

# Printers Hill

## Traffic Impact Study

Prepared for:

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JANUARY 15, 2024

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LSC #S224481



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January 15, 2024

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RE: Printers Hill  
Traffic Impact Study  
Colorado Springs, CO  
LSC #S224481

Dear Mr. Dossey,

LSC Transportation Consultants, Inc. has prepared this traffic impact study (TIS) for Printers Hill. The Printers Hill site is located within the City of Colorado Springs, Colorado. The Printers Hill site is located southeast of the intersection of Union Boulevard and Pikes Peak Avenue.

## REPORT CONTENTS

The preparation of this report included the following:

- Inventory of existing adjacent and nearby area street system. This included surface conditions, functional classifications, roadway widths, lane configurations, traffic control, posted speed limits, pavement markings, intersection and access spacing, roadway and intersection alignments, auxiliary left- and right-turn lanes, intersection sight distances, etc.;
- Review of existing conditions and plans for pertinent transportation system information and area improvements in the vicinity;
- Morning and late-afternoon peak-hour turning-movement traffic counts at the following intersections:
  - Union Boulevard/Pikes Peak Avenue
  - Union Boulevard/Parkside Drive
  - Pikes Peak Avenue/Printers Parkway
  - Pikes Peak Avenue/Iowa Avenue
  - Union Boulevard/Platte Avenue
- Estimates of average weekday and peak-hour trip generation for the proposed development;

- Estimation of directional distribution of site-generated vehicle trips on the area street system, and at the study-area intersections;
- Projections of site-generated turning-movement traffic volumes at the study-area intersections;
- Estimates of long-term (20-year) background traffic volumes at the study-area intersections and access points;
- Total traffic (site traffic-plus-existing/future-background traffic) projections at the study-area intersections for the short and long term;
- Level of service (LOS) analysis at the study-area intersections;
- Queuing analysis for the key turning movements at the study-area intersections;
- Evaluation of Traffic Criteria Manual requirements for auxiliary right-/left-turn lanes;
- Other recommended improvements/modifications to the study-area streets and intersections, including street system/intersection and pedestrian/bicycle facility improvements, intersection traffic control; and
- Summary of compiled data, analysis, findings, and recommendations.

## **LAND USE PLAN**

Figure 1 shows the site location relative to the adjacent and nearby streets. The Printers Hill redevelopment site is located southeast of the intersection of Union Boulevard and Pikes Peak Avenue (El Paso County parcel IDs 6416300042 and 6416300041). Figure 2 shows the Land Use Plan. The plan shows a mix of residential, commercial, retail, office and civic land uses. Table 1 shows land use details from the Land Use Plan, by parcel, used to estimate trip generation and resulting traffic impacts.

## **Project Vision for Mobility & Transportation**

The applicant's project vision is to create a high-density, urban community that prioritizes pedestrian/bicycle/non-motorized and public-transit travel modes both within the development site as well as to/from surrounding neighborhoods, businesses, and Memorial Park. Ultimately, if Central Business District (CBD)/downtown-type mobility and associated design concepts for multi-modal street corridors are implemented within this project and in the adjacent areas, street corridors between this development and downtown are more likely to see a shift and be transformed as well.

Objectives include avoiding additional street width for motor vehicles, minimizing pedestrian crossing distances, lowering travel speeds on the surrounding streets, adding pedestrian crossing infrastructure at all major access points to Union Boulevard and Pikes Peak Avenue, and designing/accommodating the Pikes Peak Avenue corridor adjacent to the project to accommodate the city-master-planned bike corridor.

## **Access and Circulation**

### Summary

Figure 2 also shows the proposed streets within the plan area and proposed internal street connections (access points) to adjacent Pikes Peak Avenue and Union Boulevard. An additional vehicular access to Pikes Peak Avenue aligning with Bonfoy Street is also proposed. The existing property access drive aligning with Iowa Avenue at Pikes Peak Avenue will remain (but will be reconfigured). The current vehicular access to the property on Union Boulevard is proposed to be relocated to the south. Please refer to Figure 2 and the attachments in Appendix A, which depict these access locations and the internal circulation system. Internal street connectivity, internal access points/intersections, and parking areas are shown on these plans.

### Vehicular Access Points - Details

#### *Pikes Peak Avenue*

- The access aligning with Bonfoy on the north side of Pikes Peak Avenue is proposed as a new full-movement, unsignalized (two-way, stop-sign-controlled (TWSC)) intersection.
- The existing property access aligning with Iowa Avenue is proposed as a full-movement, likely signalized access point (provided warrant(s) for signalization are met and/or the City allows/requires a signal to be installed at this location).

#### *Union Boulevard*

- A new full-movement, likely signalized access (once warrants are met) is proposed for a location about 140 feet north of the intersection of Union Boulevard and Memorial Drive (centerline spacing). This location would be about 870 feet south of Pikes Peak Avenue (centerline spacing). The existing property access driveway to Union would be closed to vehicular traffic and utilized as an on-site, pedestrian corridor.
- Please see Figure 9 (attached) for a summary of LSC's sight distance field measurements for the proposed west site-access location on Union.

#### *Printers Parkway/International Circle*

- This property does not have frontage along Printers Parkway and no vehicular access connection to Printers Parkway or International Circle exist.

## **Intersection Sight Distance**

### City of Colorado Springs Requirements

Vehicular access points (proposed arterial street connections/intersections) must meet City of Colorado Springs *Traffic Criteria Manual* standards for sight distance speed line-of-sight along Pikes Peak Avenue and Union Boulevard.

The required City of Colorado Springs' *Traffic Criteria Manual* intersection sight distance at the access points is 350 feet, as Union Boulevard and Pikes Peak Avenue both have posted speed limits of 35 mph (per Table 1 of the City of Colorado Springs' *Traffic Criteria Manual*). Sight distance lines-of-sight will need to be met with the detailed site development plans and maintained in the future by the property owner(s).

### Sight Distance Evaluation

#### *Union Boulevard/West Property Access Point*

Sight distance would be met to the north and south from the west access point, as exiting drivers would have 477 feet of sight distance looking towards vehicles arriving from at the Union/Pikes Peak Avenue intersection. Sight distance looking to/from the south is unobstructed to the signal at Union/Parkside.

#### *Pikes Peak Avenue/Northeast Access Point (across from Iowa Avenue)*

Sight distance would be met to the east and west from the north access point, as exiting drivers have an unobstructed line of site to the west to about Bonfoy Street and beyond the intersection of Pikes Peak Avenue/ Printers Parkway to the east. Both are located over 600 feet from the north site access.

#### *Pikes Peak Avenue/Northwest Access Point (across from Bonfoy Avenue)*

Lines of sight on Pikes Peak Avenue are unobstructed looking to/from the signal at Union Boulevard (to the west) and looking to/from the signal at Printers Parkway (to the east).

## **Internal Street Details**

Plans for the streets internal to the site are attached in Appendix A.

## **STREET AND TRAFFIC CONDITIONS**

### **Existing Streets**

Figure 1 shows the streets adjacent to and in the vicinity of the site. Adjacent streets and other streets in the study area are identified below followed by a brief description of each:

**Pikes Peak Avenue** extends east through central Colorado Springs from South Cascade Avenue to Wooten Road. The City of Colorado Springs' *Major Thoroughfare Plan* (MTP) shows Pikes Peak Avenue as a Principal Arterial. However, it has been determined that Pikes Peak Avenue will not extend east across Sand Creek. Adjacent to the site, Pikes Peak Avenue has five lanes with a center two-way left-turn lane (TWLTL) and a posted speed limit of 35 miles per hour (mph). The eastbound approach at its intersections with Union Boulevard and Printers Parkway has both auxiliary left-turn and right-turn lanes, while the westbound approach at these intersections only has auxiliary left-turn lanes. Traffic signals along Pikes Peak Boulevard near the site are coordinated with a 138-second cycle length.

**Union Boulevard** is a five-lane Principal Arterial that runs north/south through Colorado Springs between Circle Drive and Old Ranch Road. Adjacent to the site, the 5-lane roadway has a center TWLTL painted median, and the posted speed limit is 35 mph. Auxiliary left-turn lanes exist on the northbound and southbound approaches at its signalized intersection with Pikes Peak Avenue, while the northbound approach has a short exclusive right-turn bay. Traffic signals along Union Boulevard near the site are coordinated with a 138-second signal length.

**Parkside Drive** is a three-lane roadway with Industrial/Commercial classification that extends between Union Boulevard and Bijou Street. The roadway has a striped, two-way left-turn lane between Union Boulevard and Pikes Peak Avenue. Additionally, there is a striped bicycle lane and parking lane in each direction between Union Boulevard and Printers Parkway. Its intersection with Union Boulevard is signalized with turn lanes for most turning movements, although there is no turn lane for the northbound right-turn movement.

**Printers Parkway** is a four-lane non-arterial street extending generally north-to-south for 0.5 miles between Pikes Peak Avenue and Airport Road. The posted speed limit on Printers Parkway is 35 mph. The eastbound right-turn auxiliary turn lane is currently a free, channelized-right for vehicles turning from Pikes Peak Avenue.

### **Existing Traffic Volumes**

Vehicular peak-hour, turning-movement counts were conducted at the study-area intersections. The study area includes the following intersections: Union Boulevard/Pikes Peak Avenue, Union Boulevard/Platte Avenue, Pikes Peak Avenue/Printers Parkway, Pikes Peak Avenue/Iowa Avenue, Pikes Peak Avenue/Bonfoy Street, and Union Boulevard/Memorial Drive.

Existing morning and evening weekday peak-hour traffic volumes at these study-area intersections based on counts and estimates by LSC and data provided by City Traffic Engineering are shown in Figure 3. Raw count data reports are attached.

Union Boulevard currently carries about 16,000 to 17,000 vehicles per day adjacent to the site, and Pikes Peak Avenue currently carries about 12,000 to 13,000 vehicles per day adjacent to the site. Pikes Peak Avenue west of Union carries about 15,000 to 16,000 vehicles per day. These are based on factored peak-hour-volume data. These volumes are under capacity for five-lane arterial streets.

**Existing Levels of Service**

The study-area intersections have been analyzed to determine the current intersection levels of service, based on the existing traffic volumes for the morning and evening peak-hour time periods. Existing signal timings have been used for the analysis.

Level of service (LOS) is a quantitative measure of the level of congestion or delay at an intersection and is indicated on a scale from “A” to “F.” LOS A is indicative of little congestion or delay. LOS F indicates a high level of congestion or delay. Table 2 shows the level of service delay ranges for signalized and unsignalized intersections.

Intersection LOS of “D” or better meets City standards. Individual turning-movement levels of service can operate at “E” or “F,” depending on the site-specific situation. These are often evaluated more thoroughly to identify if the rating represents a near-capacity or over-capacity condition (and/or if there are vehicle queuing issues) or if the particular turning movement or approach LOS operates acceptably, but with an average delay in the “E” or “F” range of delay values.

**Table 2: Intersection Levels of Service Delay Ranges**

Level of Service	Signalized Intersections	Unsignalized Intersections
	Average Control Delay (Seconds Per Vehicle)	Average Control Delay (Seconds Per Vehicle) <sup>1</sup>
A	10.0 sec or less	10.0 sec or less
B	10.1-20.0 sec	10.1-15.0 sec
C	20.1-35.0 sec	15.1-25.0 sec
D	35.1-55.0 sec	25.1-35.0 sec
E	55.1-80.0 sec	35.1-50.0 sec
F	80.1 sec or more	50.1 sec or more

<sup>1</sup> For unsignalized intersections, if V/C ratio is greater than 1.0 the level of service is LOS F, regardless of the projected average control delay per vehicle.

Detailed Synchro reports are attached. A summary of LOS results for the weekday morning and evening peak hours is presented in the attached Table 3 (attached).

### Left-Turn Lanes & Queuing Observations

Union Boulevard and Pikes Peak Avenue are both five-lane Principal Arterials with a center, two-way, left-turn-lane (TWLTL) painted median.

#### *Union Boulevard/Pikes Peak Avenue Intersection*

While Union Boulevard and Pikes Peak Avenue generally have a center, two-way, left-turn-lane (TWLTL) painted median, there is striping for dedicated left-turn lanes on all approaches at the signalized intersection of the two streets. Most existing queues were observed to be accommodated by existing left-turn lane lengths on Union Boulevard at each intersection. SimTraffic simulation observations indicated that minimal left-turn queues on each approach would clear after each cycle.

The northbound-left queue on Union Boulevard approaching Pikes Peak Avenue was observed to be approximately 321 feet, which was reflected in the SimTraffic 95<sup>th</sup>-percentile queue estimates (attached). Long-term SimTraffic simulations project that vehicles would be prevented from entering the northbound-left turn lane at Union/Pikes Peak during three percent of the PM peak hour.

### **Notes of Observations During a Site Visit**

LSC conducted a site visit midweek from 5:00-5:30pm to observe existing queuing on the northbound approach of Union Boulevard between Pikes Peak Avenue and Parkside Drive. Approximately 6-8 vehicles were observed in the northbound-left turn lane during each cycle, with about 5-6 making it through on the protected-left phase and another 2-3 having to wait for the permissive-left phase. Approximately 8-12 vehicles arrived in both northbound-through lane, and they typically arrived in platoons each cycle before waiting for a green phase at Pikes Peak. The northbound-through queue extended back to exactly the 35-mph sign on the light pole during each cycle in both lanes (approximately 310 feet south of the stop bar at Pikes Peak Avenue).

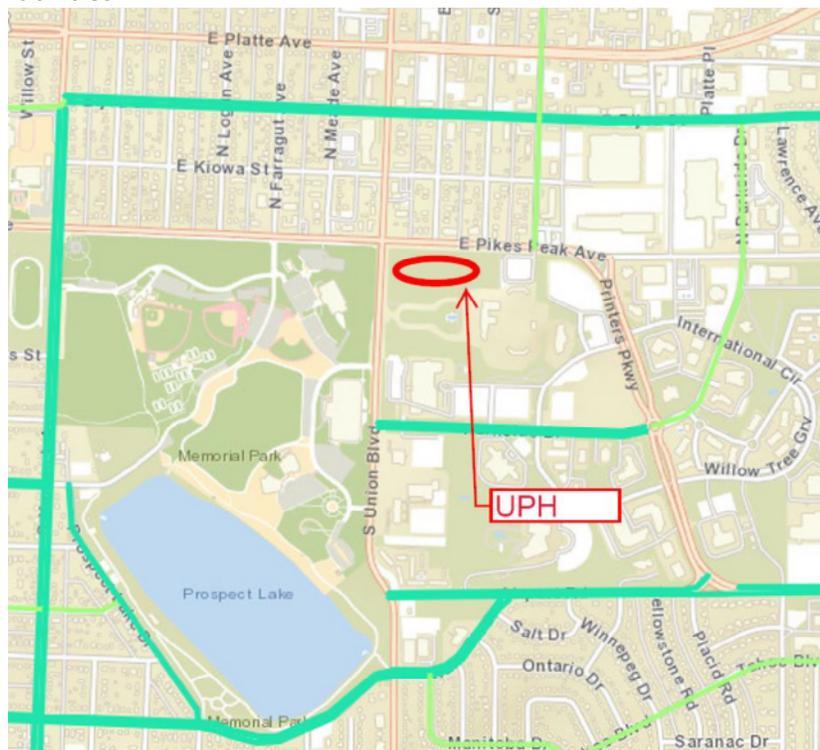
### **Pedestrian and Bicycle Facilities**

Sidewalks exist along the east side of Union Boulevard adjacent to the site. There are no existing sidewalks on the west side of Union Boulevard north of the Memorial Park entrance. Bike lanes are striped on Parkside Drive in the vicinity of the site. Please refer to the graphic below from the *Downtown Colorado Springs Bicycle Route Map* below for more details, and the second graphic showing the existing on-street bike lanes and shared roadways surrounding the UPH property.

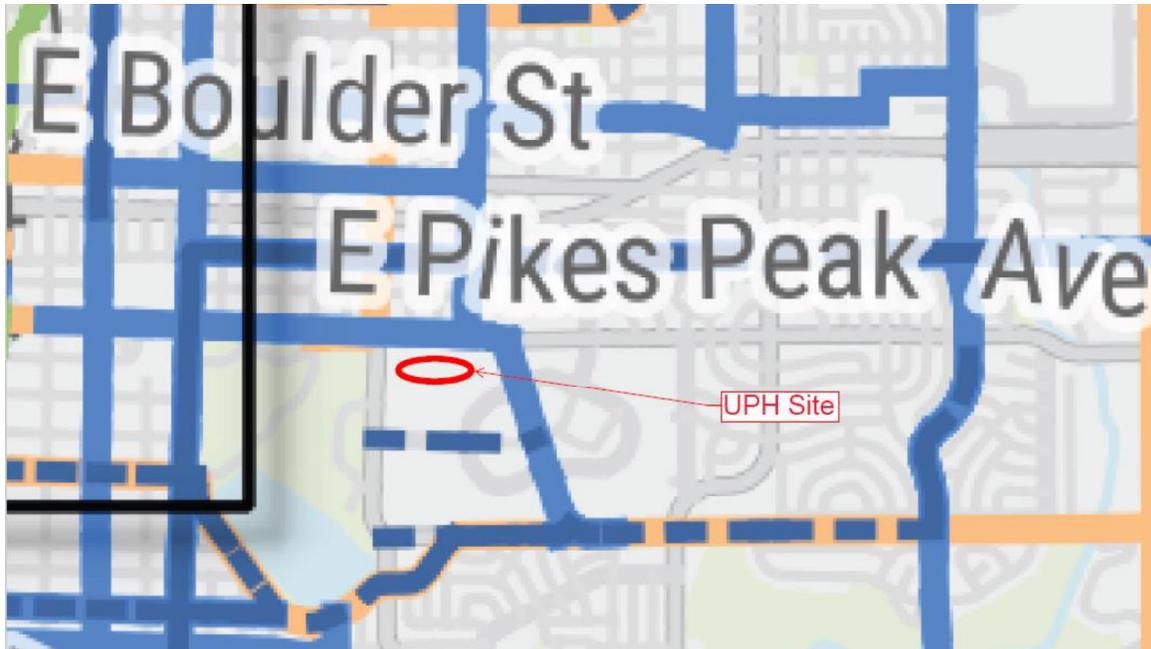
Downtown Colorado Springs Bicycle Route Map (Excerpt):



Existing Bicycle Facilities:



Note: The clip below shows the portion of the City’s bike vision plan within the area surrounding the UPH property.



City of Colorado Springs Bike Plan DRAFT

## Vision Network

Colorado Springs Bike Master Plan

- Bike Master Plan Corridor
- Previously Planned Corridors\*
- - - Existing On-Street Bike Facility
- Existing Trails

- /// Airports
- Military Boundary
- Parks

\*Includes previously planned corridors from the PPACG Regional Nonmotorized Transportation System Plan, Experience Downtown Master Plan, and Parks, Recreation, Trails and Open Space Master Plan.

### Bike Share

The Pike Ride bike-share program’s operating area is west of Union Boulevard, with hubs located within Memorial Park.

### Public Transit

Mountain Metro Bus Route 7 runs on Union Boulevard and Parkside Drive in the vicinity of the site. There are bus stops on Parkside Drive just east of Union Boulevard. These public transit exhibits are shown in *Mountain Metropolitan Transit 2045 Regional Transportation Plan— Transit* by HDR (2020).

### Truck Routes

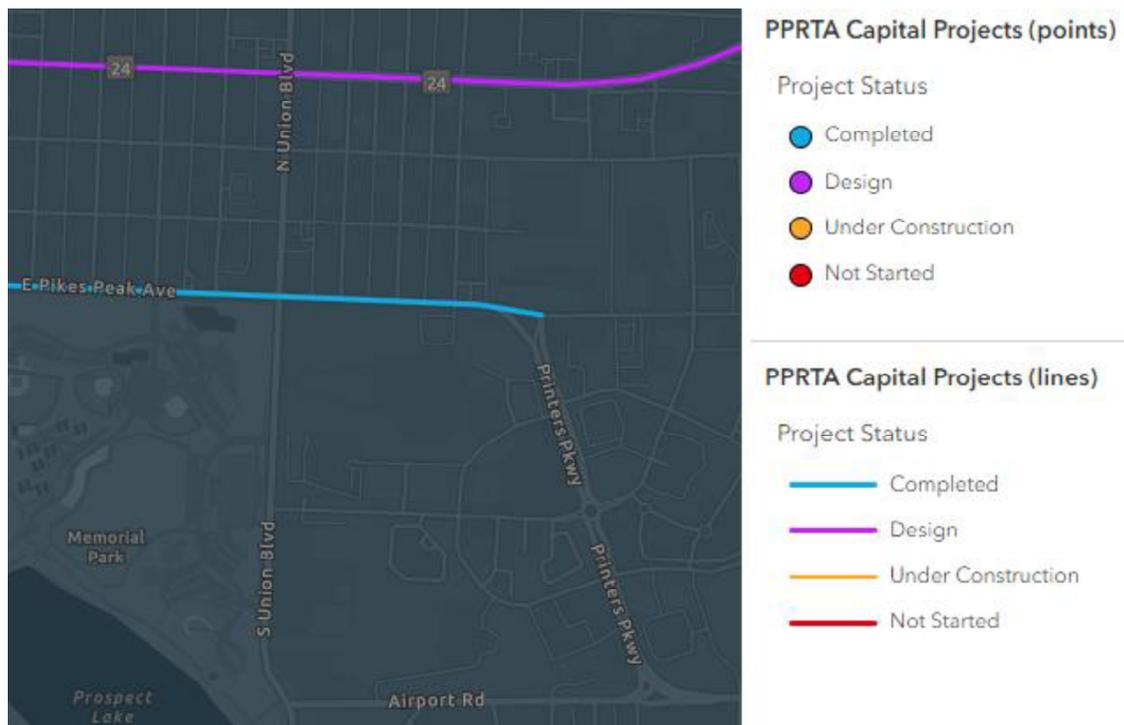
Designated truck routes exist along Union Boulevard, as shown below on the City of Colorado Springs' *Truck Route Map* from December 2019:



### ROADWAY IMPROVEMENT PUBLIC PROJECTS

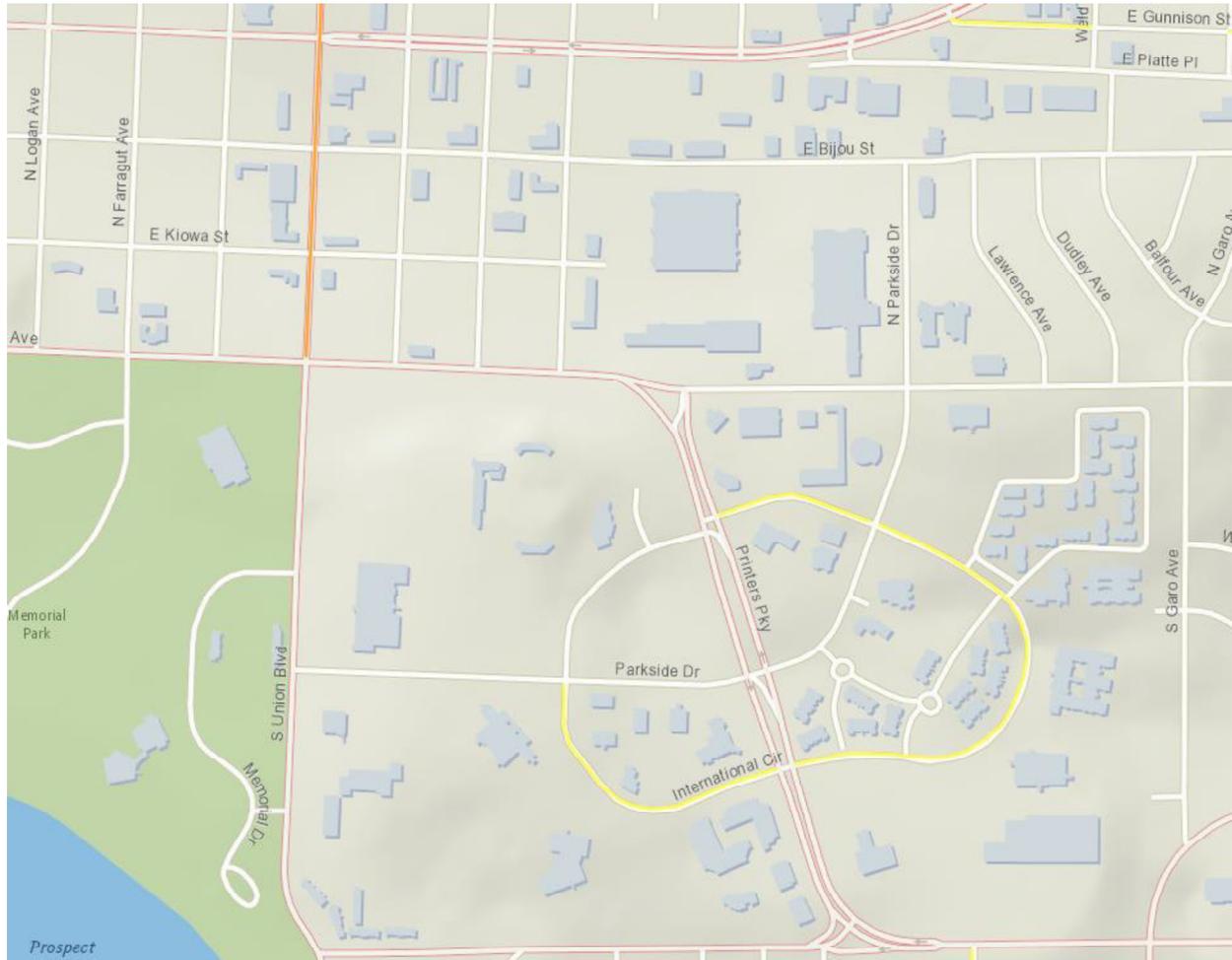
#### Pikes Peak Rural Transportation Authority

No upcoming capital improvement projects in the study area are planned by the Pikes Peak Rural Transportation Authority (PPRTA). Nearby roadway improvements to Pikes Peak Avenue were completed in 2021, as indicated below.



## Roadway Paving Projects

As shown on the City's 2C project map, Union Boulevard is projected to be repaved north of Pikes Peak Avenue in 2023, while most of International Circle is scheduled to be repaved in 2025.



## TRIP GENERATION

Estimates of the vehicle trips projected to be generated by the proposed development have been made using the nationally-published trip-generation rates from *Trip Generation, 11<sup>th</sup> Edition, 2021* by the Institute of Transportation Engineers (ITE). Table 1 (attached) presents the estimated trip generation by parcel.

### Internal Trips

Internal trips are trips that occur within the site and do not impact the external roadways. Because the site is planned to have multiple mixed retail, restaurant, office, and residential land uses, some of the generated trips will remain within the site. Table 1 includes estimates of

internal trip capture to account for trips generated estimated to be “captured”/remain within the site. The internal trips were estimated using the NCHRP 684 Internal Trip Capture Estimation Tool, but adjustments have been applied by LSC.

### **Total External Trip Generation**

Approximately 16,225 total external daily trips are projected to enter and exit the site at the access points on the average weekday. During the morning peak hour, approximately 680 vehicles would enter and 566 vehicles would exit the site. During the evening peak, approximately 643 vehicles would enter and 778 vehicles would exit.

### **Pass-by Trips**

The trips generated by the retail and food/beverage land uses have also been aggregated by trip type to account for the pass-by phenomenon. A pass-by trip is one made by a motorist who would already be on an adjacent road regardless of the proposed development, but who stops in at the site while passing by. The pass-by motorist would then continue on his or her way to a final destination in the original direction.

Diverted trips have also been estimated. Diverted trips result in altered turning movements at the nearby intersection of Pikes Peak/Union.

### **TRIP DISTRIBUTION**

An estimate of the directional distribution of site-generated vehicle trips to the study-area streets and intersections is a necessary component in determining the site-generated traffic volumes. The attached Figure 4 shows the directional-distribution estimate for the primary site-generated trips. The figure shows the percentages of the site-generated vehicle trips (primary trips) projected to be oriented to and from the site’s major approaches. Estimates have been based on the following factors: traffic counts conducted at major intersections adjacent to the proposed development, the proposed land uses, the access plan, the area road system serving the site, the site’s geographic location, and previously-conducted LSC studies in the vicinity.

### **Site-Generated Traffic**

Site-generated traffic volumes for the development during the weekday morning and evening peak hours are shown in Figure 5.

Site-generated traffic volumes have been calculated by applying the directional-distribution percentages estimated by LSC (from Figure 4) to the trip-generation estimates (from Table 1). The pass-by trips and diverted trips were assigned, based on the magnitude and direction of the peak-hour traffic volumes projected for the major study-area streets/roads.

## **BACKGROUND TRAFFIC VOLUMES**

Background traffic is traffic on the adjacent streets that is forecast to be present without the proposed redevelopment land uses and resulting trip generation/site-generated traffic.

### **Future (2043) Baseline/Background Traffic Volumes**

Estimates of long range, 2043 baseline/background traffic volumes have also been analyzed. Estimated 2043 background traffic volumes on adjacent roadways and at the study-area intersections are based in-part on model output from the 2043 Pikes Peak Regional Traffic Model and MS2Soft count data. Background volumes are based on general growth rates. Background traffic estimates exclude projections of site-generated traffic/additional trips to be generated by the addition of proposed land uses shown on the Land Use Plan.

Future background traffic projections (shown in Figure 7) reflect slight increases in through volumes on adjacent study-area roadways. The following are the annual growth rates applied to existing volumes:

- Street segments described in terms of the legs of the Union Boulevard/Pikes Peak Avenue intersection:
  - North leg (Union Boulevard north of Pikes Peak Avenue) – 0.25 percent per year
  - East leg (Pikes Peak Avenue east of Union Boulevard) – 0.50 percent per year
  - South leg (Union Boulevard south of Pikes Peak Avenue) – 0.50 percent per year
  - West leg (Pikes Peak Avenue west of Union Boulevard) – 1.25 percent per year

## **TOTAL TRAFFIC VOLUMES**

Site-generated traffic volumes were added to existing traffic volumes for the resultant short-term total traffic, or “existing-plus-site” volumes shown in Figure 6.

Similarly, 2043 total traffic volumes, shown in Figure 8, were calculated by adding the site-generated traffic with the 2043 background traffic volumes.

## **INTERSECTION LEVEL OF SERVICE ANALYSIS**

The study area intersections have been analyzed to determine the projected short and long-term future intersection levels of service based on, existing-plus-site-generated, future long-term background traffic, and total future traffic volumes for the morning and evening peak-hour time periods.

Detailed Synchro reports are attached. A summary of LOS results for the weekday morning and evening peak hours is presented in Table 3 (attached).

## **AUXILIARY TURN-LANES**

Table 2 of the City of Colorado Springs' *Traffic Criteria Manual* contains turning-volume thresholds which require auxiliary left- or right-turn lanes by roadway classifications. Roadway classifications for key thoroughfares in the vicinity of the site are based on the City of Colorado Springs' Major Thoroughfare Plan within the newly adopted **PlanCOS**.

