Ex			Cl+Ex					
Detector 2 Channel										
Detector 2 Extend (s)		0.0			0.0					
Turn Type	Prot	NA	Free	Prot	NA	Perm	Prot	Free	Prot	Free
Protected Phases	7	4		3	8		5		1	
Permitted Phases			Free			8		Free		Free

Lanes, Volumes, Timings
8: I-25 & Cimarron St

Switchbacks Stadium
Switchbacks Match Late PM



Lane Group	EBL	EBT	EBR2	WBL	WBT	WBR2	NBL	NBR2	SBL	SBR2
Detector Phase	7	4		3	8	8	5		1	
Switch Phase										
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	5.0		5.0	
Minimum Split (s)	9.5	22.5		9.5	22.5	22.5	9.5		9.5	
Total Split (s)	29.0	48.0		49.0	68.0	68.0	23.0		23.0	
Total Split (%)	24.2%	40.0%		40.8%	56.7%	56.7%	19.2%		19.2%	
Maximum Green (s)	24.5	43.5		44.5	63.5	63.5	18.5		18.5	
Yellow Time (s)	3.5	3.5		3.5	3.5	3.5	3.5		3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0		1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0		0.0	
Total Lost Time (s)	4.5	4.5		4.5	4.5	4.5	4.5		4.5	
Lead/Lag	Lag	Lag		Lead	Lead	Lead				
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes				
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0		3.0	
Recall Mode	None	None		None	None	None	None		None	
Walk Time (s)		7.0			7.0	7.0				
Flash Dont Walk (s)		11.0			11.0	11.0				
Pedestrian Calls (#/hr)		0			0	0				
Act Effct Green (s)	21.4	21.1	120.0	32.2	31.8	31.8	53.2	120.0	53.2	120.0
Actuated g/C Ratio	0.18	0.18	1.00	0.27	0.26	0.26	0.44	1.00	0.44	1.00
v/c Ratio	0.67	0.46	0.30	0.82	0.35	0.87	0.16	0.01	0.04	0.21
Control Delay	51.9	44.9	0.5	43.4	30.9	18.7	24.0	0.0	25.9	0.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	51.9	44.9	0.5	43.4	30.9	18.7	24.0	0.0	25.9	0.3
LOS	D	D	A	D	C	B	C	A	C	A
Approach Delay		29.4			28.4					
Approach LOS		C			C					

Intersection Summary

Area Type: Other
 Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 15 (13%), Referenced to phase 2: and 6:, Start of Green
 Natural Cycle: 60
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.87
 Intersection Signal Delay: 25.3
 Intersection LOS: C
 Intersection Capacity Utilization 57.7%
 ICU Level of Service B
 Analysis Period (min) 15

Splits and Phases: 8: I-25 & Cimarron St