- Union Boulevard – Principal Arterial
- Pikes Peak Avenue – Principal Arterial

### **Left-Turn Lanes**

Projected long-term queues for the left-turn movements at the intersections of Pikes Peak/Union, Pikes Peak/Iowa and the other site-access-point intersections can be accommodated within the center painted medians.

### **Right-Turn Deceleration Lanes**

#### Union Boulevard

Per the City of Colorado Springs' *Traffic Criteria Manual*, Principal Arterial roadways are required to have a right-turn lane if the right-turning movement exceeds 25 vehicles per hour (vph).

Currently, an 80-foot northbound-right turn bay exists at the intersection of Union Boulevard/Pikes Peak Avenue. City traffic engineering has indicated that they would not require lengthening of this lane in order to preserve the existing large trees along the Union Boulevard site frontage.

The northbound projected right-turning volume at the proposed relocated site access on Union Boulevard exceeds the threshold requiring a right-turn deceleration lane. However, there does not appear to be sufficient right-of-way along the east side of Union Boulevard for adding a right-turn lane.

#### Pikes Peak Avenue

Although the projected eastbound right-turning volumes at the proposed site-access points on Pikes Peak Avenue would be above the *Traffic Criteria Manual* threshold for right-turn lanes, the applicant is requesting that this code requirement be waived based on the "Project Vision for Mobility & Transportation" section above, such that the existing south curb line of Pikes Peak Avenue remains unchanged.

Street widening associated with the addition of right-turn deceleration lanes at the access points would be contrary to the applicant's vision for area mobility and prioritization/accommodation of travel modes other than private motor vehicles. Additionally, it would require right-of-way

dedication from private property. Finally, added right-turn lanes would have potential negative implications for pedestrians, cyclists, and other non-motorized travel in the area of the project. Therefore, the applicant is proposing maintaining the existing street curb lines along the site frontage of Union Boulevard and Pikes Peak Avenue but not adding right-turn deceleration lanes.

## **VEHICLE QUEUING ANALYSIS**

Queuing analysis was performed for key turning movements at the study-area intersections during the long-term peak hours. The queuing analysis results are presented in Table 4 (attached).

### **SimTraffic Simulation Analysis – General Technical Information**

“Upstream block time” represents the percentage of time during the peak hour in which the entry point for a turn lane upstream of the subject intersection is blocked by a queue in the adjacent through lane. “Storage block time” is the proportion of time in which the turn lane’s queue exceeds the available storage length and left-turning vehicles overspill the turn lane in the model and into the adjacent through lane.

“Maximum queue” represents the maximum queue length observed for each individual lane during the 15-minute analysis period. SimTraffic records the maximum back of queue observed for every two-minute period. In SimTraffic, a vehicle is considered queued whenever it is behind another vehicle traveling at less than 10 feet/second (approximately 7 mph) or at a stop bar. The maximum observed queue may not occur during the same interval in which the highest upstream block time (percent) or storage block time (percent) occurs. LSC has reported the highest value for each metric for each turn lane/approach regardless of whether or not they occur in the same 15-minute interval.

The reported queue length for auxiliary turn lanes in SimTraffic is generally limited by the turn-lane length. SimTraffic simply reports the maximum observed queue length during simulations. Any spillover from a left- or right-turn lane is reported in the adjacent lane queue length.

Please refer to the laneage schematics presented in Figures 6 and 8.

### **Union Boulevard/Pikes Peak Avenue**

The 95<sup>th</sup>-percentile queue length for the northbound-left turn lane is projected to reach 382 feet, which would exceed the available storage during 0 percent of the long-term PM peak hour. There is no direct east-west connection to the downtown Colorado Springs area due to Memorial Park. It is likely that drivers would choose an alternative route to head west, when/if an infrequent longer queue occurs, such as heading north to turn northbound-left at Union/Platte instead.

To the south, the proposed west site access to Union Boulevard would be located approximately 140 feet north of Memorial Drive. Projected 95<sup>th</sup>-percentile queues for the southbound-left at

the west site access are projected to reach 87 feet, which would not exceed capacity during either of the long-term peak hours.

### **Pikes Peak Avenue – Union Boulevard to Bonfoy Avenue**

There is currently a closely-spaced TWLTL on Pikes Peak Avenue between Union Boulevard and Bonfoy Avenue. Based on projected queues, LSC recommends that the solid white striping for the westbound-left turn lane be modified from 140 feet total (80-foot lane plus 60-foot taper) to be 200 feet total (150-foot lane plus 50-foot taper). The TWLTL striping at Bonfoy Avenue would be shortened to 100 feet total (50-foot lane plus 50-foot taper). This configuration would accommodate queues on Pikes Peak Avenue for both of these back-to-back left-turning movements.

LSC recommends a two-lane approach northbound, including a separate northbound-right turn bay. The other lane would be a shared northbound-through/left. Two lane lengths were modeled for the northbound right-turn lane – a 200-foot-long lane and a 250-foot-long lane. For the 200-foot-long lane, during the long-term PM peak hour, the projected maximum queue for the northbound right-turn lane is about 291 feet, while the outbound travel lane (northbound through/left lane at the intersection) has a projected maximum queue of 472 feet and 95<sup>th</sup>-percentile queue of 455 feet. For the 250-foot-long lane, during the long-term PM peak hour, the projected maximum queue for the northbound right-turn lane is about 320 feet, while the outbound travel lane (northbound through/left lane at the intersection) has a projected maximum queue of 320 feet and 95<sup>th</sup>-percentile queue of 293 feet. LSC recommends a northbound right-turn lane within this 200 to 250 range for the storage length, plus a short, reverse-curve-bay taper is recommended.

No modifications would be required to the existing TWLTL striping on Pikes Peak Avenue between Bonfoy Avenue and Iowa Avenue, as the existing westbound-left turn lane approaching Bonfoy would accommodate the maximum long-term projected queue of 66 feet.

Queues on the southbound approach on Bonfoy Avenue would be minimal, so this could remain a single-lane approach.

### **Pikes Peak Avenue/Iowa Avenue**

LSC recommends the southbound approach be configured with two approach lanes, if possible, including a separate left-turn lane to align with the recommended northbound left turn on the south side. Queues for a southbound shared-through/right lane are projected to reach 213 feet.

No modifications would be required to the existing TWLTL striping on Pikes Peak Avenue between Bonfoy Avenue and Iowa Avenue, as the existing eastbound-left turn lane approaching Iowa Avenue would accommodate the maximum long-term projected queue of 56 feet.

Back-to-back left turns on Pikes Peak Avenue between Iowa Avenue and Printers Parkway would accommodate the 95<sup>th</sup>-percentile queues at Iowa Avenue (85 feet for westbound-left) and at Printers Parkway (31 feet for eastbound-left). No modifications would be required to existing TWLTL striping in this section.

LSC recommends two northbound approach lanes: a northbound-left-only and a shared northbound-through/right. During the long-term PM peak hour, the projected 95<sup>th</sup>-percentile queue for the northbound through/right lane is 171 feet, while the northbound right-left lane has a projected 95<sup>th</sup>-percentile queue of 160 feet. LSC recommends a 150-foot northbound left-turn bay plus a short bay taper.

### **Union Boulevard – Proposed West Site Access to Union Boulevard**

The proposed west site access to Union Boulevard would be located approximately 140 feet north of Memorial Drive. The projected 95<sup>th</sup>-percentile queues for the southbound-left at the west site access are projected to reach 95 feet, which would **not** exceed capacity during either of the long-term peak hours. This queue length would allow for the back-to-back left with the northbound left turn at Union/Pikes Peak Avenue.

The plan shows separate left- and right-turn lanes on the westbound approach. The westbound left lane would have a 95<sup>th</sup>-percentile queue of 195 feet, while the westbound-right lane would have a 95<sup>th</sup>-percentile queue of 68 feet. LSC recommends the intersection approach be configured for a 100-150-foot eastbound-right turn lane plus a short bay taper.

### **INTERSECTION LANEAGE, CONFIGURATION AND TRAFFIC CONTROL**

Figure 8 shows the intersection laneage proposed for the access points and adjacent intersections based on Land Use plan trip generation, estimated resulting site-generated traffic, the level of service analysis results, the queuing analysis results, and the “Auxiliary Turn Lane” section above.

### **PEDESTRIAN AND BICYCLE FACILITIES**

#### **Pedestrian Crossing of Union Boulevard**

The plan shows a potential grade-separated pedestrian crossing at the location of the existing property access. Also, a signal at the west access is envisioned, which would provide pedestrian crossing capability. The center median immediately south of the access could potentially be used for pedestrian refuge, but that would likely require a raised island rather than restriping.

#### **Pedestrian Crossing of Pikes Peak Avenue**

The applicant has indicated that a pedestrian crossing of Pikes Peak Avenue at the Swope Street intersection is a priority to fulfill the project vision. A designated pedestrian crossing of Pikes Peak

likely will require a regular signal or ped signal (like a HAWK signal, which is typically actuated with push buttons). The City Traffic Engineering indicated that the Bonfoy intersection is too close to the Pikes Peak/Union intersection to signalize it (420 feet - centerline spacing - from Pikes Peak/Union). City Traffic has commented that such a signalized, mid-block pedestrian crossing at Swope Street could be considered in future phases, as needed. The crossing would be about a 350-foot walk from the Bonfoy intersection (and about a 400-foot walk from the Iowa/Pikes Peak intersection, which is proposed to be signalized). Potentially, internal walkways could connect directly to this crossing point location.

### **Pikes Peak Avenue – Bicycle Corridor on the City’s Bike Vision Network**

The plan provides for a shared use path along the south side of Pikes Peak Avenue.

Please refer to the attached Appendix A, which explains the City’s identified process for implementing the Bike Vision Network segment of Pikes Peak Avenue east of Union along the site frontage. The general approach is to utilize the Bicycle Facility Toolbox.

### **SUMMARY & CONCLUSIONS**

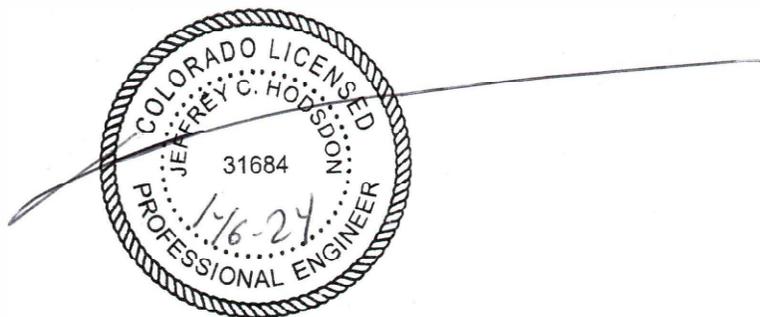
- The site is projected to generate about 16,226 external driveway vehicle trips on the average weekday.
- During the morning peak hour, approximately 680 vehicles would enter, and 566 vehicles would exit the site.
- During the evening peak, approximately 643 vehicles would enter, and 778 vehicles would exit.
- Please refer to the “Level of Service” section above for detailed LOS analysis results for individual turning movements and approaches at all studied intersections.
- Please refer to the “Auxiliary Turn Lane Analysis,” “Queuing Analysis,” and “Intersection Laneage, Configuration and Traffic Control” sections for details on these elements.
- The “Bicycle and Pedestrian Facilities” section presents plan elements and recommendations.
- City Traffic Engineering has indicated that the developer is required to remit the amount of \$500,000 for the future anticipated traffic signal at the proposed West Site Access/Union Boulevard intersection and Pikes Peak Avenue/Iowa Avenue Intersection.

\* \* \* \* \*

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

Respectfully Submitted,

LSC TRANSPORTATION CONSULTANTS, INC.



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

JCH/JAB:jas

Enclosures: Tables 1, 3, and 4  
Figures 1-9  
Traffic Counts  
Levels of Service – Synchro  
SimTraffic Queues  
Appendix A – Bike Vision Network

# Tables

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Table 4: Summary of 95th-Percentile Queue Results (from SimTraffic)

Union Blvd + Pikes Peak Avenue												
Turn Lane	EBL	EBT	EBT	EBR	WBL	WBT	WB T/R	NBL	NBT	NBT	NBR	SB T/R
95th Percentile Queue (ft)	353	476	468	289	223	349	369	382	411	429	101	274
Storage (ft)	300	-	125	150	-	-	-	500	-	-	35	125
Taper (ft)	50	-	100	50	-	-	-	90	-	-	45	90
Total Length (ft)	350	-	225	200	-	-	-	590	-	-	80	215
% Block Time - Upstream	0%	0%	0%	0%	0%	1%	2%	0%	0%	0%	0%	0%
% Block Time - Storage	12%	2%	41%	0%	1%	33%	0%	0%	0%	56%	31%	64%

Pikes Peak Avenue + Bonfoy Avenue

Turn Lane	EBL	EBT	EB T/R	WBL	WBT	WB T/R	w/200' NBR Lan			w/250' NBR Lane		
							NBL/T	NBR	NBL/T	NBR	NBL/T	NBR
95th Percentile Queue (ft)	39	12	25	71	21	43	455	231	293	129	65	
Maximum Queue (ft)	*	*	*	*	*	*	472	291	320	156	*	
Storage (ft)	50	-	-	120	-	-	-	200	-	250	-	
Taper (ft)	50	-	-	140	-	-	-	50	-	50	-	
Total Length (ft)	100	-	-	260	-	-	-	250	-	300	-	
% Block Time - Upstream	0%	0%	0%	0%	0%	0%	6%	0%	0%	0%	0%	0%
% Block Time - Storage	1%	0%	0%	0%	0%	0%	13%	0%	4%	0%	0%	0%

\*See SimTraffic report-attached.

Pikes Peak Avenue + Iowa Avenue

Turn Lane	EBL	EBT	EB T/R	WBL	WBT	WB T/R	NBL	NB T/R	SBL	SB T/R
95th Percentile Queue (ft)	56	229	284	85	218	193	160	171	64	213
Storage (ft)	120	-	-	120	-	-	125	-	50	-
Taper (ft)	180	-	-	150	-	-	50	-	50	-
Total Length (ft)	300	-	-	270	-	-	175	-	100	-
% Block Time - Upstream	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
% Block Time - Storage	0%	15%	0%	0%	17%	0%	1%	2%	0%	0%

Union Blvd + West Access

Turn Lane	WBL	WBR	NBT	NB T/R	SBL	SBT
95th Percentile Queue (ft)	195	68	8	18	87	0
Storage (ft)	-	75	-	-	175	-
Taper (ft)	-	75	-	-	90	-
Total Length (ft)	-	150	-	-	265	-
% Block Time - Upstream	0%	3%	0%	0%	0%	0%
% Block Time - Storage	15%	0%	0%	0%	0%	0%

Union Blvd + Platte Avenue

Turn Lane	EBL	EBT	EBT	EBR	WBL	WBT	WBT	WBR	NBL	NBT	NBT	NBR	SBL	SBT	SB T/R
95th Percentile Queue (ft)	366	490	479	92	279	432	423	211	218	395	427	263	244	436	415
Storage (ft)	170	-	-	35	150	-	-	115	215	-	-	115	305	-	-
Taper (ft)	120	-	-	55	65	-	-	80	40	-	-	80	75	-	-
Total Length (ft)	290	-	-	90	215	-	-	195	255	-	-	195	380	-	-
% Block Time - Upstream	0%	27%	21%	0%	0%	0%	7%	0%	0%	0%	0%	0%	0%	1%	0%
% Block Time - Storage	37%	53%	63%	9%	7%	42%	0%	0%	0%	22%	53%	2%	0%	8%	0%

# Figures

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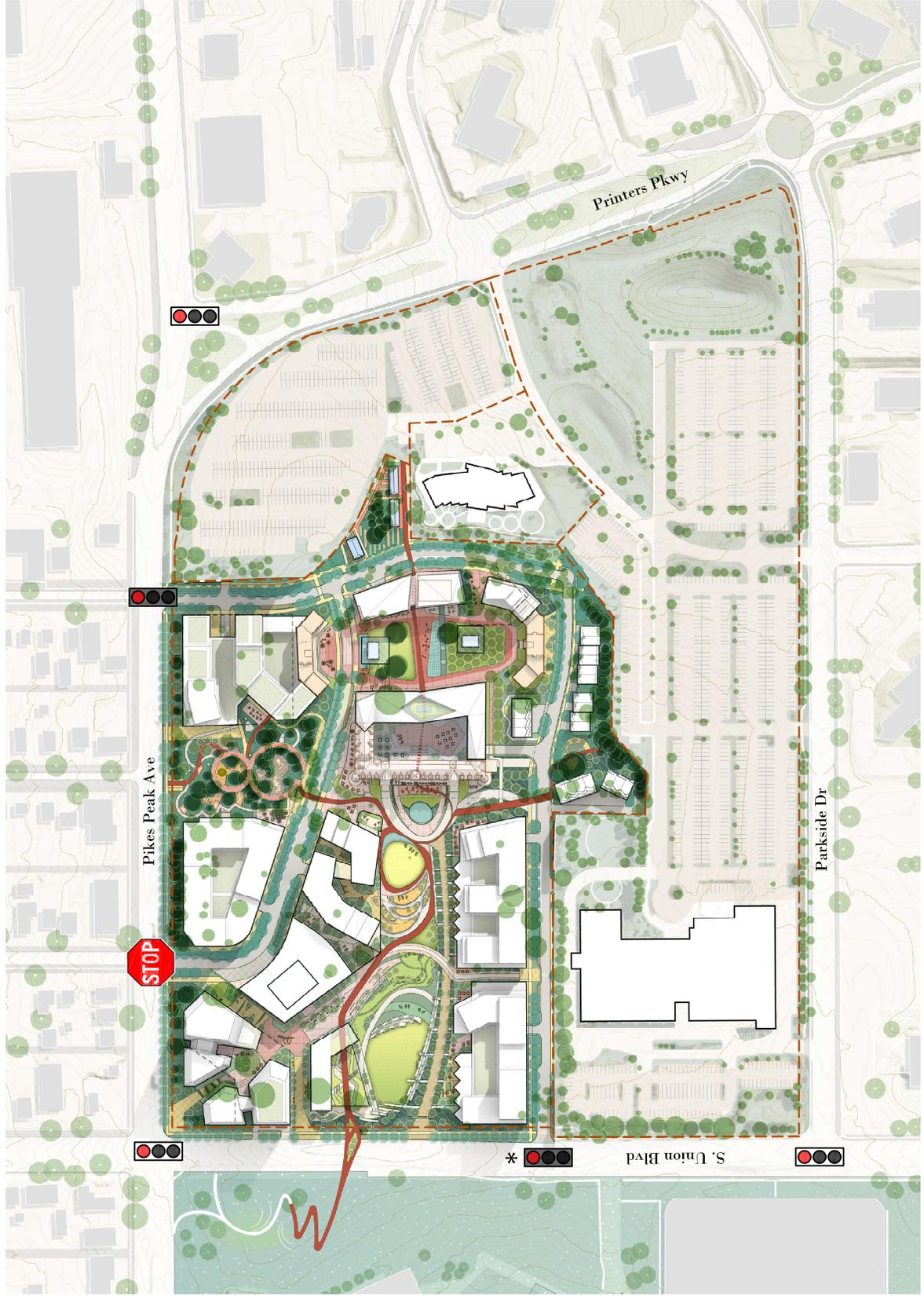


Figure 1  
Vicinity Map  
Printer's Hill (LSC# S224481)





Approximate  
Scale  
1" = 350'

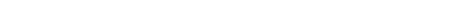
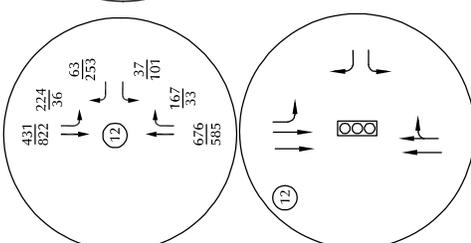
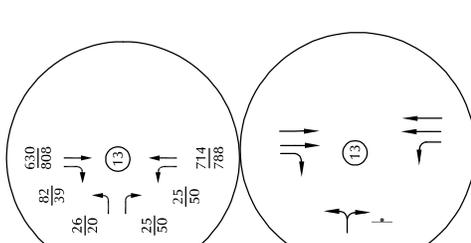
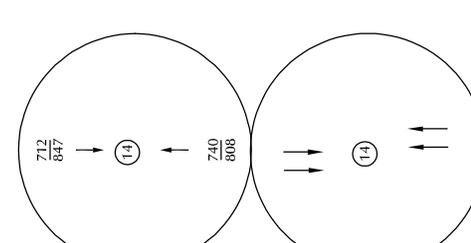
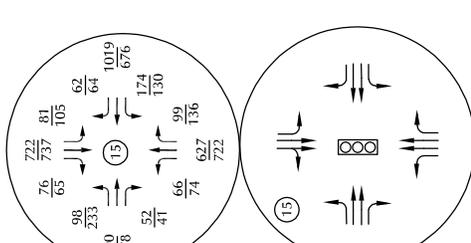
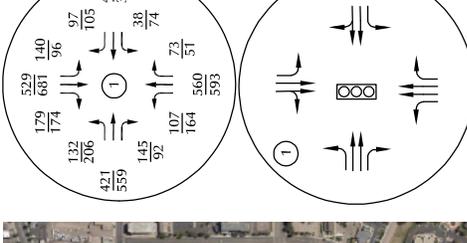
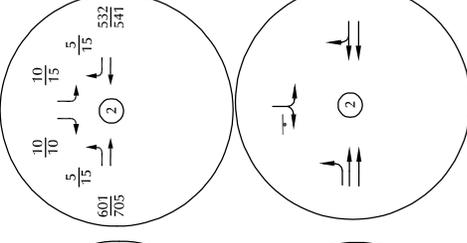
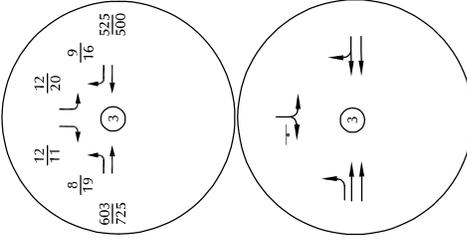
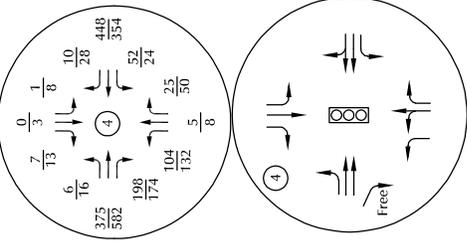


-  Signalized Intersection  
(Proposed/\*Potential future  
signal if warranted)
-  Signalized Intersection  
(Existing)
-  **STOP** Two-way, Stop-Sign Control

Figure 2  
**Site Plan**

Printer's Hill (LSC# S224481)





\* Note: existing driveway to be closed

XX = AM Weekday Peak-Hour Traffic (Veh/Hour)  
 XX = PM Weekday Peak-Hour Traffic (Veh/Hour)  
 X,XXX = Average Daily Traffic (Vehicles/Day)

⊥ = Stop Sign  
 = Traffic Signal

Counts by LSC (October 2022)



Figure 3  
 Existing Traffic Volumes, Lane  
 Geometry, and Traffic Control  
 Printer's Hill (LSC# S224481)

Not to  
 scale

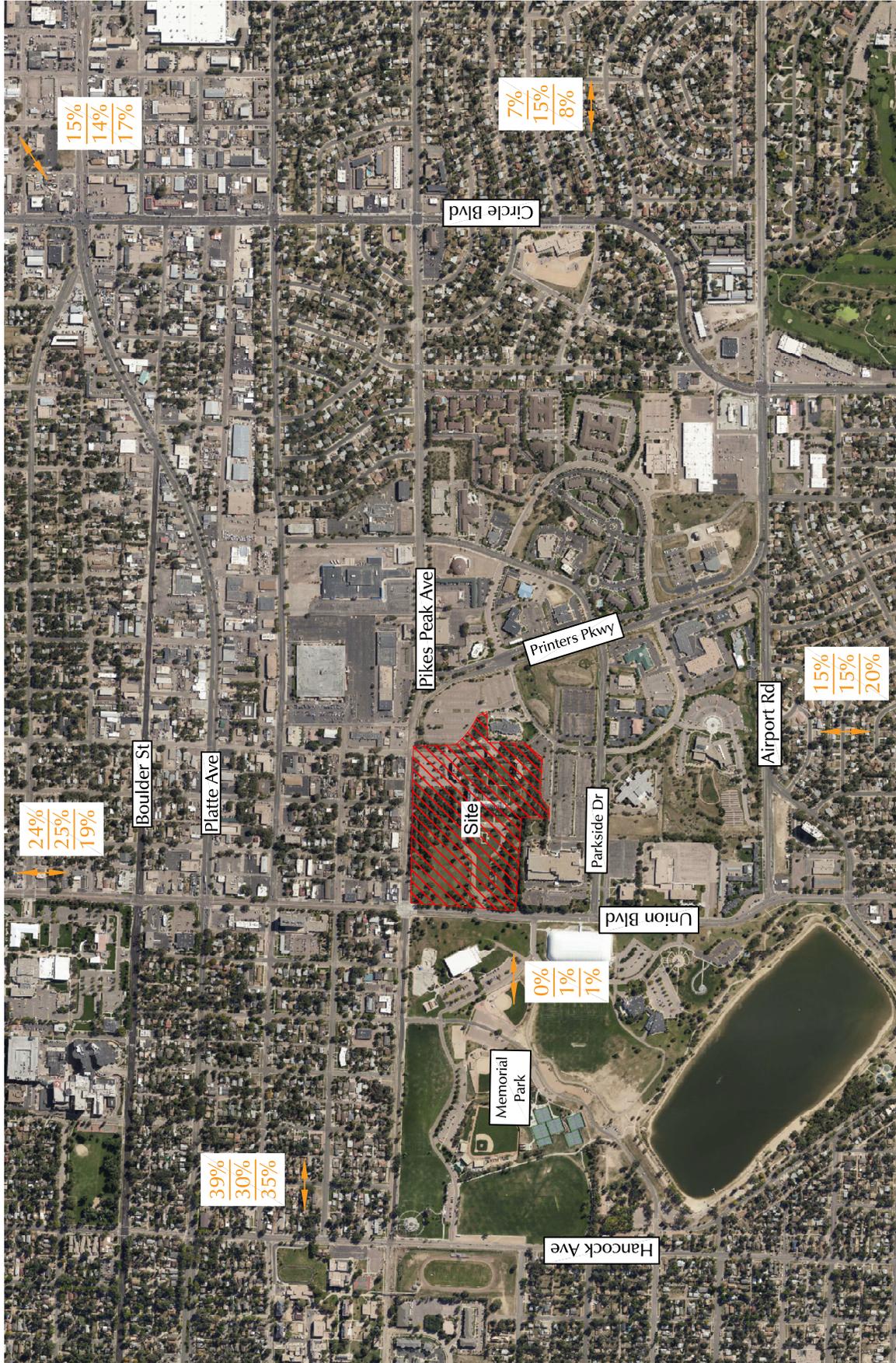
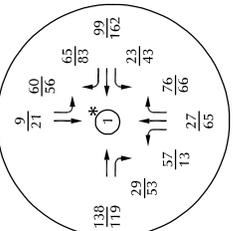
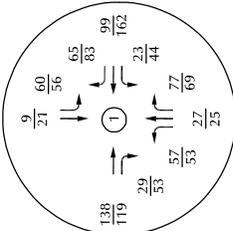
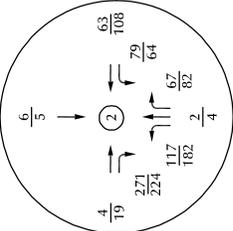
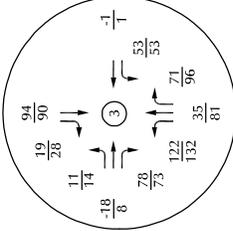
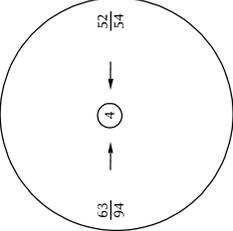


Figure 4  
**Estimated Directional  
 Distribution**

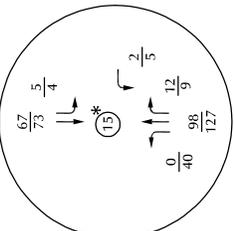
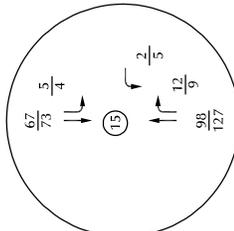
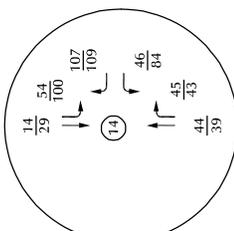
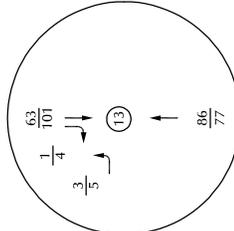
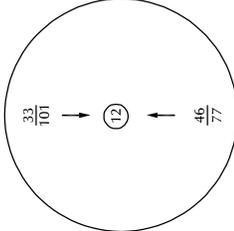
Printers Hill (LSC# S224481)



XX% = Residential % Distribution  
 XX% = Retail/Restaurants % Distribution  
 XX% = Office % Distribution



\*Note: Northbound, site-generated, left turn volume reflects a shift at these two intersections only in the Long-Term.



XX = AM Weekday Peak-Hour Traffic (Veh/Hour)  
 XX = PM Weekday Peak-Hour Traffic (Veh/Hour)  
 X,XXX = Average Daily Traffic (Vehicles/Day)

Figure 5  
 Site-Generated Traffic  
 Printer's Hill (LSC# S224481)

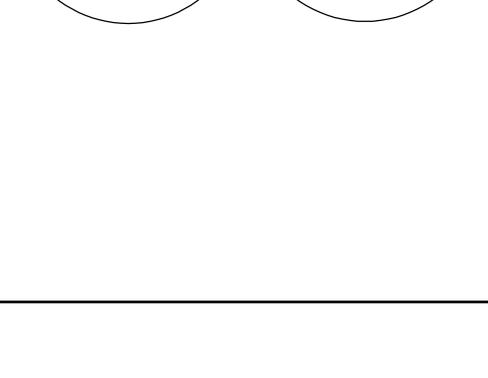
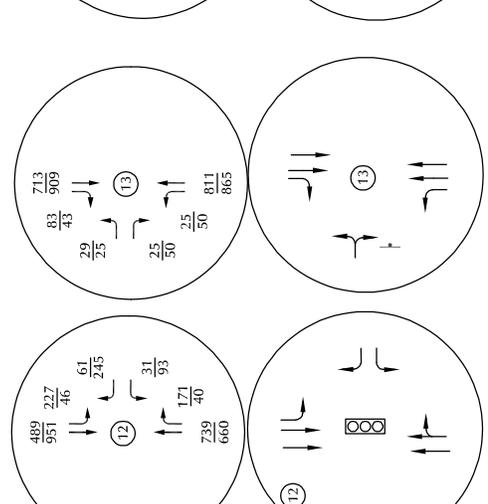
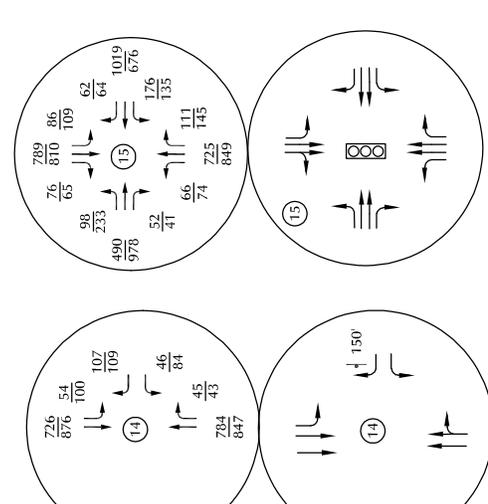
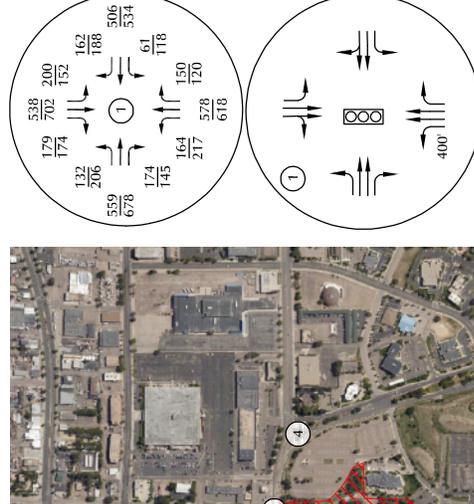
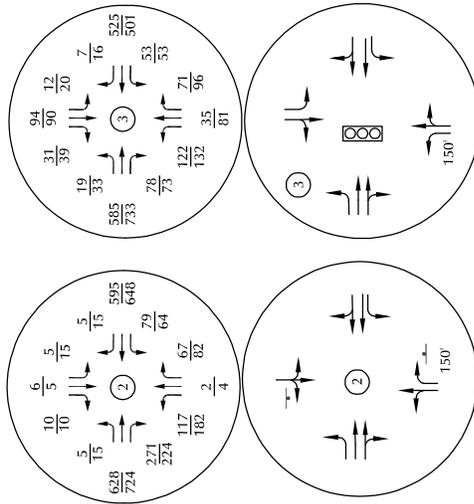
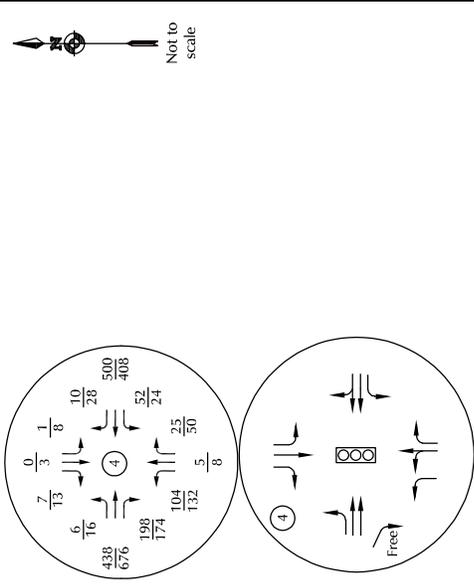


Figure 6  
**Existing Plus Site-Generated Traffic Volumes,  
 Lane Geometry, and Traffic Control**

XX = AM Weekday Peak-Hour Traffic (Veh/Hour)  
 XX = PM Weekday Peak-Hour Traffic (Veh/Hour)  
 X,XXX = Average Daily Traffic (Vehicles/Day)

⊥ = Stop Sign  
 ⊞ = Traffic Signal

Traffic signal control  
 (once warranted)



Not to scale

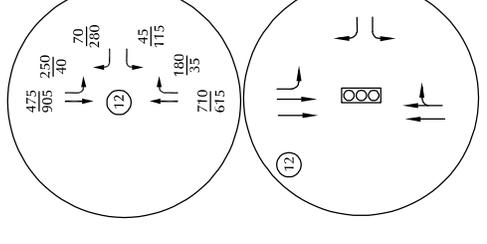
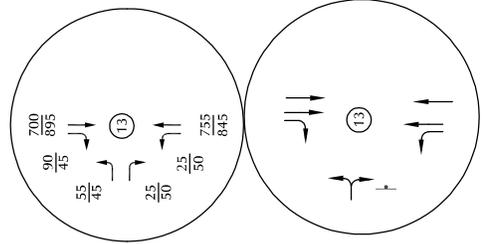
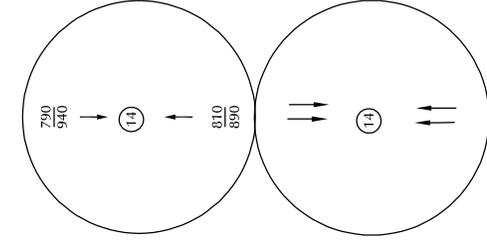
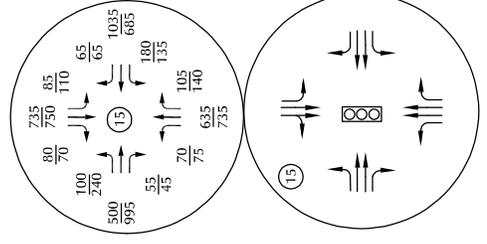
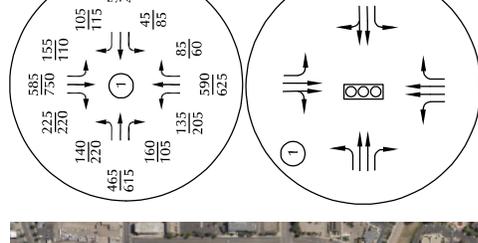
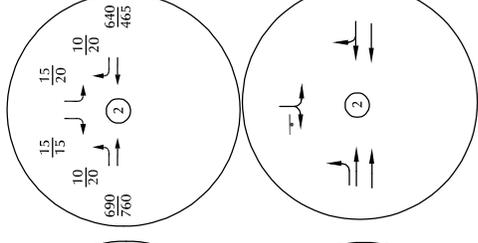
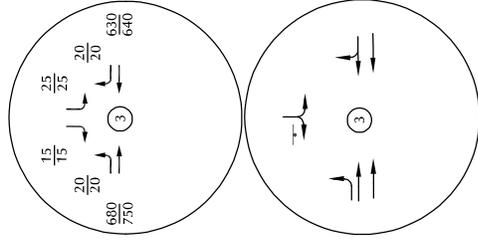
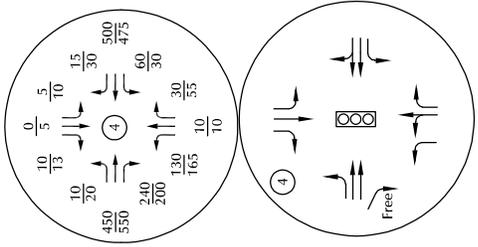


Figure 7  
 2043 Background Traffic Volumes,  
 Lane Geometry, and Traffic Control

Printer's Hill (LSC# S224481)

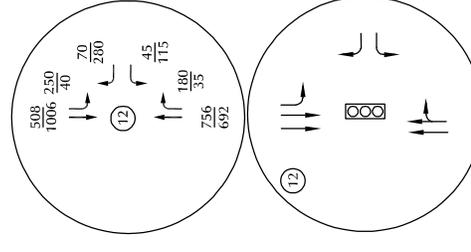
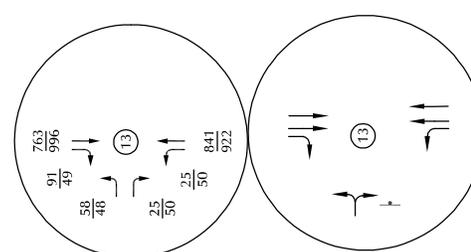
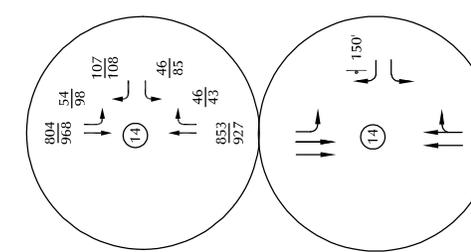
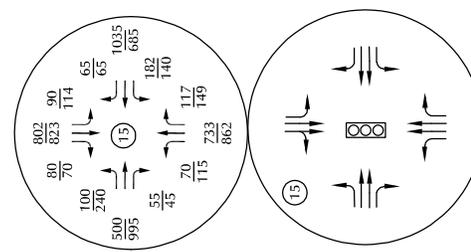
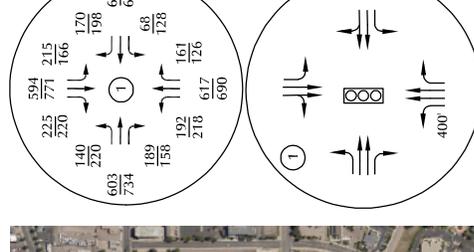
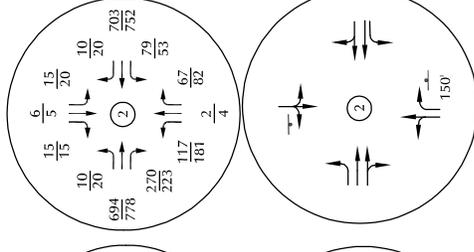
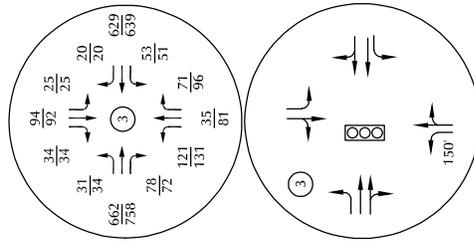
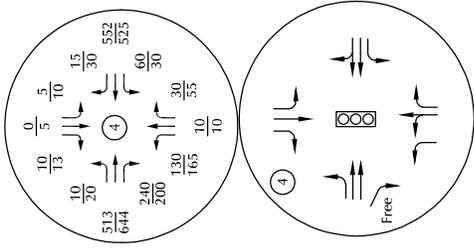
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 XX = PM Weekday Peak-Hour Traffic (Veh/Hour)  
 X,XXX = Average Daily Traffic (Vehicles/Day)

↑ = Stop Sign  
 = Traffic Signal





Not to scale



Traffic signal control (once warranted)

XX = AM Weekday Peak-Hour Traffic (Veh/Hour)  
 XX = PM Weekday Peak-Hour Traffic (Veh/Hour)  
 X,XXX = Average Daily Traffic (Vehicles/Day)

= Stop Sign  
 = Traffic Signal

Figure 8  
 2043 Total Traffic Volumes, Lane  
 Geometry, and Traffic Control  
 Printer's Hill (LSC# S224481)



# Traffic Counts

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# LSC Transportation Consultants, Inc.

2504 E. Pikes Peak Ave, Suite 304  
 Colorado Springs, CO 80909  
 719-633-2868

File Name : Union Blvd - Pikes Peak Ave AM

Site Code : S224480

Start Date : 9/21/2022

Page No : 1

## Groups Printed- Unshifted

Start Time	Union Blvd Southbound					Pikes Peak Ave Westbound					Union Blvd Northbound					Pikes Peak Ave Eastbound					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
06:30	9	12	5	0	26	3	12	3	0	18	2	19	1	0	22	1	16	5	0	22	88
06:35	6	32	10	0	48	3	15	3	0	21	3	24	0	0	27	2	15	3	0	20	116
06:40	10	36	5	0	51	1	17	1	0	19	2	34	3	0	39	3	15	8	0	26	135
06:45	7	27	6	0	40	6	26	1	0	33	2	22	6	0	30	5	22	10	0	37	140
06:50	11	30	7	0	48	6	31	2	0	39	5	42	8	0	55	9	26	10	0	45	187
06:55	11	38	7	0	56	2	22	1	0	25	3	23	4	0	30	6	20	6	0	32	143
Total	54	175	40	0	269	21	123	11	0	155	17	164	22	0	203	26	114	42	0	182	809
07:00	11	24	4	0	39	4	22	3	0	29	3	38	5	0	46	3	16	13	0	32	146
07:05	4	21	3	0	28	5	19	0	0	24	2	28	7	1	38	11	17	11	0	39	129
07:10	14	40	8	0	62	5	25	2	0	32	6	37	4	0	47	6	20	6	0	32	173
07:15	10	40	7	0	57	2	24	6	0	32	6	45	5	0	56	9	23	14	0	46	191
07:20	5	26	7	0	38	7	35	3	0	45	3	29	7	0	39	10	39	10	0	59	181
07:25	17	43	18	0	78	7	36	2	0	45	4	51	7	0	62	6	26	4	0	36	221
07:30	19	47	8	0	74	7	41	4	0	52	6	48	5	0	59	13	31	12	0	56	241
07:35	9	44	14	0	67	8	32	2	0	42	6	58	10	0	74	11	36	10	0	57	240
07:40	22	57	14	0	93	6	34	5	0	45	9	66	8	0	83	11	37	10	0	58	279
07:45	16	54	8	0	78	5	32	2	0	39	5	64	15	0	84	13	54	10	0	77	278
07:50	12	40	16	0	68	11	42	3	0	56	8	35	15	0	58	14	46	12	0	72	254
07:55	14	40	11	0	65	10	55	5	0	70	7	44	7	0	58	17	52	11	0	80	273
Total	153	476	118	0	747	77	397	37	0	511	65	543	95	1	704	124	397	123	0	644	2606
08:00	9	46	20	0	75	8	30	6	0	44	7	32	11	0	50	14	23	12	0	49	218
08:05	14	44	9	0	67	6	23	2	0	31	10	31	14	0	55	13	36	12	0	61	214
08:10	23	52	6	0	81	6	31	6	0	43	3	48	6	0	57	12	21	11	0	44	225
08:15	15	47	9	0	71	12	20	1	0	33	4	35	6	0	45	8	31	13	0	52	201
08:20	9	15	7	0	31	11	31	0	0	42	4	48	3	0	55	13	28	15	0	56	184
08:25	14	31	7	0	52	6	32	5	0	43	7	38	9	0	54	9	27	15	0	51	200
Grand Total	291	886	216	0	1393	147	687	68	0	902	117	939	166	1	1223	219	677	243	0	1139	4657
Apprch %	20.9	63.6	15.5	0		16.3	76.2	7.5	0		9.6	76.8	13.6	0.1		19.2	59.4	21.3	0		
Total %	6.2	19	4.6	0	29.9	3.2	14.8	1.5	0	19.4	2.5	20.2	3.6	0	26.3	4.7	14.5	5.2	0	24.5	

# LSC Transportation Consultants, Inc.

2504 E. Pikes Peak Ave, Suite 304  
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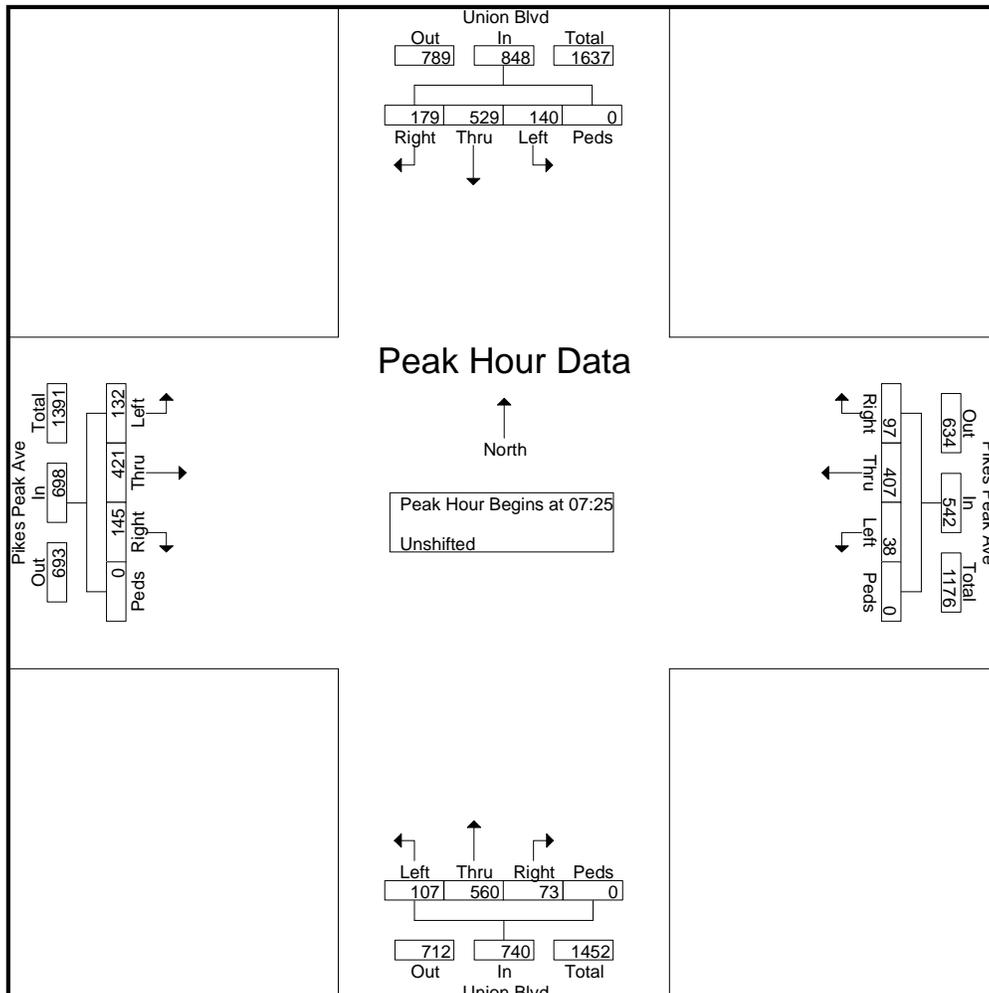
File Name : Union Blvd - Pikes Peak Ave AM

Site Code : S224480

Start Date : 9/21/2022

Page No : 2

Start Time	Union Blvd Southbound					Pikes Peak Ave Westbound					Union Blvd Northbound					Pikes Peak Ave Eastbound					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
Peak Hour Analysis From 06:30 to 08:25 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:25																					
07:25	17	43	18	0	78	7	36	2	0	45	4	51	7	0	62	6	26	4	0	36	221
07:30	19	47	8	0	74	7	41	4	0	52	6	48	5	0	59	13	31	12	0	56	241
07:35	9	44	14	0	67	8	32	2	0	42	6	58	10	0	74	11	36	10	0	57	240
07:40	22	<b>57</b>	14	0	<b>93</b>	6	34	5	0	45	9	<b>66</b>	8	0	83	11	37	10	0	58	<b>279</b>
07:45	16	54	8	0	78	5	32	2	0	39	5	64	<b>15</b>	0	<b>84</b>	13	<b>54</b>	10	0	77	278
07:50	12	40	16	0	68	11	42	3	0	56	8	35	15	0	58	14	46	12	0	72	254
07:55	14	40	11	0	65	10	<b>55</b>	5	0	<b>70</b>	7	44	7	0	58	<b>17</b>	52	11	0	<b>80</b>	273
08:00	9	46	<b>20</b>	0	75	8	30	<b>6</b>	0	44	7	32	11	0	50	14	23	12	0	49	218
08:05	14	44	9	0	67	6	23	2	0	31	<b>10</b>	31	14	0	55	13	36	12	0	61	214
08:10	<b>23</b>	52	6	0	81	6	31	6	0	43	3	48	6	0	57	12	21	11	0	44	225
08:15	15	47	9	0	71	<b>12</b>	20	1	0	33	4	35	6	0	45	8	31	13	0	52	201
08:20	9	15	7	0	31	11	31	0	0	42	4	48	3	0	55	13	28	<b>15</b>	0	56	184
Total Volume	179	529	140	0	848	97	407	38	0	542	73	560	107	0	740	145	421	132	0	698	2828
% App. Total	21.1	62.4	16.5	0		17.9	75.1	7	0		9.9	75.7	14.5	0		20.8	60.3	18.9	0		
PHF	.649	.773	.583	.000	.760	.674	.617	.528	.000	.645	.608	.707	.594	.000	.734	.711	.650	.733	.000	.727	.845



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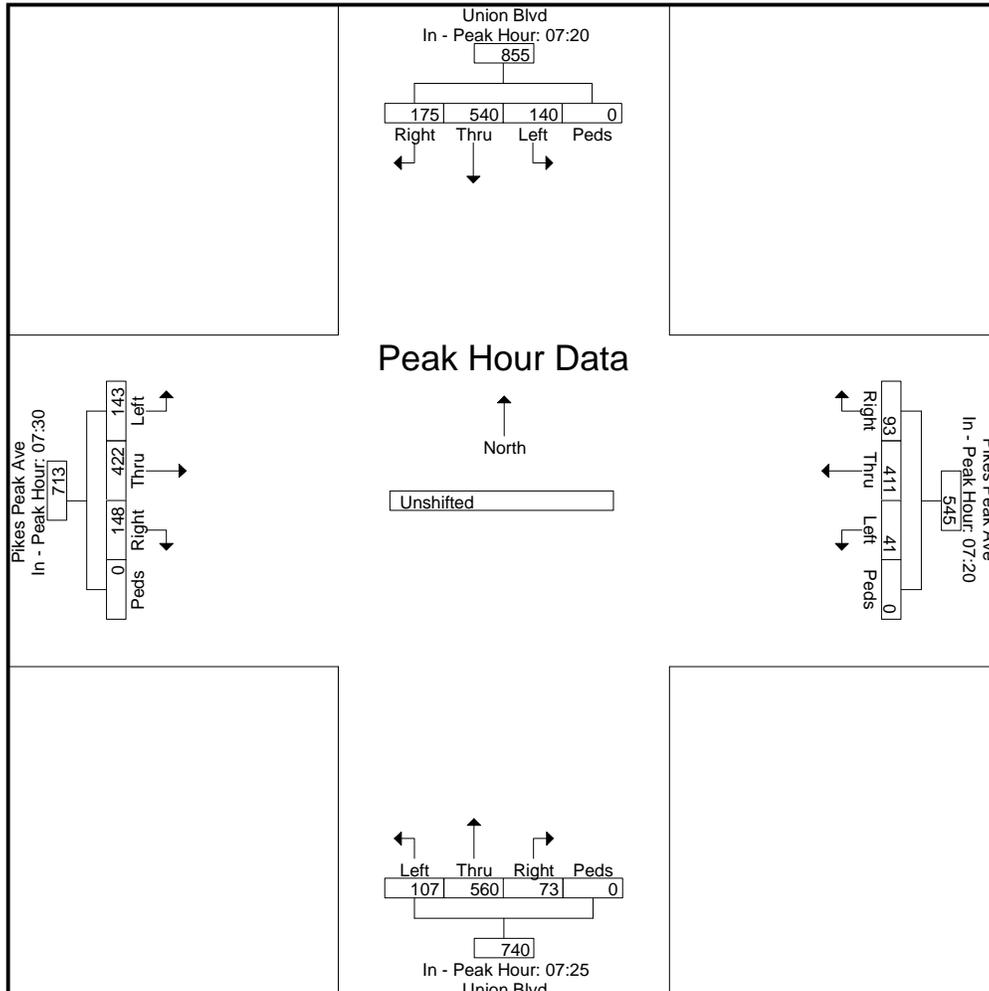
File Name : Union Blvd - Pikes Peak Ave AM  
 Site Code : S224480  
 Start Date : 9/21/2022  
 Page No : 3

Start Time	Union Blvd Southbound					Pikes Peak Ave Westbound					Union Blvd Northbound					Pikes Peak Ave Eastbound					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	

Peak Hour Analysis From 06:30 to 08:25 - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	07:20					07:20					07:25					07:30				
+0 mins.	5	26	7	0	38	7	35	3	0	45	4	51	7	0	62	13	31	12	0	56
+5 mins.	17	43	18	0	78	7	36	2	0	45	6	48	5	0	59	11	36	10	0	57
+10 mins.	19	47	8	0	74	7	41	4	0	52	6	58	10	0	74	11	37	10	0	58
+15 mins.	9	44	14	0	67	8	32	2	0	42	9	<b>66</b>	8	0	83	13	<b>54</b>	10	0	77
+20 mins.	22	<b>57</b>	14	0	<b>93</b>	6	34	5	0	45	5	64	<b>15</b>	0	<b>84</b>	14	46	12	0	72
+25 mins.	16	54	8	0	78	5	32	2	0	39	8	35	15	0	58	<b>17</b>	52	11	0	<b>80</b>
+30 mins.	12	40	16	0	68	11	42	3	0	56	7	44	7	0	58	14	23	12	0	49
+35 mins.	14	40	11	0	65	10	<b>55</b>	5	0	<b>70</b>	7	32	11	0	50	13	36	12	0	61
+40 mins.	9	46	<b>20</b>	0	75	8	30	<b>6</b>	0	44	<b>10</b>	31	14	0	55	12	21	11	0	44
+45 mins.	14	44	9	0	67	6	23	2	0	31	3	48	6	0	57	8	31	13	0	52
+50 mins.	<b>23</b>	52	6	0	81	6	31	6	0	43	4	35	6	0	45	13	28	<b>15</b>	0	56
+55 mins.	15	47	9	0	71	<b>12</b>	20	1	0	33	4	48	3	0	55	9	27	15	0	51
Total Volume	175	540	140	0	855	93	411	41	0	545	73	560	107	0	740	148	422	143	0	713
% App. Total	20.5	63.2	16.4	0		17.1	75.4	7.5	0		9.9	75.7	14.5	0		20.8	59.2	20.1	0	
PHF	.634	.789	.583	.000	.766	.646	.623	.569	.000	.649	.608	.707	.594	.000	.734	.725	.651	.794	.000	.743



# LSC Transportation Consultants, Inc.

2504 E. Pikes Peak Ave, Suite 304  
 Colorado Springs, CO 80909  
 719-633-2868

File Name : Union Blvd - Pikes Peak Ave PM

Site Code : S224480

Start Date : 9/20/2022

Page No : 1

## Groups Printed- Unshifted

Start Time	Union Blvd Southbound					Pikes Peak Ave Westbound					Union Blvd Northbound					Pikes Peak Ave Eastbound					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
16:00	11	57	10	0	78	10	28	6	0	44	3	46	7	0	56	4	26	17	0	47	225
16:05	12	53	15	0	80	7	30	15	0	52	3	46	6	0	55	6	50	20	0	76	263
16:10	10	52	11	0	73	8	36	10	0	54	2	55	10	0	67	11	51	19	0	81	275
16:15	12	59	11	0	82	11	36	7	0	54	7	46	7	0	60	6	57	17	0	80	276
16:20	10	40	16	0	66	13	25	4	0	42	2	38	12	0	52	7	36	13	0	56	216
16:25	9	46	13	0	68	10	20	4	0	34	3	40	13	0	56	9	52	17	0	78	236
16:30	14	65	10	0	89	7	30	5	0	42	7	56	13	0	76	8	45	19	0	72	279
16:35	13	53	2	0	68	3	32	12	0	47	2	60	15	0	77	10	49	22	0	81	273
16:40	12	71	7	0	90	8	32	9	0	49	2	50	10	0	62	8	27	10	0	45	246
16:45	11	55	8	0	74	12	34	5	0	51	5	45	9	0	59	3	44	17	0	64	248
16:50	18	53	12	0	83	2	32	4	0	38	1	47	18	0	66	9	44	19	0	72	259
16:55	15	68	9	0	92	7	20	3	0	30	1	46	9	0	56	5	33	16	0	54	232
Total	147	672	124	0	943	98	355	84	0	537	38	575	129	0	742	86	514	206	0	806	3028
17:00	12	48	4	0	64	13	34	4	0	51	6	58	17	0	81	5	30	17	0	52	248
17:05	16	48	5	0	69	17	33	8	0	58	8	42	14	0	64	5	49	24	0	78	269
17:10	13	56	6	0	75	13	44	5	0	62	4	61	15	0	80	15	71	18	0	104	321
17:15	11	65	11	0	87	5	29	9	0	43	5	33	12	0	50	8	61	14	0	83	263
17:20	23	48	11	0	82	7	26	4	0	37	5	40	22	0	67	8	61	18	0	87	273
17:25	16	51	11	0	78	11	26	6	0	43	5	55	10	0	70	8	45	12	0	65	256
17:30	18	35	13	1	67	5	21	6	0	32	1	37	13	0	51	7	38	24	0	69	219
17:35	14	31	5	0	50	9	35	3	0	47	4	33	6	0	43	7	44	24	0	75	215
17:40	15	39	10	0	64	5	15	7	0	27	4	49	7	0	60	6	32	13	0	51	202
17:45	15	34	7	0	56	1	16	7	0	24	0	34	10	0	44	5	36	18	0	59	183
17:50	13	43	11	0	67	17	20	5	0	42	8	47	8	0	63	9	18	16	0	43	215
17:55	13	29	10	0	52	9	17	14	0	40	1	48	8	0	57	9	35	14	0	58	207
Total	179	527	104	1	811	112	316	78	0	506	51	537	142	0	730	92	520	212	0	824	2871
Grand Total	326	1199	228	1	1754	210	671	162	0	1043	89	1112	271	0	1472	178	1034	418	0	1630	5899
Apprch %	18.6	68.4	13	0.1		20.1	64.3	15.5	0		6	75.5	18.4	0		10.9	63.4	25.6	0		
Total %	5.5	20.3	3.9	0	29.7	3.6	11.4	2.7	0	17.7	1.5	18.9	4.6	0	25	3	17.5	7.1	0	27.6	

# LSC Transportation Consultants, Inc.

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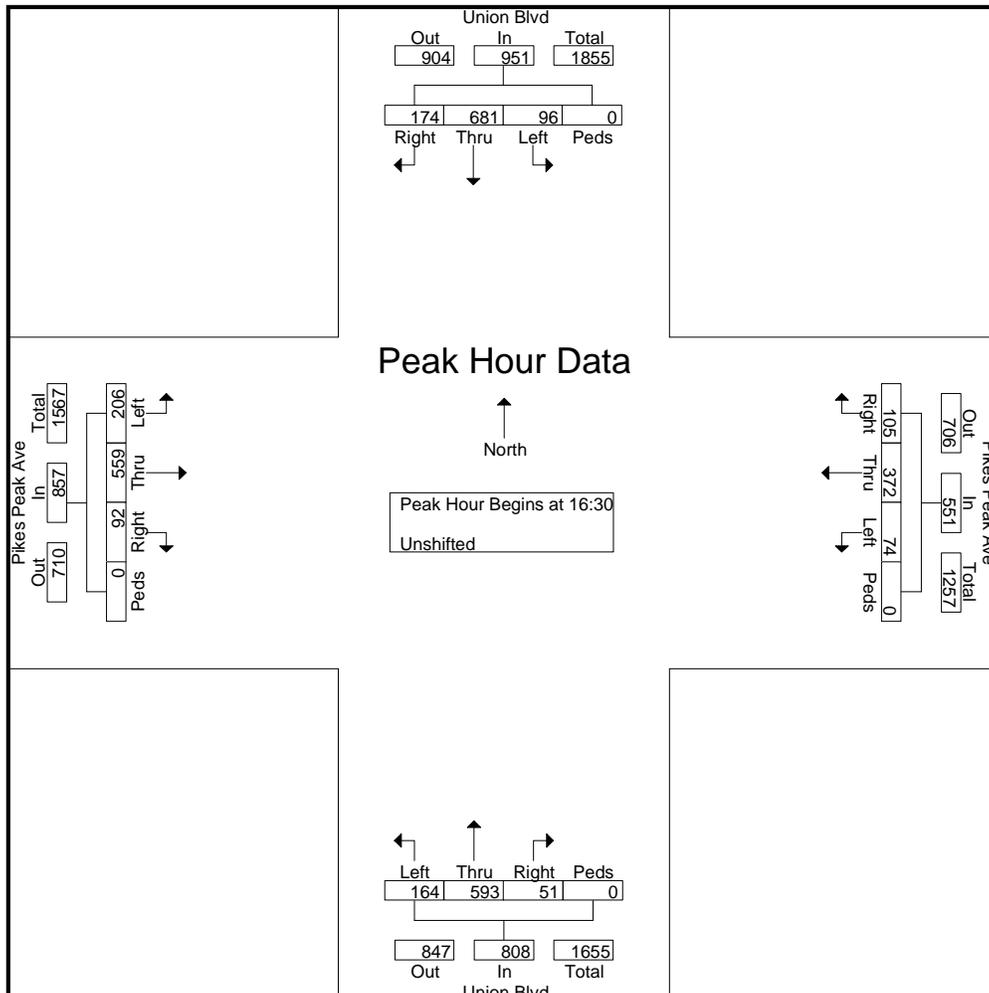
File Name : Union Blvd - Pikes Peak Ave PM

Site Code : S224480

Start Date : 9/20/2022

Page No : 2

Start Time	Union Blvd Southbound					Pikes Peak Ave Westbound					Union Blvd Northbound					Pikes Peak Ave Eastbound					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
Peak Hour Analysis From 16:00 to 17:55 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 16:30																					
16:30	14	65	10	0	89	7	30	5	0	42	7	56	13	0	76	8	45	19	0	72	279
16:35	13	53	2	0	68	3	32	12	0	47	2	60	15	0	77	10	49	22	0	81	273
16:40	12	71	7	0	90	8	32	9	0	49	2	50	10	0	62	8	27	10	0	45	246
16:45	11	55	8	0	74	12	34	5	0	51	5	45	9	0	59	3	44	17	0	64	248
16:50	18	53	12	0	83	2	32	4	0	38	1	47	18	0	66	9	44	19	0	72	259
16:55	15	68	9	0	92	7	20	3	0	30	1	46	9	0	56	5	33	16	0	54	232
17:00	12	48	4	0	64	13	34	4	0	51	6	58	17	0	81	5	30	17	0	52	248
17:05	16	48	5	0	69	17	33	8	0	58	8	42	14	0	64	5	49	24	0	78	269
17:10	13	56	6	0	75	13	44	5	0	62	4	61	15	0	80	15	71	18	0	104	321
17:15	11	65	11	0	87	5	29	9	0	43	5	33	12	0	50	8	61	14	0	83	263
17:20	23	48	11	0	82	7	26	4	0	37	5	40	22	0	67	8	61	18	0	87	273
17:25	16	51	11	0	78	11	26	6	0	43	5	55	10	0	70	8	45	12	0	65	256
Total Volume	174	681	96	0	951	105	372	74	0	551	51	593	164	0	808	92	559	206	0	857	3167
% App. Total	18.3	71.6	10.1	0		19.1	67.5	13.4	0		6.3	73.4	20.3	0		10.7	65.2	24	0		
PHF	.630	.799	.667	.000	.861	.515	.705	.514	.000	.741	.531	.810	.621	.000	.831	.511	.656	.715	.000	.687	.822



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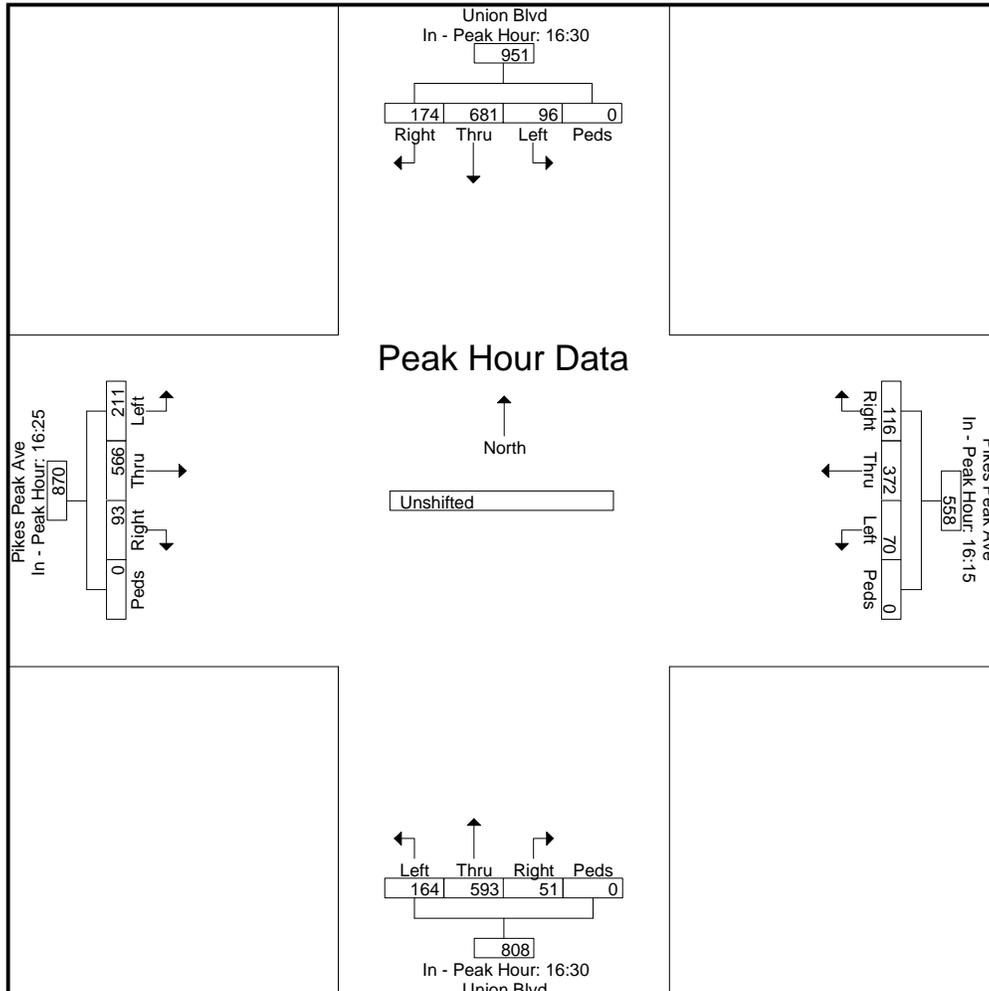
2504 E. Pikes Peak Ave, Suite 304  
 Colorado Springs, CO 80909  
 719-633-2868

File Name : Union Blvd - Pikes Peak Ave PM  
 Site Code : S224480  
 Start Date : 9/20/2022  
 Page No : 3

Start Time	Union Blvd Southbound					Pikes Peak Ave Westbound					Union Blvd Northbound					Pikes Peak Ave Eastbound					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	

Peak Hour Analysis From 16:00 to 17:55 - Peak 1 of 1  
 Peak Hour for Each Approach Begins at:

	16:30					16:15					16:30					16:25				
+0 mins.	14	65	10	0	89	11	36	7	0	54	7	56	13	0	76	9	52	17	0	78
+5 mins.	13	53	2	0	68	13	25	4	0	42	2	60	15	0	77	8	45	19	0	72
+10 mins.	12	<b>71</b>	7	0	90	10	20	4	0	34	2	50	10	0	62	10	49	22	0	81
+15 mins.	11	55	8	0	74	7	30	5	0	42	5	45	9	0	59	8	27	10	0	45
+20 mins.	18	53	<b>12</b>	0	83	3	32	<b>12</b>	0	47	1	47	18	0	66	3	44	17	0	64
+25 mins.	15	68	9	0	<b>92</b>	8	32	9	0	49	1	46	9	0	56	9	44	19	0	72
+30 mins.	12	48	4	0	64	12	34	5	0	51	6	58	17	0	<b>81</b>	5	33	16	0	54
+35 mins.	16	48	5	0	69	2	32	4	0	38	<b>8</b>	42	14	0	64	5	30	17	0	52
+40 mins.	13	56	6	0	75	7	20	3	0	30	4	<b>61</b>	15	0	80	5	49	<b>24</b>	0	78
+45 mins.	11	65	11	0	87	13	34	4	0	51	5	33	12	0	50	<b>15</b>	<b>71</b>	18	0	<b>104</b>
+50 mins.	<b>23</b>	48	11	0	82	<b>17</b>	33	8	0	58	5	40	<b>22</b>	0	67	8	61	14	0	83
+55 mins.	16	51	11	0	78	13	<b>44</b>	5	0	<b>62</b>	5	55	10	0	70	8	61	18	0	87
Total Volume	174	681	96	0	951	116	372	70	0	558	51	593	164	0	808	93	566	211	0	870
% App. Total	18.3	71.6	10.1	0		20.8	66.7	12.5	0		6.3	73.4	20.3	0		10.7	65.1	24.3	0	
PHF	.630	.799	.667	.000	.861	.569	.705	.486	.000	.750	.531	.810	.621	.000	.831	.517	.664	.733	.000	.697





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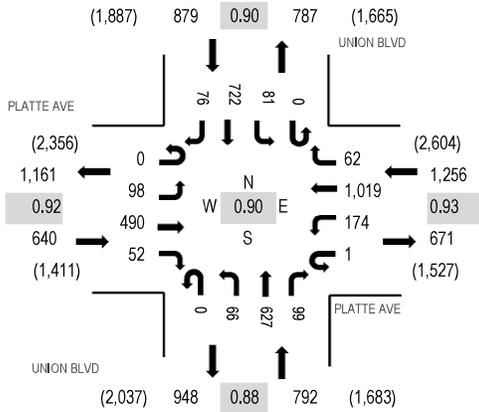
Location: 2 UNION BLVD & PLATTE AVE AM

Date: Tuesday, February 15, 2022

Peak Hour: 07:15 AM - 08:15 AM

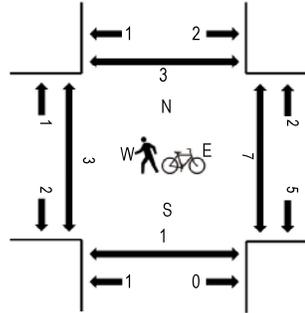
Peak 15-Minutes: 07:30 AM - 07:45 AM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles on Crosswalk



Traffic Counts

Interval Start Time	PLATTE AVE Eastbound				PLATTE AVE Westbound				UNION BLVD Northbound				UNION BLVD 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
6:30 AM	0	12	88	1	0	31	153	10	0	4	87	14	0	17	98	7	522	2,544	1	1	0	0
6:45 AM	0	9	93	7	1	54	155	9	0	8	98	19	0	19	115	11	598	3,014	0	0	0	0
7:00 AM	0	17	87	8	1	35	178	8	0	10	95	12	0	25	130	10	616	3,346	0	0	0	0
7:15 AM	0	21	113	6	0	43	227	18	0	15	129	31	0	20	170	15	808	3,567	0	0	0	1
7:30 AM	0	26	136	21	0	46	275	16	0	20	176	31	0	23	200	22	992	3,528	0	2	0	1
7:45 AM	0	31	132	14	0	37	264	12	0	16	164	20	0	19	201	20	930	3,305	1	2	1	0
8:00 AM	0	20	109	11	1	48	253	16	0	15	158	17	0	19	151	19	837	3,119	1	2	0	0
8:15 AM	0	30	123	18	1	38	198	16	0	13	137	29	0	17	128	21	769		0	2	1	0
8:30 AM	0	23	103	10	0	36	182	9	0	14	144	29	0	21	182	16	769		0	0	0	0
8:45 AM	2	16	113	11	1	29	182	21	0	16	137	25	0	18	158	15	744		1	0	0	0
Count Total	2	205	1,097	107	5	397	2,067	135	0	131	1,325	227	0	198	1,533	156	7,585		4	9	2	2
Peak Hour	0	98	490	52	1	174	1,019	62	0	66	627	99	0	81	722	76	3,567		2	6	1	2





(303) 216-2439  
www.alltrafficdata.net

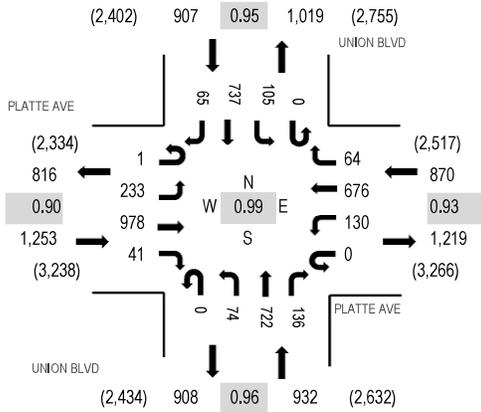
Location: 2 UNION BLVD & PLATTE AVE PM

Date: Tuesday, February 15, 2022

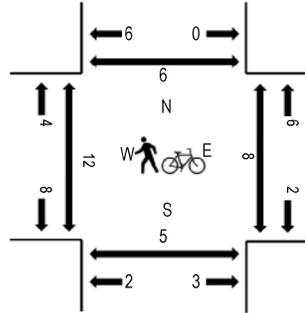
Peak Hour: 04:30 PM - 05:30 PM

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	PLATTE AVE Eastbound				PLATTE AVE Westbound				UNION BLVD Northbound				UNION BLVD 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
3:30 PM	0	43	220	14	0	29	172	20	0	19	174	52	0	26	183	18	970	3,827	0	6	0	3
3:45 PM	0	35	222	13	0	28	205	17	0	19	175	44	0	21	159	11	949	3,850	0	0	2	2
4:00 PM	0	44	237	8	0	40	164	21	0	21	186	33	0	32	203	14	1,003	3,891	3	0	2	0
4:15 PM	1	53	236	8	0	28	167	15	0	21	158	34	0	21	150	13	905	3,884	0	0	1	0
4:30 PM	0	48	212	14	0	30	202	15	0	22	179	33	0	23	202	13	993	3,962	3	2	1	1
4:45 PM	0	56	246	11	0	41	178	16	0	24	169	39	0	23	167	20	990	3,848	0	2	3	2
5:00 PM	0	69	237	10	0	29	160	20	0	12	192	30	0	30	189	18	996	3,625	3	3	0	1
5:15 PM	1	60	283	6	0	30	136	13	0	16	182	34	0	29	179	14	983	3,380	6	1	1	2
5:30 PM	0	54	220	9	0	35	166	16	0	13	156	30	0	20	148	12	879	3,000	0	1	0	5
5:45 PM	0	35	171	8	0	28	119	22	0	14	165	21	0	24	143	17	767		0	2	2	1
6:00 PM	0	31	165	10	0	31	136	22	0	16	148	40	0	14	124	14	751		0	0	0	1
6:15 PM	0	20	119	9	0	18	137	11	0	19	115	27	0	18	100	10	603		0	0	0	1
Count Total	2	548	2,568	120	0	367	1,942	208	0	216	1,999	417	0	281	1,947	174	10,789		15	17	12	19
Peak Hour	1	233	978	41	0	130	676	64	0	74	722	136	0	105	737	65	3,962		12	8	5	6



(303) 216-2439  
www.alltrafficdata.net

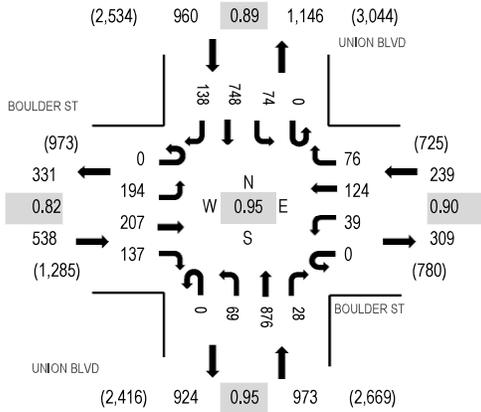
Location: 3 UNION BLVD & BOULDER ST PM

Date: Tuesday, February 15, 2022

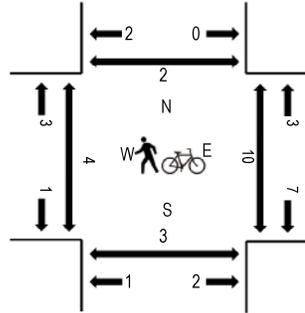
Peak Hour: 04:30 PM - 05:30 PM

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	BOULDER ST Eastbound				BOULDER ST Westbound				UNION BLVD Northbound				UNION BLVD 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
3:30 PM	0	45	40	36	0	9	26	28	0	9	204	13	0	17	177	22	626	2,535	2	3	1	4
3:45 PM	0	28	32	24	0	13	24	20	0	16	207	8	0	24	200	35	631	2,564	4	0	2	2
4:00 PM	0	43	39	38	0	15	42	20	0	23	205	13	0	22	173	28	661	2,643	3	0	2	3
4:15 PM	0	37	37	22	0	10	36	21	0	30	204	7	0	25	155	33	617	2,656	0	2	0	0
4:30 PM	0	59	58	47	0	10	34	19	0	13	195	3	0	21	161	35	655	2,710	2	8	2	1
4:45 PM	0	39	48	36	0	9	38	24	0	17	232	9	0	22	202	34	710	2,641	0	1	0	1
5:00 PM	0	61	62	30	0	11	27	22	0	24	213	8	0	13	174	29	674	2,445	0	0	1	0
5:15 PM	0	35	39	24	0	9	25	11	0	15	236	8	0	18	211	40	671	2,228	2	1	0	0
5:30 PM	0	43	45	24	0	14	41	22	0	21	194	3	0	12	131	36	586	1,968	1	1	0	0
5:45 PM	0	30	22	18	0	11	17	15	0	26	192	4	0	9	145	25	514		0	5	1	2
6:00 PM	0	25	33	15	0	10	32	12	0	11	147	9	0	14	123	26	457		0	2	1	0
6:15 PM	0	20	30	21	0	6	28	14	0	23	122	5	0	8	102	32	411		0	1	1	1
Count Total	0	465	485	335	0	127	370	228	0	228	2,351	90	0	205	1,954	375	7,213		14	24	11	14
Peak Hour	0	194	207	137	0	39	124	76	0	69	876	28	0	74	748	138	2,710		4	10	3	2

# LSC Transportation Consultants, Inc.

2504 E. Pikes Peak Ave, Suite 304  
 Colorado Springs, CO 80909  
 719-633-2868

File Name : Iowa Ave - Pikes Peak Ave AM

Site Code : S214480

Start Date : 10/20/2022

Page No : 1

### Groups Printed- Unshifted

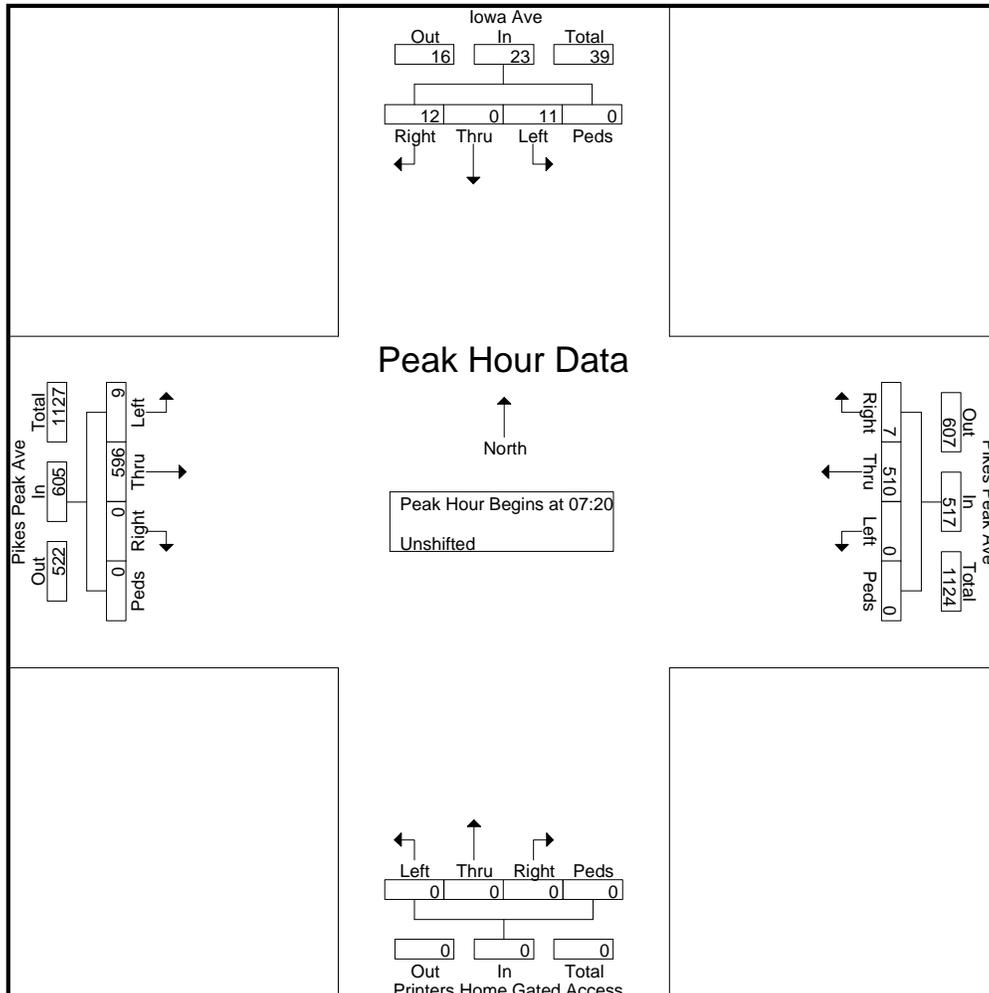
Start Time	Iowa Ave Southbound					Pikes Peak Ave Westbound					Printers Home Gated Access Northbound					Pikes Peak Ave Eastbound					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
07:00	0	0	1	0	1	1	21	0	0	22	0	0	0	0	0	0	22	0	0	22	45
07:05	0	0	0	0	0	0	25	0	0	25	0	0	0	0	0	0	29	0	0	29	54
07:10	0	0	2	0	2	0	39	0	0	39	0	0	0	0	0	0	27	0	0	27	68
07:15	1	0	0	0	1	0	33	0	0	33	0	0	0	0	0	0	33	1	0	34	68
07:20	0	0	0	0	0	1	56	0	0	57	0	0	0	0	0	0	36	1	0	37	94
07:25	2	0	0	0	2	0	30	0	0	30	0	0	0	0	0	0	51	1	0	52	84
07:30	2	0	0	0	2	0	41	0	0	41	0	0	0	0	0	0	42	1	0	43	86
07:35	2	0	0	0	2	1	29	0	0	30	0	0	0	0	0	0	43	0	0	43	75
07:40	0	0	0	0	0	1	43	0	0	44	0	0	0	0	0	0	55	1	0	56	100
07:45	1	0	0	0	1	0	54	0	0	54	0	0	0	0	0	0	72	0	0	72	127
07:50	1	0	3	0	4	1	56	0	0	57	0	0	0	0	0	0	53	1	0	54	115
07:55	1	0	0	0	1	1	31	0	0	32	0	0	0	0	0	0	83	3	0	86	119
<b>Total</b>	<b>10</b>	<b>0</b>	<b>6</b>	<b>0</b>	<b>16</b>	<b>6</b>	<b>458</b>	<b>0</b>	<b>0</b>	<b>464</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>546</b>	<b>9</b>	<b>0</b>	<b>555</b>	<b>1035</b>
08:00	1	0	3	0	4	0	61	0	0	61	0	0	0	0	0	0	49	0	0	49	114
08:05	1	0	1	0	2	0	41	0	0	41	0	0	0	0	0	0	41	1	0	42	85
08:10	1	0	2	0	3	0	34	0	0	34	0	0	0	0	0	0	35	0	0	35	72
08:15	0	0	2	0	2	2	34	0	0	36	0	0	0	0	0	0	36	0	0	36	74
08:20	0	0	1	0	1	3	42	0	0	45	0	0	0	0	0	0	43	0	0	43	89
08:25	2	0	2	0	4	0	23	0	0	23	0	0	0	0	0	0	34	0	0	34	61
<b>Grand Total</b>	<b>15</b>	<b>0</b>	<b>17</b>	<b>0</b>	<b>32</b>	<b>11</b>	<b>693</b>	<b>0</b>	<b>0</b>	<b>704</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>784</b>	<b>10</b>	<b>0</b>	<b>794</b>	<b>1530</b>
<b>Apprch %</b>	<b>46.9</b>	<b>0</b>	<b>53.1</b>	<b>0</b>		<b>1.6</b>	<b>98.4</b>	<b>0</b>	<b>0</b>		<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>		<b>0</b>	<b>98.7</b>	<b>1.3</b>	<b>0</b>		
<b>Total %</b>	<b>1</b>	<b>0</b>	<b>1.1</b>	<b>0</b>	<b>2.1</b>	<b>0.7</b>	<b>45.3</b>	<b>0</b>	<b>0</b>	<b>46</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>51.2</b>	<b>0.7</b>	<b>0</b>	<b>51.9</b>	

# LSC Transportation Consultants, Inc.

2504 E. Pikes Peak Ave, Suite 304  
 Colorado Springs, CO 80909  
 719-633-2868

File Name : Iowa Ave - Pikes Peak Ave AM  
 Site Code : S214480  
 Start Date : 10/20/2022  
 Page No : 2

Start Time	Iowa Ave Southbound					Pikes Peak Ave Westbound					Printers Home Gated Access Northbound					Pikes Peak Ave Eastbound					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
Peak Hour Analysis From 07:00 to 08:25 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:20																					
07:20	0	0	0	0	0	1	56	0	0	57	0	0	0	0	0	0	36	1	0	37	94
07:25	2	0	0	0	2	0	30	0	0	30	0	0	0	0	0	0	51	1	0	52	84
07:30	2	0	0	0	2	0	41	0	0	41	0	0	0	0	0	0	42	1	0	43	86
07:35	2	0	0	0	2	1	29	0	0	30	0	0	0	0	0	0	43	0	0	43	75
07:40	0	0	0	0	0	1	43	0	0	44	0	0	0	0	0	0	55	1	0	56	100
07:45	1	0	0	0	1	0	54	0	0	54	0	0	0	0	0	0	72	0	0	72	127
07:50	1	0	3	0	4	1	56	0	0	57	0	0	0	0	0	0	53	1	0	54	115
07:55	1	0	0	0	1	1	31	0	0	32	0	0	0	0	0	0	83	3	0	86	119
08:00	1	0	3	0	4	0	61	0	0	61	0	0	0	0	0	0	49	0	0	49	114
08:05	1	0	1	0	2	0	41	0	0	41	0	0	0	0	0	0	41	1	0	42	85
08:10	1	0	2	0	3	0	34	0	0	34	0	0	0	0	0	0	35	0	0	35	72
08:15	0	0	2	0	2	2	34	0	0	36	0	0	0	0	0	0	36	0	0	36	74
Total Volume	12	0	11	0	23	7	510	0	0	517	0	0	0	0	0	0	596	9	0	605	1145
% App. Total	52.2	0	47.8	0		1.4	98.6	0	0		0	0	0	0		0	98.5	1.5	0		
PHF	.500	.000	.306	.000	.479	.292	.697	.000	.000	.706	.000	.000	.000	.000	.000	.000	.598	.250	.000	.586	.751



# LSC Transportation Consultants, Inc.

2504 E. Pikes Peak Ave, Suite 304  
 Colorado Springs, CO 80909  
 719-633-2868

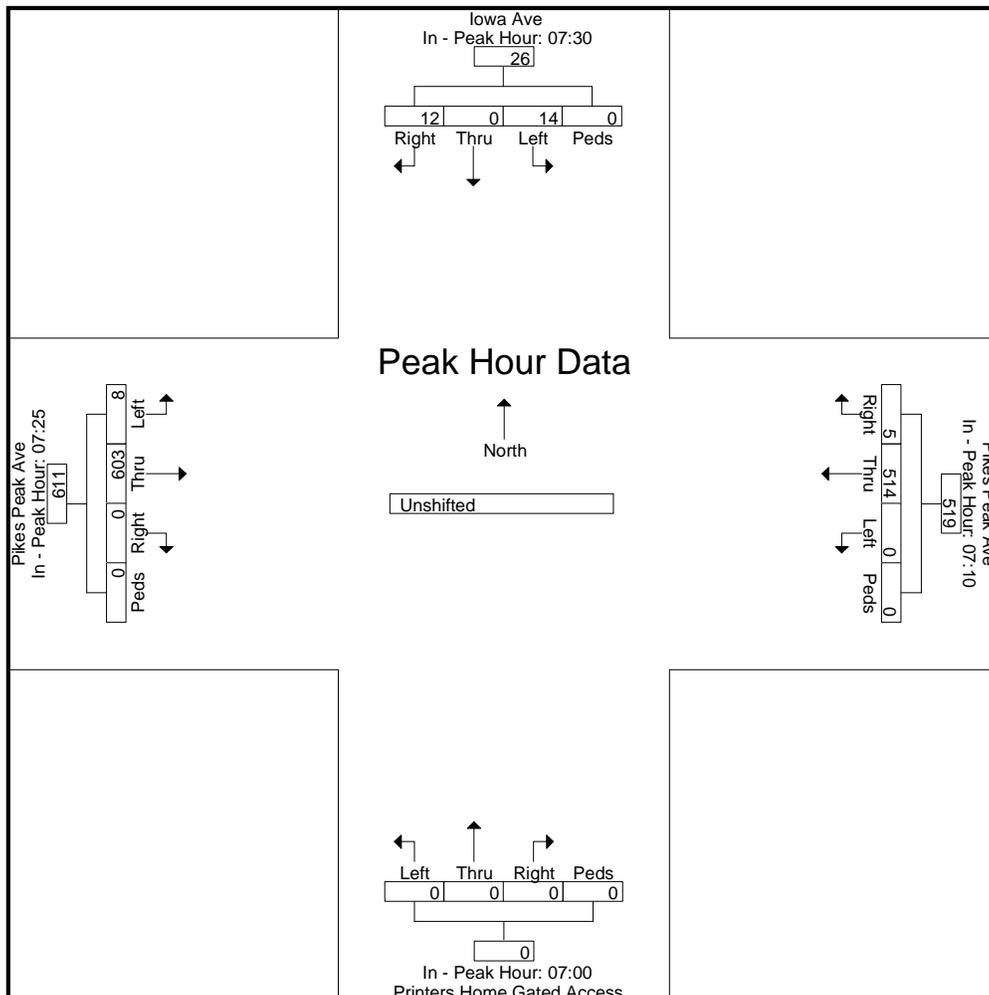
File Name : Iowa Ave - Pikes Peak Ave AM

Site Code : S214480

Start Date : 10/20/2022

Page No : 3

	Iowa Ave Southbound					Pikes Peak Ave Westbound					Printers Home Gated Access Northbound					Pikes Peak Ave Eastbound					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
Peak Hour Analysis From 07:00 to 08:25 - Peak 1 of 1																					
Peak Hour for Each Approach Begins at:																					
	07:30					07:10					07:00					07:25					
+0 mins.	2	0	0	0	2	0	39	0	0	39	0	0	0	0	0	0	51	1	0	52	
+5 mins.	2	0	0	0	2	0	33	0	0	33	0	0	0	0	0	0	42	1	0	43	
+10 mins.	0	0	0	0	0	1	56	0	0	57	0	0	0	0	0	0	43	0	0	43	
+15 mins.	1	0	0	0	1	0	30	0	0	30	0	0	0	0	0	0	55	1	0	56	
+20 mins.	1	0	3	0	4	0	41	0	0	41	0	0	0	0	0	0	72	0	0	72	
+25 mins.	1	0	0	0	1	1	29	0	0	30	0	0	0	0	0	0	53	1	0	54	
+30 mins.	1	0	3	0	4	1	43	0	0	44	0	0	0	0	0	0	83	3	0	86	
+35 mins.	1	0	1	0	2	0	54	0	0	54	0	0	0	0	0	0	49	0	0	49	
+40 mins.	1	0	2	0	3	1	56	0	0	57	0	0	0	0	0	0	41	1	0	42	
+45 mins.	0	0	2	0	2	1	31	0	0	32	0	0	0	0	0	0	35	0	0	35	
+50 mins.	0	0	1	0	1	0	61	0	0	61	0	0	0	0	0	0	36	0	0	36	
+55 mins.	2	0	2	0	4	0	41	0	0	41	0	0	0	0	0	0	43	0	0	43	
Total Volume	12	0	14	0	26	5	514	0	0	519	0	0	0	0	0	0	603	8	0	611	
% App. Total	46.2	0	53.8	0		1	99	0	0		0	0	0	0		0	98.7	1.3	0		
PHF	.500	.000	.389	.000	.542	.417	.702	.000	.000	.709	.000	.000	.000	.000	.000	.000	.605	.222	.000	.592	



# LSC Transportation Consultants, Inc.

2504 E. Pikes Peak Ave, Suite 304  
 Colorado Springs, CO 80909  
 719-633-2868

File Name : Iowa Ave - Pikes Peak Ave PM

Site Code : S214480

Start Date : 10/20/2022

Page No : 1

### Groups Printed- Unshifted

Start Time	Iowa Ave Southbound					Pikes Peak Ave Westbound					Printers Home Gated Access Northbound					Pikes Peak Ave Eastbound					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
16:00	3	0	2	0	5	0	45	0	0	45	0	0	0	0	0	0	40	1	0	41	91
16:05	1	0	1	0	2	0	56	0	0	56	0	0	0	0	0	0	53	1	0	54	112
16:10	0	0	2	0	2	2	38	0	0	40	0	0	0	0	0	0	61	4	0	65	107
16:15	1	0	0	0	1	2	56	0	0	58	0	0	0	0	0	0	86	1	0	87	146
16:20	4	0	6	0	10	1	60	0	0	61	0	0	0	0	0	0	55	2	0	57	128
16:25	1	0	1	0	2	1	45	0	0	46	0	0	0	0	0	0	61	0	0	61	109
16:30	0	0	1	0	1	1	46	0	0	47	0	0	0	0	0	0	46	0	0	46	94
16:35	2	0	1	0	3	0	50	0	0	50	0	0	0	0	0	0	51	1	0	52	105
16:40	0	0	0	0	0	3	50	0	0	53	0	0	0	0	0	0	61	1	0	62	115
16:45	0	0	2	0	2	1	62	0	0	63	0	0	0	0	0	0	51	1	0	52	117
16:50	0	0	1	0	1	4	31	0	0	35	0	0	0	0	0	0	67	3	1	71	107
16:55	2	0	2	0	4	2	39	0	0	41	0	0	0	0	0	0	51	2	0	53	98
<b>Total</b>	<b>14</b>	<b>0</b>	<b>19</b>	<b>0</b>	<b>33</b>	<b>17</b>	<b>578</b>	<b>0</b>	<b>0</b>	<b>595</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>683</b>	<b>17</b>	<b>1</b>	<b>701</b>	<b>1329</b>
17:00	2	0	1	0	3	0	31	0	0	31	0	0	0	0	0	0	48	2	0	50	84
17:05	1	0	3	0	4	0	48	0	0	48	0	0	0	0	0	0	71	4	0	75	127
17:10	0	0	2	0	2	2	38	0	0	40	0	0	0	0	0	0	63	1	0	64	106
17:15	1	0	1	0	2	1	28	0	0	29	0	0	0	0	0	0	56	1	0	57	88
17:20	3	0	3	0	6	0	43	0	0	43	0	0	0	0	0	0	45	0	0	45	94
17:25	0	0	3	0	3	2	35	0	0	37	0	0	0	0	0	0	48	3	0	51	91
<b>Grand Total</b>	<b>21</b>	<b>0</b>	<b>32</b>	<b>0</b>	<b>53</b>	<b>22</b>	<b>801</b>	<b>0</b>	<b>0</b>	<b>823</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1014</b>	<b>28</b>	<b>1</b>	<b>1043</b>	<b>1919</b>
<b>Apprch %</b>	<b>39.6</b>	<b>0</b>	<b>60.4</b>	<b>0</b>		<b>2.7</b>	<b>97.3</b>	<b>0</b>	<b>0</b>		<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>97.2</b>	<b>2.7</b>	<b>0.1</b>		
<b>Total %</b>	<b>1.1</b>	<b>0</b>	<b>1.7</b>	<b>0</b>	<b>2.8</b>	<b>1.1</b>	<b>41.7</b>	<b>0</b>	<b>0</b>	<b>42.9</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>52.8</b>	<b>1.5</b>	<b>0.1</b>	<b>54.4</b>	

# LSC Transportation Consultants, Inc.

2504 E. Pikes Peak Ave, Suite 304  
 Colorado Springs, CO 80909  
 719-633-2868

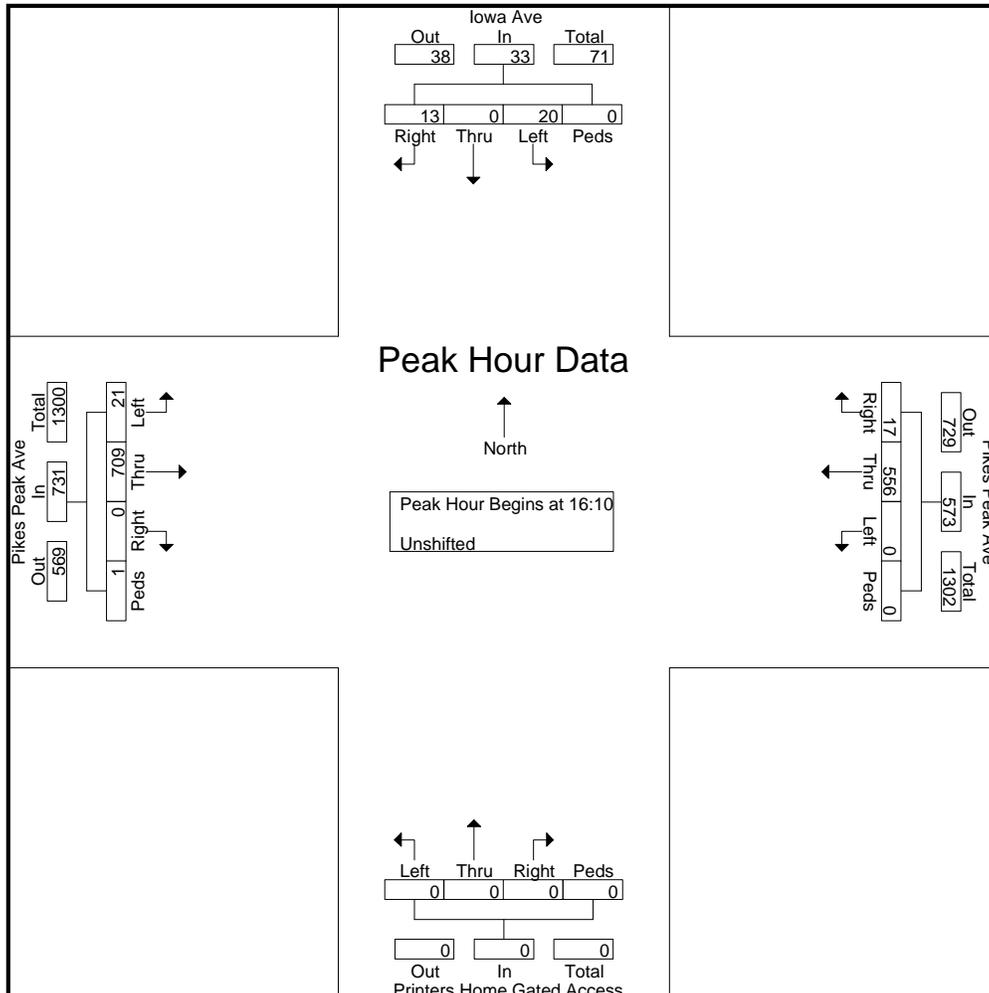
File Name : Iowa Ave - Pikes Peak Ave PM

Site Code : S214480

Start Date : 10/20/2022

Page No : 2

Start Time	Iowa Ave Southbound					Pikes Peak Ave Westbound					Printers Home Gated Access Northbound					Pikes Peak Ave Eastbound					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
Peak Hour Analysis From 16:00 to 17:25 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 16:10																					
16:10	0	0	2	0	2	2	38	0	0	40	0	0	0	0	0	0	61	4	0	65	107
16:15	1	0	0	0	1	2	56	0	0	58	0	0	0	0	0	0	86	1	0	87	146
16:20	4	0	6	0	10	1	60	0	0	61	0	0	0	0	0	0	55	2	0	57	128
16:25	1	0	1	0	2	1	45	0	0	46	0	0	0	0	0	0	61	0	0	61	109
16:30	0	0	1	0	1	1	46	0	0	47	0	0	0	0	0	0	46	0	0	46	94
16:35	2	0	1	0	3	0	50	0	0	50	0	0	0	0	0	0	51	1	0	52	105
16:40	0	0	0	0	0	3	50	0	0	53	0	0	0	0	0	0	61	1	0	62	115
16:45	0	0	2	0	2	1	62	0	0	63	0	0	0	0	0	0	51	1	0	52	117
16:50	0	0	1	0	1	4	31	0	0	35	0	0	0	0	0	0	67	3	1	71	107
16:55	2	0	2	0	4	2	39	0	0	41	0	0	0	0	0	0	51	2	0	53	98
17:00	2	0	1	0	3	0	31	0	0	31	0	0	0	0	0	0	48	2	0	50	84
17:05	1	0	3	0	4	0	48	0	0	48	0	0	0	0	0	0	71	4	0	75	127
Total Volume	13	0	20	0	33	17	556	0	0	573	0	0	0	0	0	0	709	21	1	731	1337
% App. Total	39.4	0	60.6	0		3	97	0	0		0	0	0	0		0	97	2.9	0.1		
PHF	.271	.000	.278	.000	.275	.354	.747	.000	.000	.758	.000	.000	.000	.000	.000	.000	.687	.438	.083	.700	.763

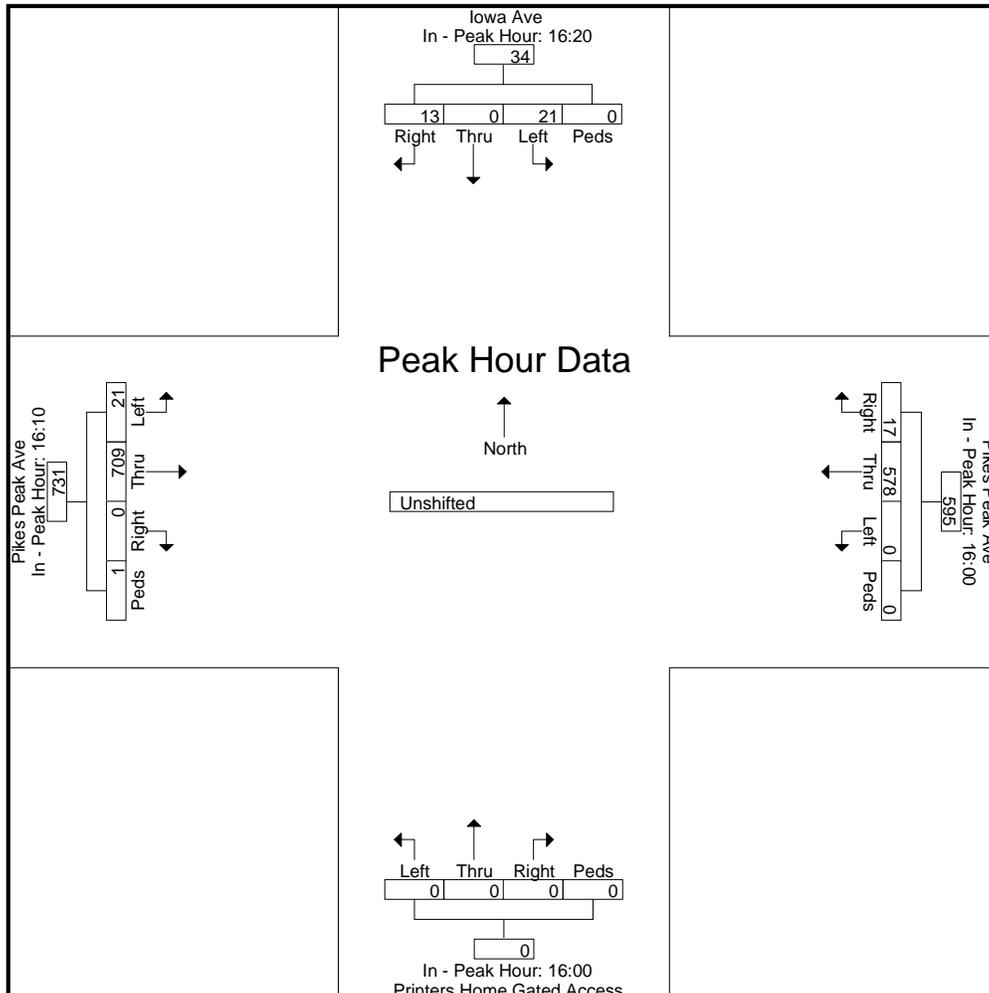


# LSC Transportation Consultants, Inc.

2504 E. Pikes Peak Ave, Suite 304  
 Colorado Springs, CO 80909  
 719-633-2868

File Name : Iowa Ave - Pikes Peak Ave PM  
 Site Code : S214480  
 Start Date : 10/20/2022  
 Page No : 3

	Iowa Ave Southbound					Pikes Peak Ave Westbound					Printers Home Gated Access Northbound					Pikes Peak Ave Eastbound					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
Peak Hour Analysis From 16:00 to 17:25 - Peak 1 of 1																					
Peak Hour for Each Approach Begins at:																					
	16:20					16:00					16:00					16:10					
+0 mins.	4	0	6	0	10	0	45	0	0	45	0	0	0	0	0	0	61	4	0	65	
+5 mins.	1	0	1	0	2	0	56	0	0	56	0	0	0	0	0	0	86	1	0	87	
+10 mins.	0	0	1	0	1	2	38	0	0	40	0	0	0	0	0	0	55	2	0	57	
+15 mins.	2	0	1	0	3	2	56	0	0	58	0	0	0	0	0	0	61	0	0	61	
+20 mins.	0	0	0	0	0	1	60	0	0	61	0	0	0	0	0	0	46	0	0	46	
+25 mins.	0	0	2	0	2	1	45	0	0	46	0	0	0	0	0	0	51	1	0	52	
+30 mins.	0	0	1	0	1	1	46	0	0	47	0	0	0	0	0	0	61	1	0	62	
+35 mins.	2	0	2	0	4	0	50	0	0	50	0	0	0	0	0	0	51	1	0	52	
+40 mins.	2	0	1	0	3	3	50	0	0	53	0	0	0	0	0	0	67	3	1	71	
+45 mins.	1	0	3	0	4	1	62	0	0	63	0	0	0	0	0	0	51	2	0	53	
+50 mins.	0	0	2	0	2	4	31	0	0	35	0	0	0	0	0	0	48	2	0	50	
+55 mins.	1	0	1	0	2	2	39	0	0	41	0	0	0	0	0	0	71	4	0	75	
Total Volume	13	0	21	0	34	17	578	0	0	595	0	0	0	0	0	0	709	21	1	731	
% App. Total	38.2	0	61.8	0		2.9	97.1	0	0		0	0	0	0		0	97	2.9	0.1		
PHF	.271	.000	.292	.000	.283	.354	.777	.000	.000	.787	.000	.000	.000	.000	.000	.000	.687	.438	.083	.700	



# LSC Transportation Consultants, Inc.

2504 E. Pikes Peak Ave, Suite 304  
 Colorado Springs, CO 80909  
 719-633-2868

File Name : Printers Pkwy - Pikes Peak Ave AM

Site Code : S224480

Start Date : 9/20/2022

Page No : 1

## Groups Printed- Unshifted

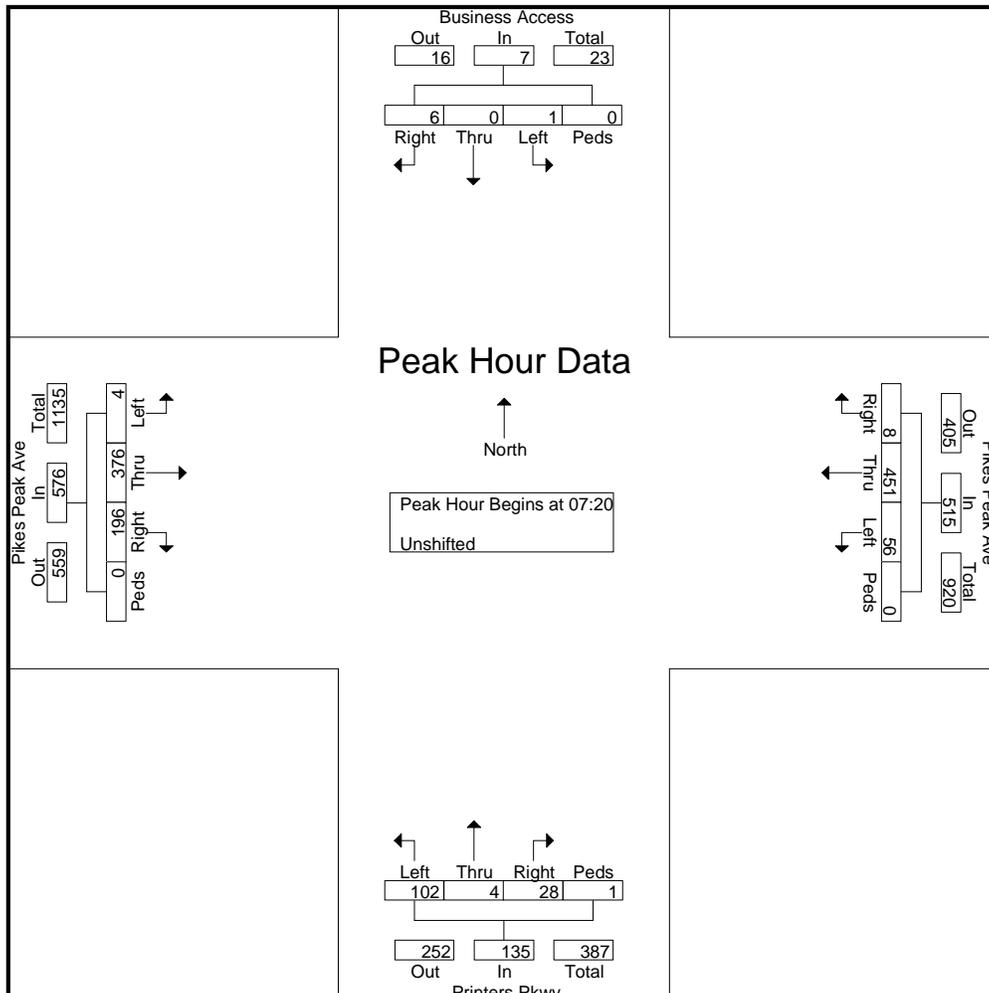
Start Time	Business Access Southbound					Pikes Peak Ave Westbound					Printers Pkwy Northbound					Pikes Peak Ave Eastbound					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
06:30	0	0	0	0	0	0	10	6	0	16	1	0	0	0	1	5	12	0	0	17	34
06:35	0	0	0	0	0	0	16	3	0	19	0	0	3	0	3	14	9	0	0	23	45
06:40	0	0	0	0	0	0	23	6	0	29	1	0	10	0	11	11	18	0	0	29	69
06:45	0	0	0	0	0	0	24	3	0	27	4	0	5	0	9	8	16	0	0	24	60
06:50	0	0	1	0	1	0	21	5	0	26	6	0	2	0	8	16	15	0	0	31	66
06:55	0	0	1	0	1	0	24	3	0	27	3	0	11	0	14	9	16	1	0	26	68
Total	0	0	2	0	2	0	118	26	0	144	15	0	31	0	46	63	86	1	0	150	342
07:00	0	0	0	0	0	0	20	2	0	22	4	0	5	0	9	5	12	1	0	18	49
07:05	1	0	0	0	1	0	26	2	0	28	1	1	12	0	14	9	19	1	0	29	72
07:10	0	0	0	0	0	0	22	2	0	24	0	0	4	0	4	5	26	1	0	32	60
07:15	1	0	1	0	2	0	30	3	0	33	0	0	1	0	1	16	24	1	0	41	77
07:20	1	0	0	0	1	0	38	6	0	44	4	0	12	0	16	14	25	0	0	39	100
07:25	0	0	0	0	0	0	38	6	0	44	1	0	2	0	3	15	24	0	0	39	86
07:30	0	0	0	0	0	0	33	5	0	38	3	0	7	0	10	18	33	0	0	51	99
07:35	0	0	0	0	0	0	30	2	0	32	2	0	10	0	12	16	30	1	0	47	91
07:40	0	0	0	0	0	1	53	4	0	58	0	0	6	0	6	18	35	0	0	53	117
07:45	2	0	0	0	2	0	40	3	0	43	1	0	7	0	8	18	32	0	0	50	103
07:50	0	0	0	0	0	1	43	7	0	51	1	0	9	1	11	23	33	0	0	56	118
07:55	1	0	0	0	1	1	39	7	0	47	5	1	9	0	15	20	40	1	0	61	124
Total	6	0	1	0	7	3	412	49	0	464	22	2	84	1	109	177	333	6	0	516	1096
08:00	1	0	0	0	1	1	34	0	0	35	4	0	11	0	15	19	42	0	0	61	112
08:05	1	0	1	0	2	1	43	4	0	48	2	1	14	0	17	12	26	0	0	38	105
08:10	0	0	0	0	0	1	25	8	0	34	2	1	5	0	8	8	32	1	0	41	83
08:15	0	0	0	0	0	2	35	4	0	41	3	1	10	0	14	15	24	1	0	40	95
08:20	2	0	0	0	2	2	35	2	0	39	1	1	14	0	16	16	24	2	0	42	99
08:25	0	0	2	0	2	1	30	3	0	34	3	1	6	0	10	9	25	2	0	36	82
Grand Total	10	0	6	0	16	11	732	96	0	839	52	7	175	1	235	319	592	13	0	924	2014
Apprch %	62.5	0	37.5	0		1.3	87.2	11.4	0		22.1	3	74.5	0.4		34.5	64.1	1.4	0		
Total %	0.5	0	0.3	0	0.8	0.5	36.3	4.8	0	41.7	2.6	0.3	8.7	0	11.7	15.8	29.4	0.6	0	45.9	

# LSC Transportation Consultants, Inc.

2504 E. Pikes Peak Ave, Suite 304  
 Colorado Springs, CO 80909  
 719-633-2868

File Name : Printers Pkwy - Pikes Peak Ave AM  
 Site Code : S224480  
 Start Date : 9/20/2022  
 Page No : 2

Start Time	Business Access Southbound					Pikes Peak Ave Westbound					Printers Pkwy Northbound					Pikes Peak Ave Eastbound					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
Peak Hour Analysis From 06:30 to 08:25 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:20																					
07:20	1	0	0	0	1	0	38	6	0	44	4	0	12	0	16	14	25	0	0	39	100
07:25	0	0	0	0	0	0	38	6	0	44	1	0	2	0	3	15	24	0	0	39	86
07:30	0	0	0	0	0	0	33	5	0	38	3	0	7	0	10	18	33	0	0	51	99
07:35	0	0	0	0	0	0	30	2	0	32	2	0	10	0	12	16	30	1	0	47	91
07:40	0	0	0	0	0	1	53	4	0	58	0	0	6	0	6	18	35	0	0	53	117
07:45	2	0	0	0	2	0	40	3	0	43	1	0	7	0	8	18	32	0	0	50	103
07:50	0	0	0	0	0	1	43	7	0	51	1	0	9	1	11	23	33	0	0	56	118
07:55	1	0	0	0	1	1	39	7	0	47	5	1	9	0	15	20	40	1	0	61	124
08:00	1	0	0	0	1	1	34	0	0	35	4	0	11	0	15	19	42	0	0	61	112
08:05	1	0	1	0	2	1	43	4	0	48	2	1	14	0	17	12	26	0	0	38	105
08:10	0	0	0	0	0	1	25	8	0	34	2	1	5	0	8	8	32	1	0	41	83
08:15	0	0	0	0	0	2	35	4	0	41	3	1	10	0	14	15	24	1	0	40	95
Total Volume	6	0	1	0	7	8	451	56	0	515	28	4	102	1	135	196	376	4	0	576	1233
% App. Total	85.7	0	14.3	0		1.6	87.6	10.9	0		20.7	3	75.6	0.7		34	65.3	0.7	0		
PHF	.250	.000	.083	.000	.292	.333	.709	.583	.000	.740	.467	.333	.607	.083	.662	.710	.746	.333	.000	.787	.829



# LSC Transportation Consultants, Inc.

2504 E. Pikes Peak Ave, Suite 304  
 Colorado Springs, CO 80909  
 719-633-2868

File Name : Printers Pkwy - Pikes Peak Ave AM

Site Code : S224480

Start Date : 9/20/2022

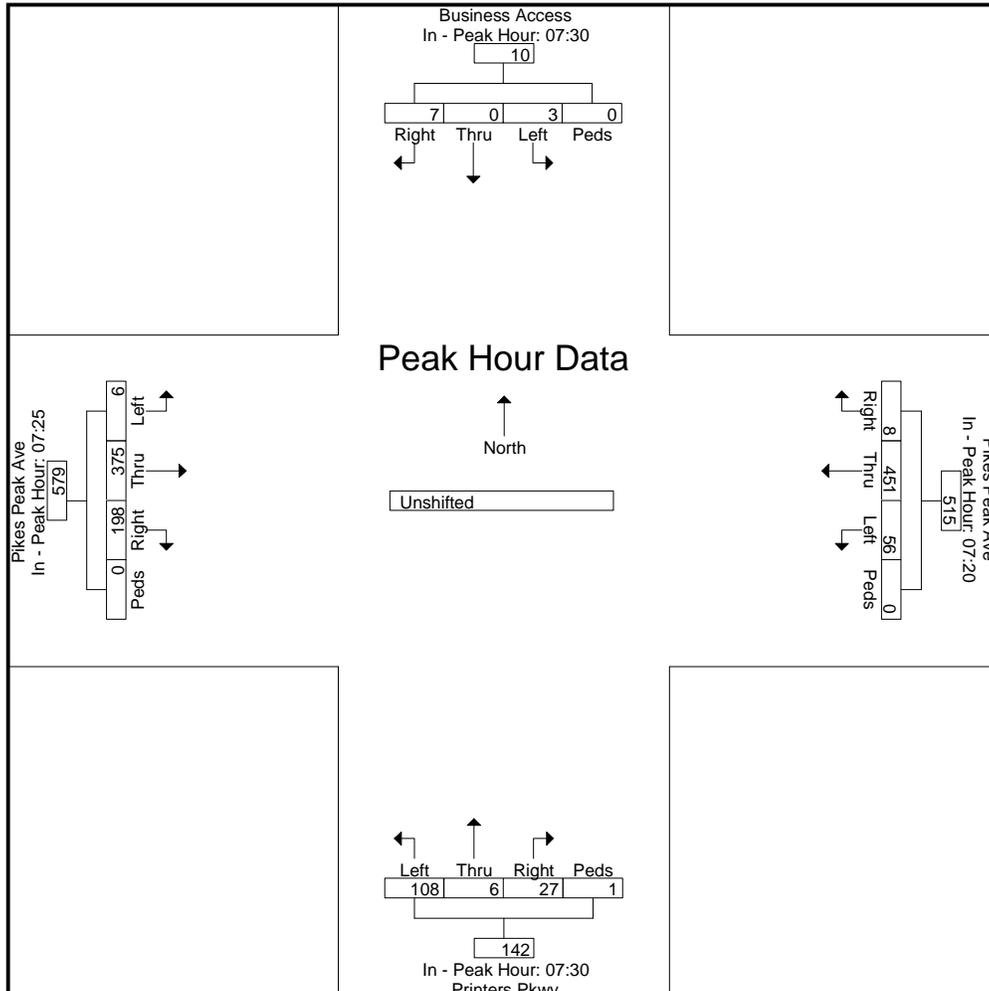
Page No : 3

Start Time	Business Access Southbound					Pikes Peak Ave Westbound					Printers Pkwy Northbound					Pikes Peak Ave Eastbound					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	

Peak Hour Analysis From 06:30 to 08:25 - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	07:30					07:20					07:30					07:25				
+0 mins.	0	0	0	0	0	0	38	6	0	44	3	0	7	0	10	15	24	0	0	39
+5 mins.	0	0	0	0	0	0	38	6	0	44	2	0	10	0	12	18	33	0	0	51
+10 mins.	0	0	0	0	0	0	33	5	0	38	0	0	6	0	6	16	30	1	0	47
+15 mins.	2	0	0	0	2	0	30	2	0	32	1	0	7	0	8	18	35	0	0	53
+20 mins.	0	0	0	0	0	1	53	4	0	58	1	0	9	1	11	18	32	0	0	50
+25 mins.	1	0	0	0	1	0	40	3	0	43	5	1	9	0	15	23	33	0	0	56
+30 mins.	1	0	0	0	1	1	43	7	0	51	4	0	11	0	15	20	40	1	0	61
+35 mins.	1	0	1	0	2	1	39	7	0	47	2	1	14	0	17	19	42	0	0	61
+40 mins.	0	0	0	0	0	1	34	0	0	35	2	1	5	0	8	12	26	0	0	38
+45 mins.	0	0	0	0	0	1	43	4	0	48	3	1	10	0	14	8	32	1	0	41
+50 mins.	2	0	0	0	2	1	25	8	0	34	1	1	14	0	16	15	24	1	0	40
+55 mins.	0	0	2	0	2	2	35	4	0	41	3	1	6	0	10	16	24	2	0	42
Total Volume	7	0	3	0	10	8	451	56	0	515	27	6	108	1	142	198	375	6	0	579
% App. Total	70	0	30	0		1.6	87.6	10.9	0		19	4.2	76.1	0.7		34.2	64.8	1	0	
PHF	.292	.000	.125	.000	.417	.333	.709	.583	.000	.740	.450	.500	.643	.083	.696	.717	.744	.250	.000	.791



# LSC Transportation Consultants, Inc.

2504 E. Pikes Peak Ave, Suite 304  
 Colorado Springs, CO 80909  
 719-633-2868

File Name : Printers Pkwy - Pikes Peak Ave PM

Site Code : S224480

Start Date : 9/15/2022

Page No : 1

## Groups Printed- Unshifted

Start Time	Business Access Southbound					Pikes Peak Ave Westbound					Printers Pkwy Northbound					Pikes Peak Ave Eastbound					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
16:00	10	1	3	0	14	1	99	10	0	110	24	4	31	0	59	40	119	5	0	164	347
16:15	6	0	3	0	9	0	95	7	0	102	7	3	34	0	44	37	139	7	0	183	338
16:30	3	1	4	0	8	12	88	6	0	106	15	1	29	0	45	38	140	8	0	186	345
16:45	7	1	1	0	9	4	89	8	0	101	10	5	29	0	44	35	146	3	0	184	338
Total	26	3	11	0	40	17	371	31	0	419	56	13	123	0	192	150	544	23	0	717	1368
17:00	1	1	2	0	4	4	88	5	0	97	15	1	43	0	59	50	143	4	0	197	357
17:15	2	0	1	0	3	8	89	5	0	102	10	1	31	0	42	51	153	1	0	205	352
17:30	2	2	0	0	4	2	77	6	0	85	7	1	24	0	32	35	108	3	0	146	267
17:45	0	0	0	0	0	0	73	4	0	77	10	2	34	1	47	28	97	2	0	127	251
Total	5	3	3	0	11	14	327	20	0	361	42	5	132	1	180	164	501	10	0	675	1227
Grand Total	31	6	14	0	51	31	698	51	0	780	98	18	255	1	372	314	1045	33	0	1392	2595
Apprch %	60.8	11.8	27.5	0		4	89.5	6.5	0		26.3	4.8	68.5	0.3		22.6	75.1	2.4	0		
Total %	1.2	0.2	0.5	0	2	1.2	26.9	2	0	30.1	3.8	0.7	9.8	0	14.3	12.1	40.3	1.3	0	53.6	

# LSC Transportation Consultants, Inc.

2504 E. Pikes Peak Ave, Suite 304  
 Colorado Springs, CO 80909  
 719-633-2868

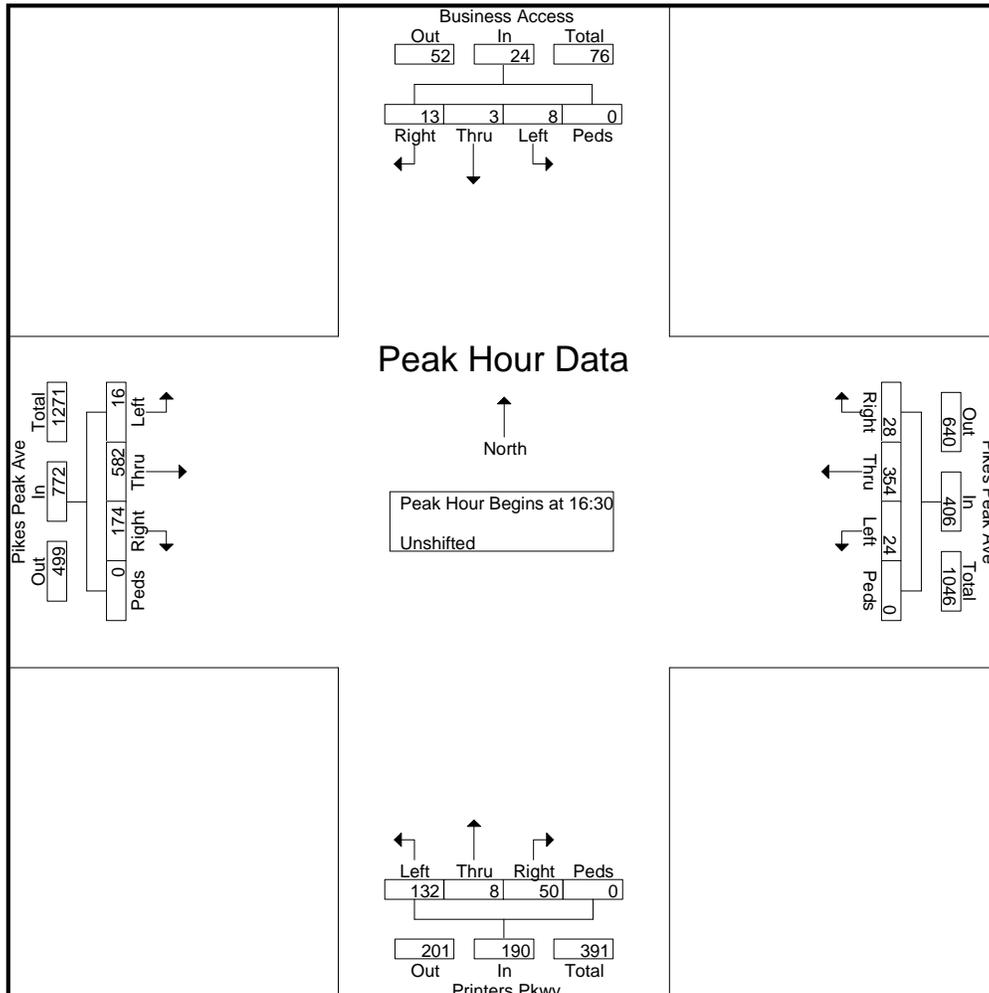
File Name : Printers Pkwy - Pikes Peak Ave PM

Site Code : S224480

Start Date : 9/15/2022

Page No : 2

Start Time	Business Access Southbound					Pikes Peak Ave Westbound					Printers Pkwy Northbound					Pikes Peak Ave Eastbound					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
Peak Hour Analysis From 4:00:00 PM to 5:45:00 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 4:30:00 PM																					
4:30:00 PM	3	1	4	0	8	12	88	6	0	106	15	1	29	0	45	38	140	8	0	186	345
4:45:00 PM	7	1	1	0	9	4	89	8	0	101	10	5	29	0	44	35	146	3	0	184	338
5:00:00 PM	1	1	2	0	4	4	88	5	0	97	15	1	43	0	59	50	143	4	0	197	357
5:15:00 PM	2	0	1	0	3	8	89	5	0	102	10	1	31	0	42	51	153	1	0	205	352
Total Volume	13	3	8	0	24	28	354	24	0	406	50	8	132	0	190	174	582	16	0	772	1392
% App. Total	54.2	12.5	33.3	0		6.9	87.2	5.9	0		26.3	4.2	69.5	0		22.5	75.4	2.1	0		
PHF	.464	.750	.500	.000	.667	.583	.994	.750	.000	.958	.833	.400	.767	.000	.805	.853	.951	.500	.000	.941	.975



# LSC Transportation Consultants, Inc.

2504 E. Pikes Peak Ave, Suite 304  
 Colorado Springs, CO 80909  
 719-633-2868

File Name : Printers Pkwy - Pikes Peak Ave PM

Site Code : S224480

Start Date : 9/15/2022

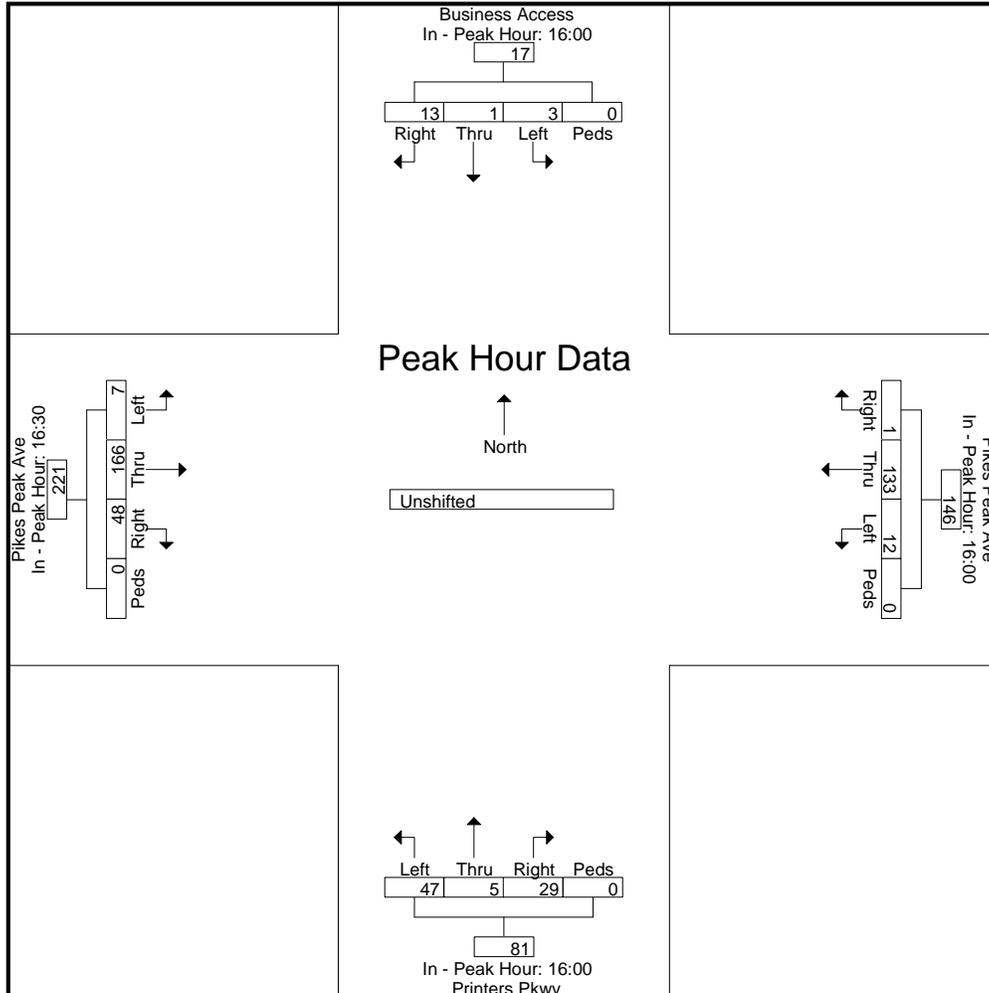
Page No : 3

Start Time	Business Access Southbound					Pikes Peak Ave Westbound					Printers Pkwy Northbound					Pikes Peak Ave Eastbound					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	

Peak Hour Analysis From 4:00:00 PM to 5:45:00 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	4:00:00 PM					4:00:00 PM					4:00:00 PM					4:30:00 PM				
+0 mins.	10	1	3	0	14	1	99	10	0	110	24	4	31	0	59	38	140	8	0	186
+5 mins.	6	0	3	0	9	0	95	7	0	102	7	3	34	0	44	35	146	3	0	184
+10 mins.	3	1	4	0	8	12	88	6	0	106	15	1	29	0	45	50	143	4	0	197
+15 mins.	7	1	1	0	9	4	89	8	0	101	10	5	29	0	44	51	153	1	0	205
Total Volume	26	3	11	0	40	17	371	31	0	419	56	13	123	0	192	174	582	16	0	772
% App. Total	65	7.5	27.5	0		4.1	88.5	7.4	0		29.2	6.8	64.1	0		22.5	75.4	2.1	0	
PHF	.650	.750	.688	.000	.714	.354	.937	.775	.000	.952	.583	.650	.904	.000	.814	.853	.951	.500	.000	.941

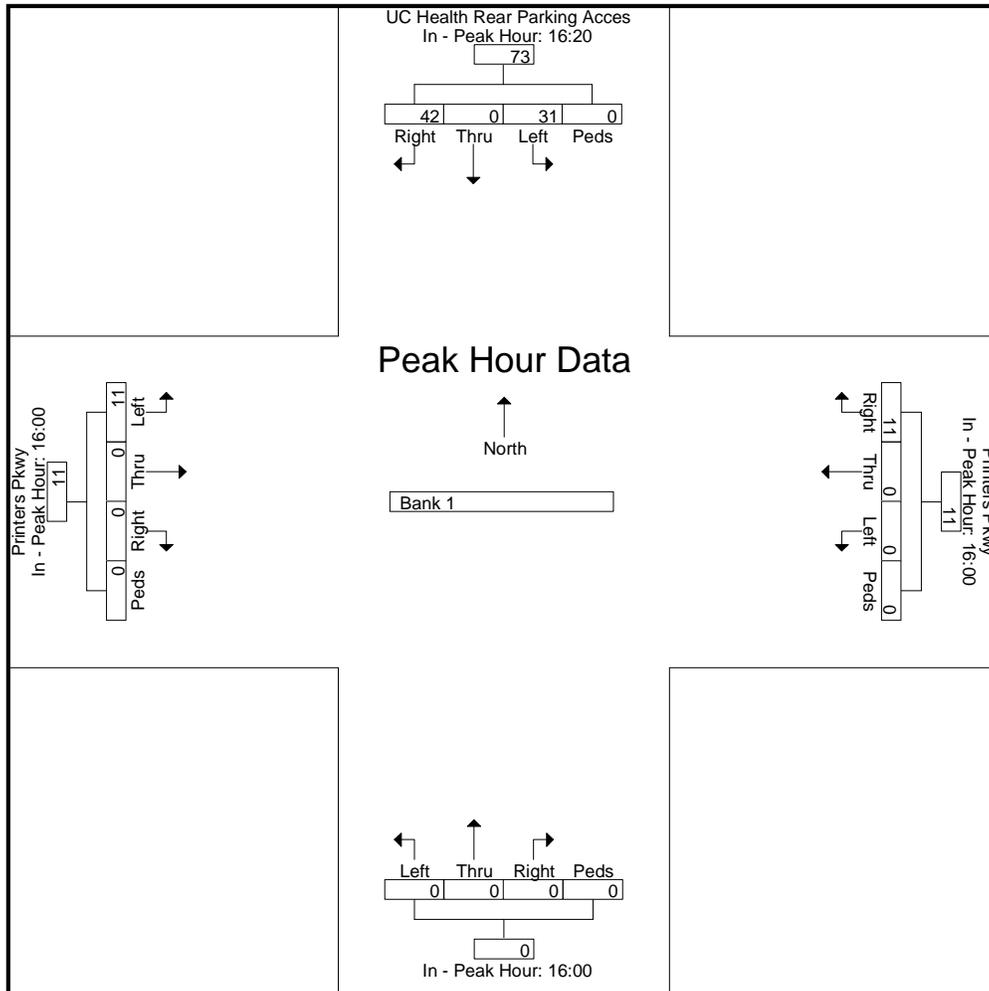


# LSC Transportation Consultants, Inc.

2504 E. Pikes Peak Ave, Suite 304  
 Colorado Springs, CO 80909  
 719-633-2868

File Name : UC Health Rear Parking Access PM  
 Site Code : S224480  
 Start Date : 7/25/2024  
 Page No : 3

Start Time	UC Health Rear Parking Acces Southbound					Printers Pkwy Westbound					Northbound					Printers Pkwy Eastbound					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
Peak Hour Analysis From 16:00 to 17:55 - Peak 1 of 1																					
Peak Hour for Each Approach Begins at:																					
	16:20					16:00					16:00					16:00					
+0 mins.	2	0	2	0	4	2	0	0	0	2	0	0	0	0	0	0	0	2	0	2	2
+5 mins.	4	0	3	0	7	1	0	0	0	1	0	0	0	0	0	0	0	0	1	0	1
+10 mins.	1	0	1	0	2	1	0	0	0	1	0	0	0	0	0	0	0	1	0	0	1
+15 mins.	4	0	6	0	10	1	0	0	0	1	0	0	0	0	0	0	0	1	0	0	1
+20 mins.	2	0	4	0	6	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
+25 mins.	4	0	2	0	6	1	0	0	0	1	0	0	0	0	0	0	0	1	0	0	1
+30 mins.	1	0	0	0	1	1	0	0	0	1	0	0	0	0	0	0	0	2	0	2	2
+35 mins.	2	0	4	0	6	1	0	0	0	1	0	0	0	0	0	0	0	1	0	0	1
+40 mins.	2	0	2	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+45 mins.	5	0	5	0	10	1	0	0	0	1	0	0	0	0	0	0	0	1	0	0	1
+50 mins.	10	0	0	0	10	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
+55 mins.	5	0	2	0	7	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
Total Volume	42	0	31	0	73	11	0	0	0	11	0	0	0	0	0	0	0	11	0	11	
% App. Total	57.5	0	42.5	0		100	0	0	0		0	0	0	0		0	0	100	0		
PHF	.350	.000	.431	.000	.608	.458	.000	.000	.000	.458	.000	.000	.000	.000	.000	.000	.000	.458	.000	.458	



# LSC Transportation Consultants, Inc.

2504 E. Pikes Peak Ave, Suite 304  
 Colorado Springs, CO 80909  
 719-633-2868

File Name : Union Blvd - Parkside Dr AM  
 Site Code : S224480  
 Start Date : 9/22/2022  
 Page No : 1

### Groups Printed- Unshifted

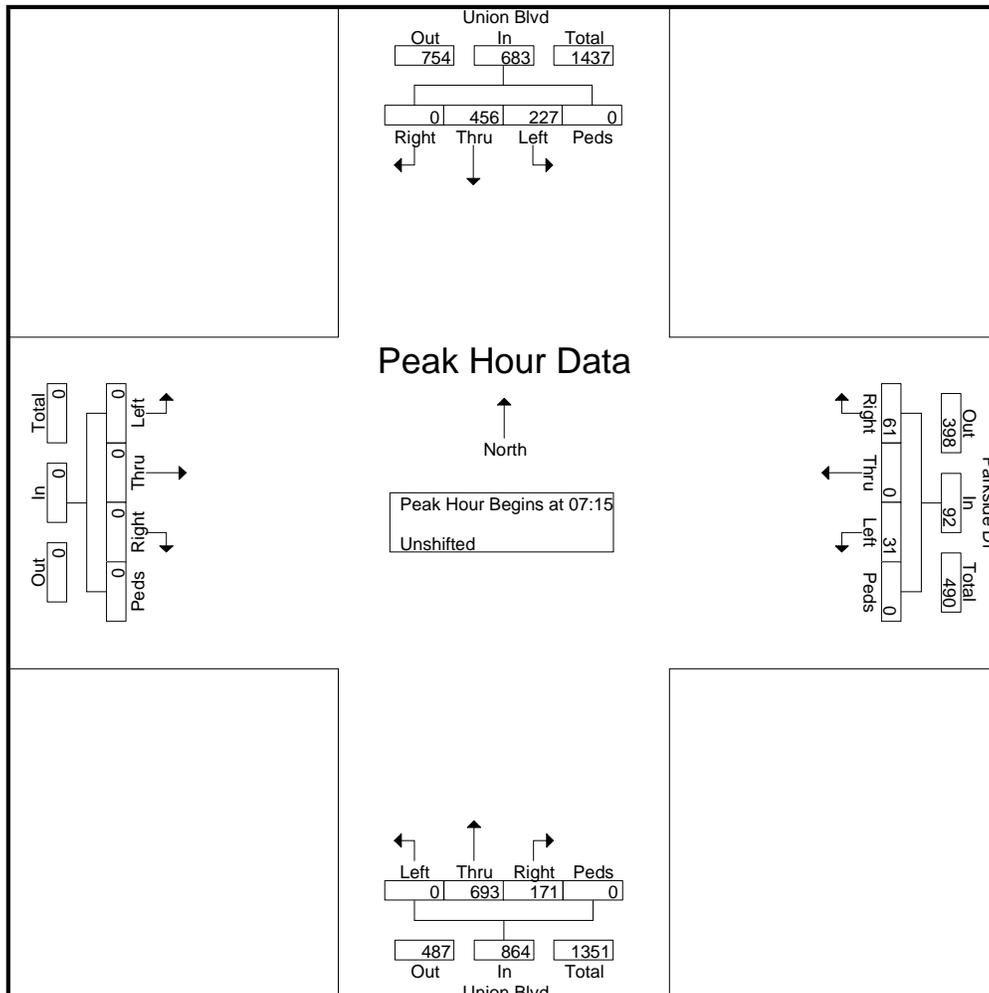
Start Time	Union Blvd Southbound					Parkside Dr Westbound					Union Blvd Northbound					Eastbound					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
06:30	0	10	3	0	13	2	0	0	1	3	8	22	0	0	30	0	0	0	0	0	46
06:35	0	48	8	0	56	2	0	0	0	2	8	17	0	0	25	0	0	0	0	0	83
06:40	0	28	4	0	32	4	0	3	0	7	6	32	0	0	38	0	0	0	0	0	77
06:45	0	34	7	0	41	1	0	3	0	4	9	48	0	0	57	0	0	0	0	0	102
06:50	0	26	18	0	44	6	0	2	0	8	3	32	0	0	35	0	0	0	0	0	87
06:55	0	11	14	0	25	2	0	1	0	3	7	46	0	0	53	0	0	0	0	0	81
<b>Total</b>	0	157	54	0	211	17	0	9	1	27	41	197	0	0	238	0	0	0	0	0	476
07:00	0	26	5	0	31	2	0	2	0	4	8	49	0	0	57	0	0	0	0	0	92
07:05	0	22	6	0	28	4	0	3	0	7	10	39	0	0	49	0	0	0	0	0	84
07:10	0	38	11	0	49	3	0	3	0	6	7	34	0	0	41	0	0	0	0	0	96
07:15	0	35	18	0	53	7	0	3	0	10	10	47	0	0	57	0	0	0	0	0	120
07:20	0	44	12	0	56	1	0	0	0	1	13	65	0	0	78	0	0	0	0	0	135
07:25	0	30	24	0	54	2	0	5	0	7	11	62	0	0	73	0	0	0	0	0	134
07:30	0	25	14	0	39	3	0	8	0	11	13	53	0	0	66	0	0	0	0	0	116
07:35	0	37	15	0	52	7	0	0	0	7	16	79	0	0	95	0	0	0	0	0	154
07:40	0	47	18	0	65	3	0	2	0	5	17	60	0	0	77	0	0	0	0	0	147
07:45	0	62	20	0	82	6	0	3	0	9	14	62	0	0	76	0	0	0	0	0	167
07:50	0	38	23	0	61	7	0	2	0	9	23	68	0	0	91	0	0	0	0	0	161
07:55	0	32	38	0	70	8	0	3	0	11	14	38	0	0	52	0	0	0	0	0	133
<b>Total</b>	0	436	204	0	640	53	0	34	0	87	156	656	0	0	812	0	0	0	0	0	1539
08:00	0	42	16	0	58	4	0	3	0	7	16	65	0	0	81	0	0	0	0	0	146
08:05	0	27	15	0	42	4	0	2	0	6	12	51	0	0	63	0	0	0	0	0	111
08:10	0	37	14	0	51	9	0	0	0	9	12	43	0	0	55	0	0	0	0	0	115
08:15	0	30	17	0	47	6	0	4	0	10	7	44	0	0	51	0	0	0	0	0	108
08:20	0	24	10	0	34	4	0	5	0	9	12	51	0	0	63	0	0	0	0	0	106
08:25	0	37	19	0	56	6	0	4	0	10	5	49	0	0	54	0	0	0	0	0	120
<b>Grand Total</b>	0	790	349	0	1139	103	0	61	1	165	261	1156	0	0	1417	0	0	0	0	0	2721
<b>Apprch %</b>	0	69.4	30.6	0		62.4	0	37	0.6		18.4	81.6	0	0		0	0	0	0	0	
<b>Total %</b>	0	29	12.8	0	41.9	3.8	0	2.2	0	6.1	9.6	42.5	0	0	52.1	0	0	0	0	0	

# LSC Transportation Consultants, Inc.

2504 E. Pikes Peak Ave, Suite 304  
 Colorado Springs, CO 80909  
 719-633-2868

File Name : Union Blvd - Parkside Dr AM  
 Site Code : S224480  
 Start Date : 9/22/2022  
 Page No : 2

Start Time	Union Blvd Southbound					Parkside Dr Westbound					Union Blvd Northbound					Eastbound					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
Peak Hour Analysis From 06:30 to 08:25 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:15																					
07:15	0	35	18	0	53	7	0	3	0	10	10	47	0	0	57	0	0	0	0	0	120
07:20	0	44	12	0	56	1	0	0	0	1	13	65	0	0	78	0	0	0	0	0	135
07:25	0	30	24	0	54	2	0	5	0	7	11	62	0	0	73	0	0	0	0	0	134
07:30	0	25	14	0	39	3	0	8	0	11	13	53	0	0	66	0	0	0	0	0	116
07:35	0	37	15	0	52	7	0	0	0	7	16	79	0	0	95	0	0	0	0	0	154
07:40	0	47	18	0	65	3	0	2	0	5	17	60	0	0	77	0	0	0	0	0	147
07:45	0	62	20	0	82	6	0	3	0	9	14	62	0	0	76	0	0	0	0	0	167
07:50	0	38	23	0	61	7	0	2	0	9	23	68	0	0	91	0	0	0	0	0	161
07:55	0	32	38	0	70	8	0	3	0	11	14	38	0	0	52	0	0	0	0	0	133
08:00	0	42	16	0	58	4	0	3	0	7	16	65	0	0	81	0	0	0	0	0	146
08:05	0	27	15	0	42	4	0	2	0	6	12	51	0	0	63	0	0	0	0	0	111
08:10	0	37	14	0	51	9	0	0	0	9	12	43	0	0	55	0	0	0	0	0	115
Total Volume	0	456	227	0	683	61	0	31	0	92	171	693	0	0	864	0	0	0	0	0	1639
% App. Total	0	66.8	33.2	0		66.3	0	33.7	0		19.8	80.2	0	0		0	0	0	0		
PHF	.000	.613	.498	.000	.694	.565	.000	.323	.000	.697	.620	.731	.000	.000	.758	.000	.000	.000	.000	.000	.818



# LSC Transportation Consultants, Inc.

2504 E. Pikes Peak Ave, Suite 304  
 Colorado Springs, CO 80909  
 719-633-2868

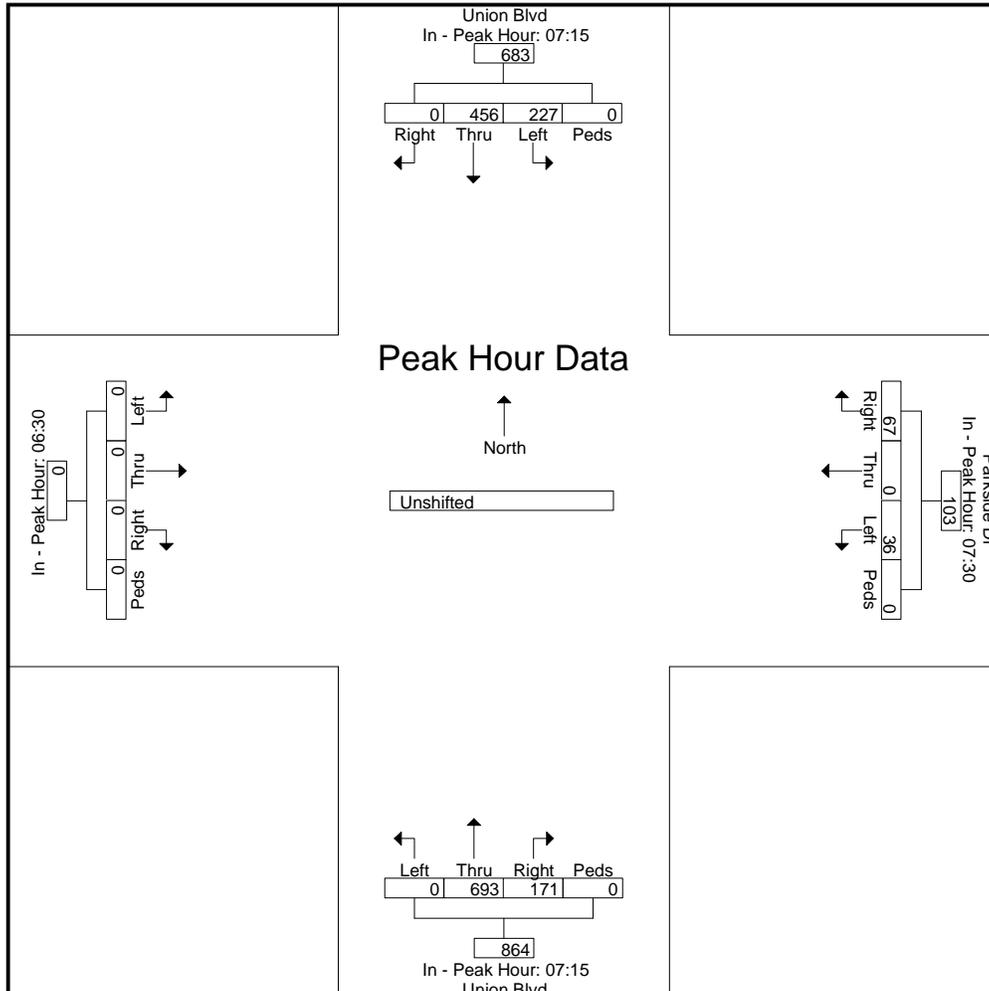
File Name : Union Blvd - Parkside Dr AM  
 Site Code : S224480  
 Start Date : 9/22/2022  
 Page No : 3

Start Time	Union Blvd Southbound					Parkside Dr Westbound					Union Blvd Northbound					Eastbound					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	

Peak Hour Analysis From 06:30 to 08:25 - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	07:15					07:30					07:15					06:30				
+0 mins.	0	35	18	0	53	3	0	8	0	11	10	47	0	0	57	0	0	0	0	0
+5 mins.	0	44	12	0	56	7	0	0	0	7	13	65	0	0	78	0	0	0	0	0
+10 mins.	0	30	24	0	54	3	0	2	0	5	11	62	0	0	73	0	0	0	0	0
+15 mins.	0	25	14	0	39	6	0	3	0	9	13	53	0	0	66	0	0	0	0	0
+20 mins.	0	37	15	0	52	7	0	2	0	9	16	79	0	0	95	0	0	0	0	0
+25 mins.	0	47	18	0	65	8	0	3	0	11	17	60	0	0	77	0	0	0	0	0
+30 mins.	0	62	20	0	82	4	0	3	0	7	14	62	0	0	76	0	0	0	0	0
+35 mins.	0	38	23	0	61	4	0	2	0	6	23	68	0	0	91	0	0	0	0	0
+40 mins.	0	32	38	0	70	9	0	0	0	9	14	38	0	0	52	0	0	0	0	0
+45 mins.	0	42	16	0	58	6	0	4	0	10	16	65	0	0	81	0	0	0	0	0
+50 mins.	0	27	15	0	42	4	0	5	0	9	12	51	0	0	63	0	0	0	0	0
+55 mins.	0	37	14	0	51	6	0	4	0	10	12	43	0	0	55	0	0	0	0	0
Total Volume	0	456	227	0	683	67	0	36	0	103	171	693	0	0	864	0	0	0	0	0
% App. Total	0	66.8	33.2	0		65	0	35	0		19.8	80.2	0	0		0	0	0	0	
PHF	.000	.613	.498	.000	.694	.620	.000	.375	.000	.780	.620	.731	.000	.000	.758	.000	.000	.000	.000	.000



# LSC Transportation Consultants, Inc.

2504 E. Pikes Peak Ave, Suite 304  
 Colorado Springs, CO 80909  
 719-633-2868

File Name : Union Blvd - Parkside Dr PM  
 Site Code : S224480  
 Start Date : 9/21/2022  
 Page No : 1

### Groups Printed- Unshifted

Start Time	Union Blvd Southbound					Parkside Dr Westbound					Union Blvd Northbound					Eastbound					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
16:00	0	47	5	0	52	17	0	8	0	25	5	44	0	0	49	0	0	0	0	0	126
16:05	0	35	4	0	39	15	0	14	0	29	6	38	0	0	44	0	0	0	0	0	112
16:10	0	96	7	0	103	15	0	3	0	18	6	55	0	0	61	0	0	0	0	0	182
16:15	0	67	2	0	69	22	0	8	0	30	4	46	0	0	50	0	0	0	0	0	149
16:20	0	59	6	0	65	10	0	9	0	19	2	44	0	0	46	0	0	0	0	0	130
16:25	0	65	4	0	69	18	0	6	0	24	7	58	0	0	65	0	0	0	0	0	158
16:30	0	61	5	0	66	25	0	9	0	34	2	36	0	0	38	0	0	0	0	0	138
16:35	0	76	3	0	79	26	0	8	0	34	3	57	0	0	60	0	0	0	0	0	173
16:40	0	77	3	0	80	16	0	13	0	29	1	53	0	0	54	0	0	0	0	0	163
16:45	0	75	2	0	77	18	0	6	0	24	3	45	0	0	48	0	0	0	0	0	149
16:50	0	61	7	0	68	21	0	7	0	28	4	54	0	0	58	0	0	0	0	0	154
16:55	0	48	1	0	49	18	0	5	0	23	1	41	0	0	42	0	0	0	0	0	114
<b>Total</b>	<b>0</b>	<b>767</b>	<b>49</b>	<b>0</b>	<b>816</b>	<b>221</b>	<b>0</b>	<b>96</b>	<b>0</b>	<b>317</b>	<b>44</b>	<b>571</b>	<b>0</b>	<b>0</b>	<b>615</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1748</b>
17:00	0	63	3	0	66	31	0	10	0	41	3	36	0	0	39	0	0	0	0	0	146
17:05	0	102	3	0	105	25	0	9	0	34	4	58	0	0	62	0	0	0	0	0	201
17:10	0	65	5	0	70	14	0	7	0	21	5	40	0	0	45	0	0	0	0	0	136
17:15	0	70	1	0	71	24	0	11	0	35	2	60	0	0	62	0	0	0	0	0	168
17:20	0	61	1	0	62	17	0	7	0	24	3	56	0	0	59	0	0	0	0	0	145
17:25	0	63	2	0	65	18	0	9	0	27	2	49	0	0	51	0	0	0	0	0	143
17:30	0	54	6	0	60	10	0	5	0	15	2	47	0	0	49	0	0	0	0	0	124
17:35	0	73	4	0	77	8	0	8	0	16	2	62	0	0	64	0	0	0	0	0	157
17:40	0	58	1	0	59	11	0	9	0	20	1	36	0	0	37	0	0	0	0	0	116
17:45	0	34	1	0	35	12	0	6	0	18	0	54	0	0	54	0	0	0	0	0	107
17:50	0	47	1	0	48	5	0	6	0	11	5	48	0	0	53	0	0	0	0	0	112
17:55	0	43	2	0	45	6	0	4	0	10	3	44	0	0	47	0	0	0	0	0	102
<b>Total</b>	<b>0</b>	<b>733</b>	<b>30</b>	<b>0</b>	<b>763</b>	<b>181</b>	<b>0</b>	<b>91</b>	<b>0</b>	<b>272</b>	<b>32</b>	<b>590</b>	<b>0</b>	<b>0</b>	<b>622</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1657</b>
<b>Grand Total</b>	<b>0</b>	<b>1500</b>	<b>79</b>	<b>0</b>	<b>1579</b>	<b>402</b>	<b>0</b>	<b>187</b>	<b>0</b>	<b>589</b>	<b>76</b>	<b>1161</b>	<b>0</b>	<b>0</b>	<b>1237</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>3405</b>
<b>Apprch %</b>	<b>0</b>	<b>95</b>	<b>5</b>	<b>0</b>		<b>68.3</b>	<b>0</b>	<b>31.7</b>	<b>0</b>		<b>6.1</b>	<b>93.9</b>	<b>0</b>	<b>0</b>		<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>		
<b>Total %</b>	<b>0</b>	<b>44.1</b>	<b>2.3</b>	<b>0</b>	<b>46.4</b>	<b>11.8</b>	<b>0</b>	<b>5.5</b>	<b>0</b>	<b>17.3</b>	<b>2.2</b>	<b>34.1</b>	<b>0</b>	<b>0</b>	<b>36.3</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	

# LSC Transportation Consultants, Inc.

2504 E. Pikes Peak Ave, Suite 304  
 Colorado Springs, CO 80909  
 719-633-2868

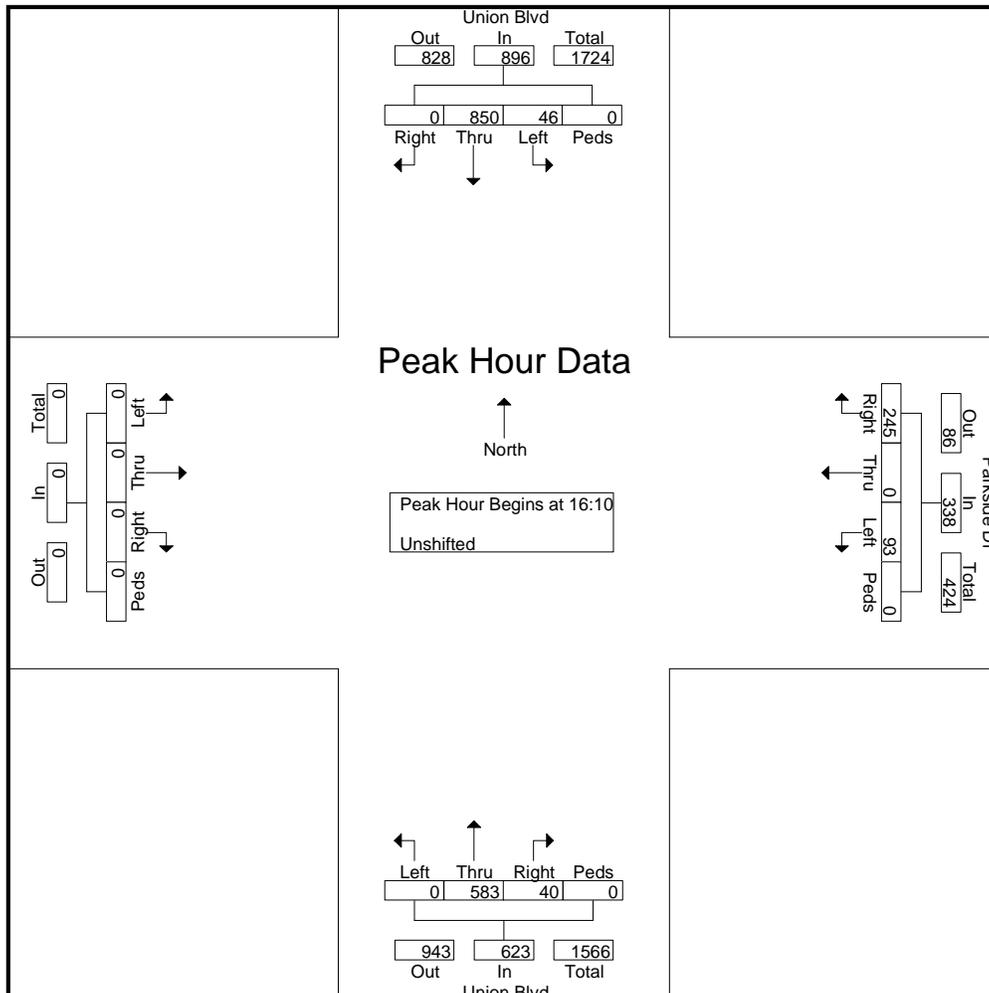
File Name : Union Blvd - Parkside Dr PM

Site Code : S224480

Start Date : 9/21/2022

Page No : 2

Start Time	Union Blvd Southbound					Parkside Dr Westbound					Union Blvd Northbound					Eastbound					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
Peak Hour Analysis From 16:00 to 17:55 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 16:10																					
16:10	0	96	7	0	103	15	0	3	0	18	6	55	0	0	61	0	0	0	0	0	182
16:15	0	67	2	0	69	22	0	8	0	30	4	46	0	0	50	0	0	0	0	0	149
16:20	0	59	6	0	65	10	0	9	0	19	2	44	0	0	46	0	0	0	0	0	130
16:25	0	65	4	0	69	18	0	6	0	24	7	58	0	0	65	0	0	0	0	0	158
16:30	0	61	5	0	66	25	0	9	0	34	2	36	0	0	38	0	0	0	0	0	138
16:35	0	76	3	0	79	26	0	8	0	34	3	57	0	0	60	0	0	0	0	0	173
16:40	0	77	3	0	80	16	0	13	0	29	1	53	0	0	54	0	0	0	0	0	163
16:45	0	75	2	0	77	18	0	6	0	24	3	45	0	0	48	0	0	0	0	0	149
16:50	0	61	7	0	68	21	0	7	0	28	4	54	0	0	58	0	0	0	0	0	154
16:55	0	48	1	0	49	18	0	5	0	23	1	41	0	0	42	0	0	0	0	0	114
17:00	0	63	3	0	66	31	0	10	0	41	3	36	0	0	39	0	0	0	0	0	146
17:05	0	102	3	0	105	25	0	9	0	34	4	58	0	0	62	0	0	0	0	0	201
Total Volume	0	850	46	0	896	245	0	93	0	338	40	583	0	0	623	0	0	0	0	0	1857
% App. Total	0	94.9	5.1	0		72.5	0	27.5	0		6.4	93.6	0	0		0	0	0	0		
PHF	.000	.694	.548	.000	.711	.659	.000	.596	.000	.687	.476	.838	.000	.000	.799	.000	.000	.000	.000	.000	.770



# LSC Transportation Consultants, Inc.

2504 E. Pikes Peak Ave, Suite 304  
 Colorado Springs, CO 80909  
 719-633-2868

File Name : Union Blvd - Parkside Dr PM

Site Code : S224480

Start Date : 9/21/2022

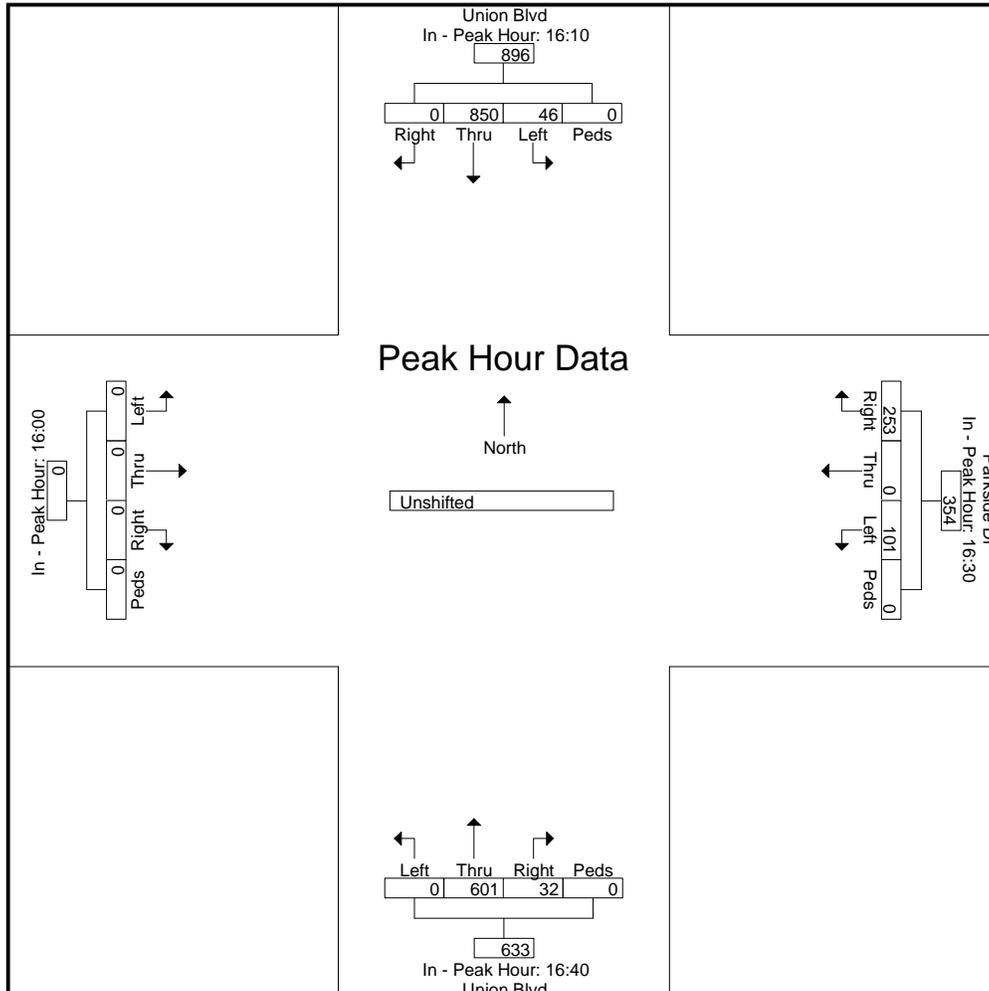
Page No : 3

Start Time	Union Blvd Southbound					Parkside Dr Westbound					Union Blvd Northbound					Eastbound					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	

Peak Hour Analysis From 16:00 to 17:55 - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	16:10					16:30					16:40					16:00				
+0 mins.	0	96	7	0	103	25	0	9	0	34	1	53	0	0	54	0	0	0	0	0
+5 mins.	0	67	2	0	69	26	0	8	0	34	3	45	0	0	48	0	0	0	0	0
+10 mins.	0	59	6	0	65	16	0	13	0	29	4	54	0	0	58	0	0	0	0	0
+15 mins.	0	65	4	0	69	18	0	6	0	24	1	41	0	0	42	0	0	0	0	0
+20 mins.	0	61	5	0	66	21	0	7	0	28	3	36	0	0	39	0	0	0	0	0
+25 mins.	0	76	3	0	79	18	0	5	0	23	4	58	0	0	62	0	0	0	0	0
+30 mins.	0	77	3	0	80	31	0	10	0	41	5	40	0	0	45	0	0	0	0	0
+35 mins.	0	75	2	0	77	25	0	9	0	34	2	60	0	0	62	0	0	0	0	0
+40 mins.	0	61	7	0	68	14	0	7	0	21	3	56	0	0	59	0	0	0	0	0
+45 mins.	0	48	1	0	49	24	0	11	0	35	2	49	0	0	51	0	0	0	0	0
+50 mins.	0	63	3	0	66	17	0	7	0	24	2	47	0	0	49	0	0	0	0	0
+55 mins.	0	102	3	0	105	18	0	9	0	27	2	62	0	0	64	0	0	0	0	0
Total Volume	0	850	46	0	896	253	0	101	0	354	32	601	0	0	633	0	0	0	0	0
% App. Total	0	94.9	5.1	0		71.5	0	28.5	0		5.1	94.9	0	0		0	0	0	0	
PHF	.000	.694	.548	.000	.711	.680	.000	.647	.000	.720	.533	.808	.000	.000	.824	.000	.000	.000	.000	.000



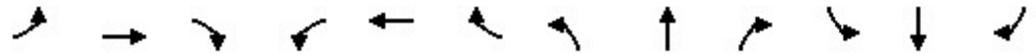
# Level of Service Reports

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Lanes, Volumes, Timings  
1: Union Blvd & Pikes Peak Ave

Existing  
AM



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	132	421	145	38	407	97	107	560	73	140	529	179
Future Volume (vph)	132	421	145	38	407	97	107	560	73	140	529	179
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100		125	75		0	180		35	125		0
Storage Lanes	1		1	1		0	1		1	1		0
Taper Length (ft)	52			60			110			90		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	0.95	1.00	0.95	1.00	1.00	0.95	0.95
Frt			0.850		0.971				0.850		0.962	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3539	1583	1770	3437	0	1770	3539	1583	1770	3405	0
Flt Permitted	0.329			0.463			0.219			0.315		
Satd. Flow (perm)	613	3539	1583	862	3437	0	408	3539	1583	587	3405	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			156		28				124		44	
Link Speed (mph)		35			35			35			35	
Link Distance (ft)		871			409			998			1555	
Travel Time (s)		17.0			8.0			19.4			30.3	
Peak Hour Factor	0.93	0.93	0.93	0.92	0.92	0.92	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	142	453	156	41	442	105	115	602	78	151	569	192
Shared Lane Traffic (%)												
Lane Group Flow (vph)	142	453	156	41	547	0	115	602	78	151	761	0
Enter Blocked Intersection	No											
Lane Alignment	Left	Left	Right									
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane		Yes			Yes			Yes			Yes	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	2	1	1	2	
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100	20	20	100		20	100	20	20	100	
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	6	20	20	6	
Detector 1 Type	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex		CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+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			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		CI+Ex			CI+Ex			CI+Ex			CI+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2		2	6			4		4	8		

Lanes, Volumes, Timings  
1: Union Blvd & Pikes Peak Ave

Existing  
AM



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	5	2	2	1	6		7	4	4	3	8	
Switch Phase												
Minimum Initial (s)	4.0	6.0	6.0	4.0	6.0		4.0	4.0	4.0	4.0	4.0	
Minimum Split (s)	9.0	35.0	35.0	9.0	35.0		9.0	37.0	37.0	9.0	37.0	
Total Split (s)	12.0	45.0	45.0	12.0	45.0		12.0	45.0	45.0	12.0	45.0	
Total Split (%)	10.5%	39.5%	39.5%	10.5%	39.5%		10.5%	39.5%	39.5%	10.5%	39.5%	
Maximum Green (s)	7.0	39.0	39.0	7.0	39.0		7.0	39.0	39.0	7.0	39.0	
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0		3.0	4.0	4.0	3.0	4.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.0	6.0	6.0	5.0	6.0		5.0	6.0	6.0	5.0	6.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	C-Max	C-Max	None	C-Max		None	Max	Max	None	Max	
Walk Time (s)		7.0	7.0		7.0			7.0	7.0		7.0	
Flash Dont Walk (s)		22.0	22.0		22.0			24.0	24.0		24.0	
Pedestrian Calls (#/hr)		0	0		0			0	0		0	
Act Effect Green (s)	49.0	43.8	43.8	46.5	39.0		47.0	39.0	39.0	47.0	39.0	
Actuated g/C Ratio	0.43	0.38	0.38	0.41	0.34		0.41	0.34	0.34	0.41	0.34	
v/c Ratio	0.43	0.33	0.22	0.10	0.46		0.46	0.50	0.13	0.48	0.64	
Control Delay	23.1	26.7	5.0	18.1	29.2		21.8	25.6	0.9	24.8	32.5	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay	23.1	26.7	5.0	18.1	29.2		21.8	25.6	0.9	24.8	32.5	
LOS	C	C	A	B	C		C	C	A	C	C	
Approach Delay		21.5			28.4			22.6			31.2	
Approach LOS		C			C			C			C	
90th %ile Green (s)	7.0	39.0	39.0	7.0	39.0		7.0	39.0	39.0	7.0	39.0	
90th %ile Term Code	Max	Coord	Coord	Max	Coord		Max	MaxR	MaxR	Max	MaxR	
70th %ile Green (s)	7.0	39.0	39.0	7.0	39.0		7.0	39.0	39.0	7.0	39.0	
70th %ile Term Code	Max	Coord	Coord	Max	Coord		Max	MaxR	MaxR	Max	MaxR	
50th %ile Green (s)	7.0	39.1	39.1	6.9	39.0		7.0	39.0	39.0	7.0	39.0	
50th %ile Term Code	Max	Coord	Coord	Gap	Coord		Max	MaxR	MaxR	Max	MaxR	
30th %ile Green (s)	7.0	51.0	51.0	0.0	39.0		7.0	39.0	39.0	7.0	39.0	
30th %ile Term Code	Max	Coord	Coord	Skip	Coord		Max	MaxR	MaxR	Max	MaxR	
10th %ile Green (s)	7.0	51.0	51.0	0.0	39.0		6.8	39.0	39.0	7.0	39.2	
10th %ile Term Code	Max	Coord	Coord	Skip	Coord		Gap	MaxR	MaxR	Max	MaxR	
Queue Length 50th (ft)	60	130	0	16	154		29	182	3	64	231	
Queue Length 95th (ft)	101	176	45	37	206		51	185	3	108	298	
Internal Link Dist (ft)		791			329			918			1475	
Turn Bay Length (ft)	100		125	75			180		35	125		
Base Capacity (vph)	334	1360	704	411	1194		251	1210	623	314	1194	
Starvation Cap Reductn	0	0	0	0	0		0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0		0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0		0	0	0	0	0	
Reduced v/c Ratio	0.43	0.33	0.22	0.10	0.46		0.46	0.50	0.13	0.48	0.64	

Intersection Summary

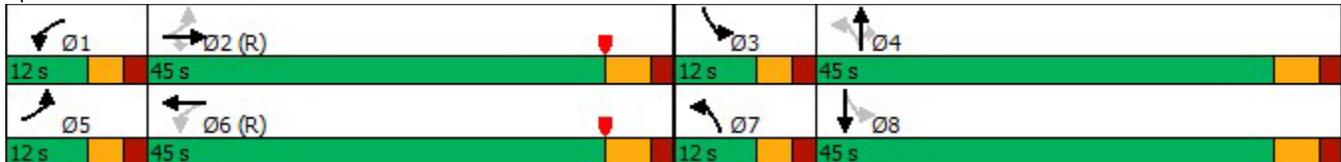
Area Type: Other

Lanes, Volumes, Timings  
 1: Union Blvd & Pikes Peak Ave

Existing  
 AM

Cycle Length: 114	
Actuated Cycle Length: 114	
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.64	
Intersection Signal Delay: 26.0	Intersection LOS: C
Intersection Capacity Utilization 66.3%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 1: Union Blvd & Pikes Peak Ave



Lanes, Volumes, Timings  
4: Printers Pkwy & Pikes Peak Ave

Existing  
AM



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	6	375	198	52	448	10	104	5	25	1	0	7
Future Volume (vph)	6	375	198	52	448	10	104	5	25	1	0	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	80		0	120		0	0		195	0		0
Storage Lanes	1		1	1		0	1		1	1		1
Taper Length (ft)	60			90			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00
Frt			0.850		0.997				0.850			0.850
Flt Protected	0.950			0.950			0.950	0.957		0.950		
Satd. Flow (prot)	1770	3539	1583	1770	3529	0	1681	1694	1583	1770	1863	1583
Flt Permitted	0.445			0.503			0.950	0.957		0.950		
Satd. Flow (perm)	829	3539	1583	937	3529	0	1681	1694	1583	1770	1863	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			213		3				71			383
Link Speed (mph)		35			35			35				35
Link Distance (ft)		606			424			673				158
Travel Time (s)		11.8			8.3			13.1				3.1
Peak Hour Factor	0.93	0.93	0.93	0.92	0.92	0.92	0.83	0.83	0.83	0.78	0.78	0.78
Adj. Flow (vph)	6	403	213	57	487	11	125	6	30	1	0	9
Shared Lane Traffic (%)							48%					
Lane Group Flow (vph)	6	403	213	57	498	0	65	66	30	1	0	9
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	R NA	Left	Left	R NA	Left	Left	R NA	L NA	Left	R NA
Median Width(ft)		12			12			24				24
Link Offset(ft)		0			0			-10				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane		Yes			Yes							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		35	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100		20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0		0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0		0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20	20	6		20	6	20	20	6	20
Detector 1 Type	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex		CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+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	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	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	0.0
Detector 2 Position(ft)		94			94			94				94
Detector 2 Size(ft)		6			6			6				6
Detector 2 Type		CI+Ex			CI+Ex			CI+Ex				CI+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				0.0
Turn Type	Perm	NA	Perm	Perm	NA		Split	NA	Perm	Split		Perm
Protected Phases		2			6		8	8		4	4	
Permitted Phases	2		2	6					8			4

Lanes, Volumes, Timings  
4: Printers Pkwy & Pikes Peak Ave

Existing  
AM



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	2	2	2	6	6		8	8	8	4	4	4
Switch Phase												
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	30.0	30.0	30.0	30.0	30.0		32.0	32.0	32.0	28.5	28.5	28.5
Total Split (s)	85.0	85.0	85.0	85.0	85.0		31.0	31.0	31.0	22.0	22.0	22.0
Total Split (%)	61.6%	61.6%	61.6%	61.6%	61.6%		22.5%	22.5%	22.5%	15.9%	15.9%	15.9%
Maximum Green (s)	79.0	79.0	79.0	79.0	79.0		25.0	25.0	25.0	16.0	16.0	16.0
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0		6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	C-Max	C-Max	C-Max	Max	Max		Max	Max	Max	Max	Max	Max
Walk Time (s)	7.0	7.0	7.0	7.0	7.0		7.0	7.0	7.0			
Flash Dont Walk (s)	17.0	17.0	17.0	17.0	17.0		19.0	19.0	19.0			
Pedestrian Calls (#/hr)	0	0	0	0	0		0	0	0			
Act Effect Green (s)	79.0	79.0	79.0	79.0	79.0		25.0	25.0	25.0	16.0		16.0
Actuated g/C Ratio	0.57	0.57	0.57	0.57	0.57		0.18	0.18	0.18	0.12		0.12
v/c Ratio	0.01	0.20	0.21	0.11	0.25		0.21	0.22	0.09	0.00		0.02
Control Delay	12.8	14.5	2.2	14.1	15.0		50.3	50.3	0.5	54.0		0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0		0.0
Total Delay	12.8	14.5	2.2	14.1	15.0		50.3	50.3	0.5	54.0		0.0
LOS	B	B	A	B	B		D	D	A	D		A
Approach Delay		10.3			14.9			41.0				5.4
Approach LOS		B			B			D				A
90th %ile Green (s)	79.0	79.0	79.0	79.0	79.0		25.0	25.0	25.0	16.0	16.0	16.0
90th %ile Term Code	Coord	Coord	Coord	Coord	Coord		Ped	Ped	Ped	MaxR	MaxR	MaxR
70th %ile Green (s)	79.0	79.0	79.0	79.0	79.0		25.0	25.0	25.0	16.0	16.0	16.0
70th %ile Term Code	Coord	Coord	Coord	Coord	Coord		Ped	Ped	Ped	MaxR	MaxR	MaxR
50th %ile Green (s)	79.0	79.0	79.0	79.0	79.0		25.0	25.0	25.0	16.0	16.0	16.0
50th %ile Term Code	Coord	Coord	Coord	Coord	Coord		Ped	Ped	Ped	MaxR	MaxR	MaxR
30th %ile Green (s)	79.0	79.0	79.0	79.0	79.0		25.0	25.0	25.0	16.0	16.0	16.0
30th %ile Term Code	Coord	Coord	Coord	Coord	Coord		Ped	Ped	Ped	MaxR	MaxR	MaxR
10th %ile Green (s)	79.0	79.0	79.0	79.0	79.0		25.0	25.0	25.0	16.0	16.0	16.0
10th %ile Term Code	Coord	Coord	Coord	Coord	Coord		Ped	Ped	Ped	MaxR	MaxR	MaxR
Queue Length 50th (ft)	2	87	0	22	111		52	53	0	1		0
Queue Length 95th (ft)	9	116	35	45	144		92	92	0	6		0
Internal Link Dist (ft)		526			344			593				78
Turn Bay Length (ft)	80			120					195			
Base Capacity (vph)	474	2025	997	536	2021		304	306	344	205		522
Starvation Cap Reductn	0	0	0	0	0		0	0	0	0		0
Spillback Cap Reductn	0	0	0	0	0		0	0	0	0		0
Storage Cap Reductn	0	0	0	0	0		0	0	0	0		0
Reduced v/c Ratio	0.01	0.20	0.21	0.11	0.25		0.21	0.22	0.09	0.00		0.02

Intersection Summary

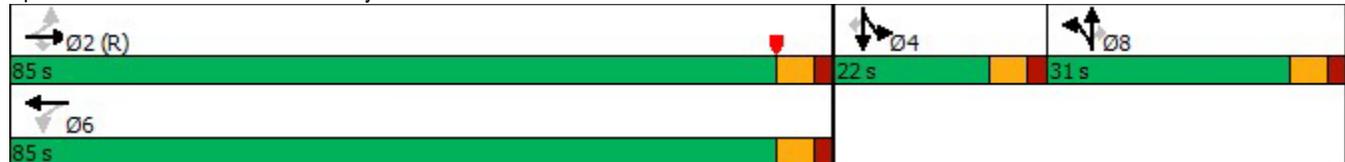
Area Type: Other

Lanes, Volumes, Timings  
 4: Printers Pkwy & Pikes Peak Ave

Existing  
 AM

Cycle Length: 138	
Actuated Cycle Length: 138	
Offset: 0 (0%), Referenced to phase 2:EBTL, Start of Yellow	
Natural Cycle: 95	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.25	
Intersection Signal Delay: 15.8	Intersection LOS: B
Intersection Capacity Utilization 40.7%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 4: Printers Pkwy & Pikes Peak Ave



Lanes, Volumes, Timings  
12: Union Blvd & Parkside Dr

Existing  
AM



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	37	63	676	167	224	431
Future Volume (vph)	37	63	676	167	224	431
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	60	0		0	135	
Storage Lanes	1	1		0	1	
Taper Length (ft)	55				90	
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	0.95
Frt		0.850	0.970			
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1593	1425	3090	0	1593	3185
Flt Permitted	0.950				0.272	
Satd. Flow (perm)	1593	1425	3090	0	456	3185
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		72	41			
Link Speed (mph)	30		35			35
Link Distance (ft)	566		648			477
Travel Time (s)	12.9		12.6			9.3
Peak Hour Factor	0.87	0.87	0.93	0.93	0.93	0.93
Adj. Flow (vph)	43	72	727	180	241	463
Shared Lane Traffic (%)						
Lane Group Flow (vph)	43	72	907	0	241	463
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		12			12
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane	Yes		Yes			Yes
Headway Factor	1.14	1.14	1.14	1.14	1.14	1.14
Turning Speed (mph)	15	9		9	15	
Number of Detectors	1	1	2		1	2
Detector Template	Left	Right	Thru		Left	Thru
Leading Detector (ft)	20	20	100		20	100
Trailing Detector (ft)	0	0	0		0	0
Detector 1 Position(ft)	0	0	0		0	0
Detector 1 Size(ft)	20	20	6		20	6
Detector 1 Type	CI+Ex	CI+Ex	CI+Ex		CI+Ex	CI+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0		0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0		0.0	0.0
Detector 1 Delay (s)	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			CI+Ex			CI+Ex
Detector 2 Channel						
Detector 2 Extend (s)			0.0			0.0
Turn Type	Prot	Perm	NA		pm+pt	NA
Protected Phases	8		2		1	6
Permitted Phases		8			6	

Lanes, Volumes, Timings  
12: Union Blvd & Parkside Dr

Existing  
AM



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Detector Phase	8	8	2		1	6
Switch Phase						
Minimum Initial (s)	8.0	8.0	20.0		4.0	20.0
Minimum Split (s)	28.0	28.0	27.0		9.5	25.0
Total Split (s)	29.0	29.0	66.0		19.0	85.0
Total Split (%)	25.4%	25.4%	57.9%		16.7%	74.6%
Maximum Green (s)	23.0	23.0	61.0		14.0	80.0
Yellow Time (s)	4.0	4.0	3.0		3.0	3.0
All-Red Time (s)	2.0	2.0	2.0		2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	6.0	6.0	5.0		5.0	5.0
Lead/Lag			Lag		Lead	
Lead-Lag Optimize?			Yes		Yes	
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Recall Mode	None	None	C-Max		None	C-Max
Walk Time (s)	7.0	7.0	7.0			
Flash Dont Walk (s)	15.0	15.0	15.0			
Pedestrian Calls (#/hr)	0	0	0			
Act Effect Green (s)	9.2	9.2	82.6		96.6	97.6
Actuated g/C Ratio	0.08	0.08	0.72		0.85	0.86
v/c Ratio	0.34	0.40	0.40		0.51	0.17
Control Delay	56.3	17.9	7.4		15.5	4.9
Queue Delay	0.0	0.0	0.0		0.0	0.0
Total Delay	56.3	17.9	7.4		15.5	4.9
LOS	E	B	A		B	A
Approach Delay	32.3		7.4			8.5
Approach LOS	C		A			A
90th %ile Green (s)	11.8	11.8	74.3		11.9	91.2
90th %ile Term Code	Gap	Gap	Coord		Gap	Coord
70th %ile Green (s)	9.8	9.8	78.2		10.0	93.2
70th %ile Term Code	Gap	Gap	Coord		Gap	Coord
50th %ile Green (s)	8.5	8.5	80.6		8.9	94.5
50th %ile Term Code	Gap	Gap	Coord		Gap	Coord
30th %ile Green (s)	8.0	8.0	81.9		8.1	95.0
30th %ile Term Code	Min	Min	Coord		Gap	Coord
10th %ile Green (s)	0.0	0.0	98.1		5.9	109.0
10th %ile Term Code	Skip	Skip	Coord		Gap	Coord
Queue Length 50th (ft)	31	0	121		97	54
Queue Length 95th (ft)	64	41	192		167	102
Internal Link Dist (ft)	486		568			397
Turn Bay Length (ft)	60				135	
Base Capacity (vph)	321	344	2250		525	2726
Starvation Cap Reductn	0	0	0		0	0
Spillback Cap Reductn	0	0	0		0	0
Storage Cap Reductn	0	0	0		0	0
Reduced v/c Ratio	0.13	0.21	0.40		0.46	0.17

Intersection Summary

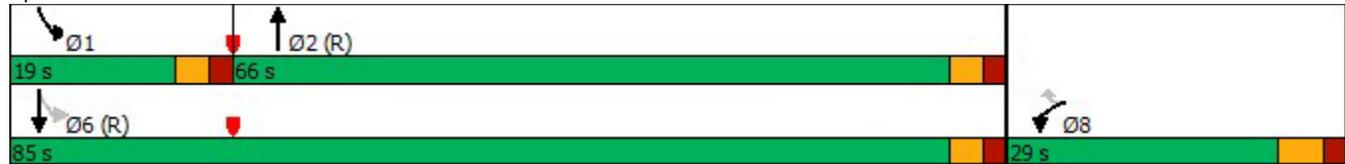
Area Type: CBD

Lanes, Volumes, Timings  
 12: Union Blvd & Parkside Dr

Existing  
 AM

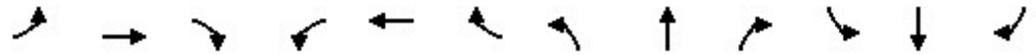
Cycle Length: 114	
Actuated Cycle Length: 114	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Green	
Natural Cycle: 70	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.51	
Intersection Signal Delay: 9.5	Intersection LOS: A
Intersection Capacity Utilization 60.5%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 12: Union Blvd & Parkside Dr



Lanes, Volumes, Timings  
15: Union Blvd & Platte Ave

Existing  
AM



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	98	490	52	174	1019	62	66	627	99	81	722	76
Future Volume (vph)	98	490	52	174	1019	62	66	627	99	81	722	76
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	170		35	150		0	215		115	305		0
Storage Lanes	1		1	1		1	1		1	1		0
Taper Length (ft)	120			65			40			75		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.95
Frt			0.850			0.850			0.850		0.986	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	3539	1583	1770	3490	0
Flt Permitted	0.205			0.279			0.197			0.242		
Satd. Flow (perm)	382	3539	1583	520	3539	1583	367	3539	1583	451	3490	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			153			153			153			15
Link Speed (mph)		35			35			35			35	
Link Distance (ft)		452			419			1555			508	
Travel Time (s)		8.8			8.2			30.3			9.9	
Peak Hour Factor	0.93	0.93	0.93	0.95	0.95	0.95	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	105	527	56	183	1073	65	71	674	106	87	776	82
Shared Lane Traffic (%)												
Lane Group Flow (vph)	105	527	56	183	1073	65	71	674	106	87	858	0
Enter Blocked Intersection	No											
Lane Alignment	Left	Left	Right									
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane								Yes			Yes	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	60		60	60		60	60		60	60		60
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0	0	
Detector 1 Size(ft)	20	6	20	20	6	20	20	6	20	20	6	
Detector 1 Type	CI+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	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	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	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		CI+Ex			CI+Ex			CI+Ex			CI+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2		2	6		6	4		4	8		

Lanes, Volumes, Timings  
15: Union Blvd & Platte Ave

Existing  
AM



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	5	2	2	1	6	6	7	4	4	3	8	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	22.5	22.5	9.5	22.5	22.5	9.5	22.5	22.5	9.5	22.5	22.5
Total Split (s)	10.0	25.0	25.0	14.0	29.0	29.0	10.0	26.0	26.0	10.0	26.0	26.0
Total Split (%)	13.3%	33.3%	33.3%	18.7%	38.7%	38.7%	13.3%	34.7%	34.7%	13.3%	34.7%	34.7%
Maximum Green (s)	5.5	20.5	20.5	9.5	24.5	24.5	5.5	21.5	21.5	5.5	21.5	21.5
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	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	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	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	4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lead	Lag	Lag									
Lead-Lag Optimize?	Yes											
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None											
Act Effect Green (s)	23.9	18.2	18.2	31.3	24.4	24.4	24.3	20.3	20.3	24.3	20.3	20.3
Actuated g/C Ratio	0.35	0.26	0.26	0.45	0.35	0.35	0.35	0.30	0.30	0.35	0.30	0.30
v/c Ratio	0.42	0.56	0.11	0.46	0.85	0.10	0.29	0.65	0.18	0.32	0.83	0.83
Control Delay	17.9	25.2	0.4	16.2	31.5	0.3	16.5	25.9	2.4	16.9	31.9	31.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	17.9	25.2	0.4	16.2	31.5	0.3	16.5	25.9	2.4	16.9	31.9	31.9
LOS	B	C	A	B	C	A	B	C	A	B	C	C
Approach Delay		22.1			27.9			22.2				30.5
Approach LOS		C			C			C				C
90th %ile Green (s)	5.5	20.5	20.5	9.5	24.5	24.5	5.5	21.5	21.5	5.5	21.5	21.5
90th %ile Term Code	Max											
70th %ile Green (s)	5.5	20.5	20.5	9.5	24.5	24.5	5.5	21.5	21.5	5.5	21.5	21.5
70th %ile Term Code	Max	Hold	Hold	Max								
50th %ile Green (s)	5.5	20.5	20.5	9.5	24.5	24.5	5.5	21.5	21.5	5.5	21.5	21.5
50th %ile Term Code	Max	Hold	Hold	Max	Max	Max	Max	Hold	Hold	Max	Max	Max
30th %ile Green (s)	5.5	21.2	21.2	8.8	24.5	24.5	5.5	21.5	21.5	5.5	21.5	21.5
30th %ile Term Code	Max	Hold	Hold	Gap	Max	Max	Max	Hold	Hold	Max	Max	Max
10th %ile Green (s)	0.0	9.6	9.6	6.5	20.6	20.6	0.0	14.4	14.4	0.0	14.4	14.4
10th %ile Term Code	Skip	Gap	Gap	Gap	Hold	Hold	Skip	Hold	Hold	Skip	Gap	Gap
Queue Length 50th (ft)	27	110	0	49	250	0	19	144	0	24	193	193
Queue Length 95th (ft)	54	157	0	88	#375	0	43	201	16	50	#292	292
Internal Link Dist (ft)		372			339			1475				428
Turn Bay Length (ft)	170		35	150			215		115	305		
Base Capacity (vph)	249	1110	601	418	1319	686	247	1157	620	270	1151	1151
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.42	0.47	0.09	0.44	0.81	0.09	0.29	0.58	0.17	0.32	0.75	0.75

Intersection Summary

Area Type: Other  
 Cycle Length: 75  
 Actuated Cycle Length: 68.8  
 Natural Cycle: 75

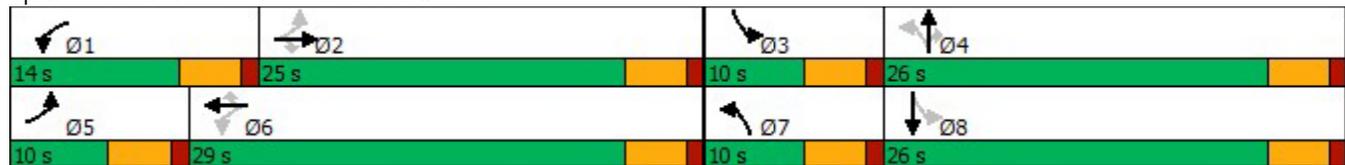
# Lanes, Volumes, Timings

## 15: Union Blvd & Platte Ave

Existing  
AM

Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.85	
Intersection Signal Delay: 26.2	Intersection LOS: C
Intersection Capacity Utilization 75.1%	ICU Level of Service D
Analysis Period (min) 15	
90th %ile Actuated Cycle: 75	
70th %ile Actuated Cycle: 75	
50th %ile Actuated Cycle: 75	
30th %ile Actuated Cycle: 75	
10th %ile Actuated Cycle: 44	
# 95th percentile volume exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.	

Splits and Phases: 15: Union Blvd & Platte Ave



HCM 6th TWSC  
2: Pikes Peak Ave & Bonfoy Ave

Existing  
AM

Intersection						
Int Delay, s/veh	0.2					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	5	624	532	5	5	5
Future Vol, veh/h	5	624	532	5	5	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	120	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	93	93	92	92	78	78
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	5	671	578	5	6	6

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	583	0	-	0	927 292
Stage 1	-	-	-	-	581 -
Stage 2	-	-	-	-	346 -
Critical Hdwy	4.14	-	-	-	6.84 6.94
Critical Hdwy Stg 1	-	-	-	-	5.84 -
Critical Hdwy Stg 2	-	-	-	-	5.84 -
Follow-up Hdwy	2.22	-	-	-	3.52 3.32
Pot Cap-1 Maneuver	987	-	-	-	*519 704
Stage 1	-	-	-	-	*522 -
Stage 2	-	-	-	-	*782 -
Platoon blocked, %		-	-	-	1
Mov Cap-1 Maneuver	987	-	-	-	*516 704
Mov Cap-2 Maneuver	-	-	-	-	*474 -
Stage 1	-	-	-	-	*519 -
Stage 2	-	-	-	-	*782 -

Approach	EB	WB	SB
HCM Control Delay, s	0.1	0	11.5
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	987	-	-	-	567
HCM Lane V/C Ratio	0.005	-	-	-	0.023
HCM Control Delay (s)	8.7	-	-	-	11.5
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.1

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

HCM 6th TWSC  
3: Pikes Peak Ave & Iowa Ave

Existing  
AM

Intersection						
Int Delay, s/veh	0.3					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	8	603	496	9	12	12
Future Vol, veh/h	8	603	496	9	12	12
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	75	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	93	93	92	92	78	78
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	9	648	539	10	15	15

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	549	0	-	0	886 275
Stage 1	-	-	-	-	544 -
Stage 2	-	-	-	-	342 -
Critical Hdwy	4.14	-	-	-	6.84 6.94
Critical Hdwy Stg 1	-	-	-	-	5.84 -
Critical Hdwy Stg 2	-	-	-	-	5.84 -
Follow-up Hdwy	2.22	-	-	-	3.52 3.32
Pot Cap-1 Maneuver	1017	-	-	-	*501 722
Stage 1	-	-	-	-	*546 -
Stage 2	-	-	-	-	*812 -
Platoon blocked, %		-	-	-	1
Mov Cap-1 Maneuver	1017	-	-	-	*497 722
Mov Cap-2 Maneuver	-	-	-	-	*489 -
Stage 1	-	-	-	-	*541 -
Stage 2	-	-	-	-	*812 -

Approach	EB	WB	SB
HCM Control Delay, s	0.1	0	11.5
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1017	-	-	-	583
HCM Lane V/C Ratio	0.008	-	-	-	0.053
HCM Control Delay (s)	8.6	-	-	-	11.5
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.2

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

HCM 6th TWSC  
13: Union Blvd & Memorial Dr

Existing  
AM

Intersection						
Int Delay, s/veh	0.5					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	26	25	25	714	630	82
Future Vol, veh/h	26	25	25	714	630	82
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	60	-	-	175
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	83	83	93	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	31	30	27	768	677	88

Major/Minor	Minor2	Major1		Major2	
Conflicting Flow All	1115	339	765	0	0
Stage 1	677	-	-	-	-
Stage 2	438	-	-	-	-
Critical Hdwy	6.84	6.94	4.14	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.22	-	-
Pot Cap-1 Maneuver	*609	*833	1151	-	-
Stage 1	*786	-	-	-	-
Stage 2	*761	-	-	-	-
Platoon blocked, %	1	1	1	-	-
Mov Cap-1 Maneuver	*595	*833	1151	-	-
Mov Cap-2 Maneuver	*620	-	-	-	-
Stage 1	*768	-	-	-	-
Stage 2	*761	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	10.6	0.3	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1151	-	709	-	-
HCM Lane V/C Ratio	0.023	-	0.087	-	-
HCM Control Delay (s)	8.2	-	10.6	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	0.1	-	0.3	-	-

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

Lanes, Volumes, Timings  
1: Union Blvd & Pikes Peak Ave

Existing  
PM



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	206	559	92	74	372	105	164	593	51	96	681	174
Future Volume (vph)	206	559	92	74	372	105	164	593	51	96	681	174
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100		125	75		0	180		35	125		0
Storage Lanes	1		1	1		0	1		1	1		0
Taper Length (ft)	52			60			110			90		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	0.95	1.00	0.95	1.00	1.00	0.95	0.95
Frt			0.850		0.967				0.850		0.969	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3539	1583	1770	3422	0	1770	3539	1583	1770	3429	0
Flt Permitted	0.354			0.360			0.112			0.274		
Satd. Flow (perm)	659	3539	1583	671	3422	0	209	3539	1583	510	3429	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			124		34				124		30	
Link Speed (mph)		35			35			35			35	
Link Distance (ft)		871			409			998			1555	
Travel Time (s)		17.0			8.0			19.4			30.3	
Peak Hour Factor	0.93	0.93	0.93	0.92	0.92	0.92	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	222	601	99	80	404	114	176	638	55	103	732	187
Shared Lane Traffic (%)												
Lane Group Flow (vph)	222	601	99	80	518	0	176	638	55	103	919	0
Enter Blocked Intersection	No											
Lane Alignment	Left	Left	Right									
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane		Yes			Yes			Yes			Yes	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	2	1	1	2	
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100	20	20	100		20	100	20	20	100	
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	6	20	20	6	
Detector 1 Type	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex		CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+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			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		CI+Ex			CI+Ex			CI+Ex			CI+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2		2	6			4		4	8		

Lanes, Volumes, Timings  
1: Union Blvd & Pikes Peak Ave

Existing  
PM



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	5	2	2	1	6		7	4	4	3	8	
Switch Phase												
Minimum Initial (s)	4.0	6.0	6.0	4.0	6.0		4.0	4.0	4.0	4.0	4.0	
Minimum Split (s)	9.0	35.0	35.0	9.0	35.0		9.0	37.0	37.0	9.0	37.0	
Total Split (s)	12.0	45.0	45.0	12.0	45.0		12.0	45.0	45.0	12.0	45.0	
Total Split (%)	10.5%	39.5%	39.5%	10.5%	39.5%		10.5%	39.5%	39.5%	10.5%	39.5%	
Maximum Green (s)	7.0	39.0	39.0	7.0	39.0		7.0	39.0	39.0	7.0	39.0	
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0		3.0	4.0	4.0	3.0	4.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.0	6.0	6.0	5.0	6.0		5.0	6.0	6.0	5.0	6.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	C-Max	C-Max	None	C-Max		None	None	None	None	None	
Walk Time (s)		7.0	7.0		7.0			7.0	7.0		7.0	
Flash Dont Walk (s)		22.0	22.0		22.0			24.0	24.0		24.0	
Pedestrian Calls (#/hr)		0	0		0			0	0		0	
Act Effect Green (s)	52.4	44.4	44.4	48.6	40.6		43.7	35.7	35.7	43.6	35.7	
Actuated g/C Ratio	0.46	0.39	0.39	0.43	0.36		0.38	0.31	0.31	0.38	0.31	
v/c Ratio	0.57	0.44	0.14	0.23	0.42		1.00	0.58	0.09	0.38	0.84	
Control Delay	27.0	28.3	3.1	18.8	27.5		101.4	30.6	0.4	33.6	57.2	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay	27.0	28.3	3.1	18.8	27.5		101.4	30.6	0.4	33.6	57.2	
LOS	C	C	A	B	C		F	C	A	C	E	
Approach Delay		25.3			26.3			43.0			54.8	
Approach LOS		C			C			D			D	
90th %ile Green (s)	7.0	39.0	39.0	7.0	39.0		7.0	39.0	39.0	7.0	39.0	
90th %ile Term Code	Max	Coord	Coord	Max	Coord		Max	Hold	Hold	Max	Max	
70th %ile Green (s)	7.0	39.0	39.0	7.0	39.0		7.0	39.0	39.0	7.0	39.0	
70th %ile Term Code	Max	Coord	Coord	Max	Coord		Max	Hold	Hold	Max	Max	
50th %ile Green (s)	9.0	39.7	39.7	8.3	39.0		7.0	37.0	37.0	7.0	37.0	
50th %ile Term Code	Max	Coord	Coord	Gap	Coord		Max	Hold	Hold	Max	Gap	
30th %ile Green (s)	11.8	44.1	44.1	7.2	39.5		7.0	33.7	33.7	7.0	33.7	
30th %ile Term Code	Gap	Coord	Coord	Gap	Coord		Max	Hold	Hold	Max	Gap	
10th %ile Green (s)	9.1	60.4	60.4	0.0	46.3		7.0	29.9	29.9	6.7	29.6	
10th %ile Term Code	Gap	Coord	Coord	Skip	Coord		Max	Hold	Hold	Gap	Gap	
Queue Length 50th (ft)	95	180	0	31	143		75	202	0	69	363	
Queue Length 95th (ft)	154	237	24	62	192		#221	251	m0	m104	431	
Internal Link Dist (ft)		791			329			918			1475	
Turn Bay Length (ft)	100		125	75			180		35	125		
Base Capacity (vph)	388	1379	693	358	1239		176	1210	623	272	1192	
Starvation Cap Reductn	0	0	0	0	0		0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0		0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0		0	0	0	0	0	
Reduced v/c Ratio	0.57	0.44	0.14	0.22	0.42		1.00	0.53	0.09	0.38	0.77	

Intersection Summary

Area Type: Other



Lanes, Volumes, Timings  
4: Printers Pkwy & Pikes Peak Ave

Existing  
PM



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	16	582	174	24	354	28	132	8	50	8	3	13
Future Volume (vph)	16	582	174	24	354	28	132	8	50	8	3	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	80		0	120		0	0		195	0		0
Storage Lanes	1		1	1		0	1		1	1		1
Taper Length (ft)	60			90			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00
Frt			0.850		0.989				0.850			0.850
Flt Protected	0.950			0.950			0.950	0.958		0.950		
Satd. Flow (prot)	1770	3539	1583	1770	3500	0	1681	1695	1583	1770	1863	1583
Flt Permitted	0.495			0.377			0.950	0.958		0.950		
Satd. Flow (perm)	922	3539	1583	702	3500	0	1681	1695	1583	1770	1863	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			187		10				71			71
Link Speed (mph)		35			35			35				35
Link Distance (ft)		606			424			673				158
Travel Time (s)		11.8			8.3			13.1				3.1
Peak Hour Factor	0.93	0.93	0.93	0.92	0.92	0.92	0.87	0.87	0.87	0.78	0.78	0.78
Adj. Flow (vph)	17	626	187	26	385	30	152	9	57	10	4	17
Shared Lane Traffic (%)							47%					
Lane Group Flow (vph)	17	626	187	26	415	0	81	80	57	10	4	17
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	R NA	Left	Left	R NA	Left	Left	R NA	L NA	Left	R NA
Median Width(ft)		12			12			24				24
Link Offset(ft)		0			0			-10				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane		Yes			Yes							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		35	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100		20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0		0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0		0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20	20	6		20	6	20	20	6	20
Detector 1 Type	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex		CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+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	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	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	0.0
Detector 2 Position(ft)		94			94			94				94
Detector 2 Size(ft)		6			6			6				6
Detector 2 Type		CI+Ex			CI+Ex			CI+Ex				CI+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				0.0
Turn Type	Perm	NA	Perm	Perm	NA		Split	NA	Perm	Split	NA	Perm
Protected Phases		2			6		8	8		4	4	
Permitted Phases	2		2	6					8			4

Lanes, Volumes, Timings  
4: Printers Pkwy & Pikes Peak Ave

Existing  
PM



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	2	2	2	6	6		8	8	8	4	4	4
Switch Phase												
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	30.0	30.0	30.0	30.0	30.0		32.0	32.0	32.0	28.5	28.5	28.5
Total Split (s)	85.0	85.0	85.0	85.0	85.0		31.0	31.0	31.0	22.0	22.0	22.0
Total Split (%)	61.6%	61.6%	61.6%	61.6%	61.6%		22.5%	22.5%	22.5%	15.9%	15.9%	15.9%
Maximum Green (s)	79.0	79.0	79.0	79.0	79.0		25.0	25.0	25.0	16.0	16.0	16.0
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0		6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	C-Max	C-Max	C-Max	Max	Max		Max	Max	Max	Max	Max	Max
Walk Time (s)	7.0	7.0	7.0	7.0	7.0		7.0	7.0	7.0			
Flash Dont Walk (s)	17.0	17.0	17.0	17.0	17.0		19.0	19.0	19.0			
Pedestrian Calls (#/hr)	0	0	0	0	0		0	0	0			
Act Effect Green (s)	79.0	79.0	79.0	79.0	79.0		25.0	25.0	25.0	16.0	16.0	16.0
Actuated g/C Ratio	0.57	0.57	0.57	0.57	0.57		0.18	0.18	0.18	0.12	0.12	0.12
v/c Ratio	0.03	0.31	0.19	0.06	0.21		0.27	0.26	0.17	0.05	0.02	0.07
Control Delay	13.2	15.8	2.2	13.8	14.3		51.4	51.2	7.8	55.0	54.3	0.5
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	13.2	15.8	2.2	13.8	14.3		51.4	51.2	7.8	55.0	54.3	0.5
LOS	B	B	A	B	B		D	D	A	D	D	A
Approach Delay		12.7			14.2			39.9			25.0	
Approach LOS		B			B			D			C	
90th %ile Green (s)	79.0	79.0	79.0	79.0	79.0		25.0	25.0	25.0	16.0	16.0	16.0
90th %ile Term Code	Coord	Coord	Coord	Coord	Coord		Ped	Ped	Ped	MaxR	MaxR	MaxR
70th %ile Green (s)	79.0	79.0	79.0	79.0	79.0		25.0	25.0	25.0	16.0	16.0	16.0
70th %ile Term Code	Coord	Coord	Coord	Coord	Coord		Ped	Ped	Ped	MaxR	MaxR	MaxR
50th %ile Green (s)	79.0	79.0	79.0	79.0	79.0		25.0	25.0	25.0	16.0	16.0	16.0
50th %ile Term Code	Coord	Coord	Coord	Coord	Coord		Ped	Ped	Ped	MaxR	MaxR	MaxR
30th %ile Green (s)	79.0	79.0	79.0	79.0	79.0		25.0	25.0	25.0	16.0	16.0	16.0
30th %ile Term Code	Coord	Coord	Coord	Coord	Coord		Ped	Ped	Ped	MaxR	MaxR	MaxR
10th %ile Green (s)	79.0	79.0	79.0	79.0	79.0		25.0	25.0	25.0	16.0	16.0	16.0
10th %ile Term Code	Coord	Coord	Coord	Coord	Coord		Ped	Ped	Ped	MaxR	MaxR	MaxR
Queue Length 50th (ft)	6	147	0	10	88		66	65	0	8	3	0
Queue Length 95th (ft)	18	185	33	25	117		116	114	25	24	13	0
Internal Link Dist (ft)		526			344			593			78	
Turn Bay Length (ft)	80			120					195			
Base Capacity (vph)	527	2025	986	401	2007		304	307	344	205	216	246
Starvation Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.03	0.31	0.19	0.06	0.21		0.27	0.26	0.17	0.05	0.02	0.07

Intersection Summary

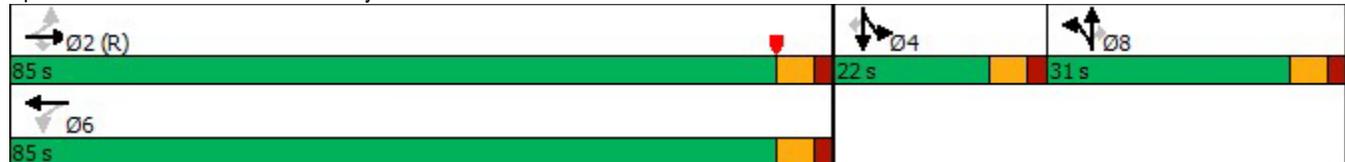
Area Type: Other

Lanes, Volumes, Timings  
 4: Printers Pkwy & Pikes Peak Ave

Existing  
 PM

Cycle Length: 138	
Actuated Cycle Length: 138	
Offset: 0 (0%), Referenced to phase 2:EBTL, Start of Yellow	
Natural Cycle: 95	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.31	
Intersection Signal Delay: 17.3	Intersection LOS: B
Intersection Capacity Utilization 40.5%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 4: Printers Pkwy & Pikes Peak Ave



Lanes, Volumes, Timings  
12: Union Blvd & Parkside Dr

Existing  
PM



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	101	253	585	33	36	822
Future Volume (vph)	101	253	585	33	36	822
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	60	0		0	135	
Storage Lanes	1	1		0	1	
Taper Length (ft)	55				90	
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	0.95
Frt		0.850	0.992			
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1593	1425	3160	0	1593	3185
Flt Permitted	0.950				0.362	
Satd. Flow (perm)	1593	1425	3160	0	607	3185
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		291	8			
Link Speed (mph)	30		35			35
Link Distance (ft)	566		648			477
Travel Time (s)	12.9		12.6			9.3
Peak Hour Factor	0.87	0.87	0.93	0.93	0.93	0.93
Adj. Flow (vph)	116	291	629	35	39	884
Shared Lane Traffic (%)						
Lane Group Flow (vph)	116	291	664	0	39	884
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		12			12
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane	Yes		Yes			Yes
Headway Factor	1.14	1.14	1.14	1.14	1.14	1.14
Turning Speed (mph)	15	9		9	15	
Number of Detectors	1	1	2		1	2
Detector Template	Left	Right	Thru		Left	Thru
Leading Detector (ft)	20	20	100		20	100
Trailing Detector (ft)	0	0	0		0	0
Detector 1 Position(ft)	0	0	0		0	0
Detector 1 Size(ft)	20	20	6		20	6
Detector 1 Type	CI+Ex	CI+Ex	CI+Ex		CI+Ex	CI+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0		0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0		0.0	0.0
Detector 1 Delay (s)	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			CI+Ex			CI+Ex
Detector 2 Channel						
Detector 2 Extend (s)			0.0			0.0
Turn Type	Prot	Perm	NA		pm+pt	NA
Protected Phases	8		2		1	6
Permitted Phases		8			6	

Lanes, Volumes, Timings  
12: Union Blvd & Parkside Dr

Existing  
PM



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Detector Phase	8	8	2		1	6
Switch Phase						
Minimum Initial (s)	8.0	8.0	20.0		4.0	20.0
Minimum Split (s)	28.0	28.0	27.0		9.5	25.0
Total Split (s)	29.0	29.0	66.0		19.0	85.0
Total Split (%)	25.4%	25.4%	57.9%		16.7%	74.6%
Maximum Green (s)	23.0	23.0	61.0		14.0	80.0
Yellow Time (s)	4.0	4.0	3.0		3.0	3.0
All-Red Time (s)	2.0	2.0	2.0		2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	6.0	6.0	5.0		5.0	5.0
Lead/Lag			Lag		Lead	
Lead-Lag Optimize?			Yes		Yes	
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Recall Mode	None	None	C-Max		None	C-Max
Walk Time (s)	7.0	7.0	7.0			
Flash Dont Walk (s)	15.0	15.0	15.0			
Pedestrian Calls (#/hr)	0	0	0			
Act Effect Green (s)	13.6	13.6	82.5		89.4	89.4
Actuated g/C Ratio	0.12	0.12	0.72		0.78	0.78
v/c Ratio	0.61	0.68	0.29		0.07	0.35
Control Delay	60.8	13.9	7.0		8.7	11.1
Queue Delay	0.0	0.0	0.0		0.0	0.0
Total Delay	60.8	13.9	7.0		8.7	11.1
LOS	E	B	A		A	B
Approach Delay	27.3		7.0			11.0
Approach LOS	C		A			B
90th %ile Green (s)	19.1	19.1	71.8		7.1	83.9
90th %ile Term Code	Gap	Gap	Coord		Gap	Coord
70th %ile Green (s)	15.8	15.8	75.8		6.4	87.2
70th %ile Term Code	Gap	Gap	Coord		Gap	Coord
50th %ile Green (s)	13.6	13.6	78.3		6.1	89.4
50th %ile Term Code	Gap	Gap	Coord		Gap	Coord
30th %ile Green (s)	11.3	11.3	91.7		0.0	91.7
30th %ile Term Code	Gap	Gap	Coord		Skip	Coord
10th %ile Green (s)	8.1	8.1	94.9		0.0	94.9
10th %ile Term Code	Gap	Gap	Coord		Skip	Coord
Queue Length 50th (ft)	82	0	90		13	177
Queue Length 95th (ft)	132	69	142		m23	255
Internal Link Dist (ft)	486		568			397
Turn Bay Length (ft)	60				135	
Base Capacity (vph)	321	519	2288		597	2498
Starvation Cap Reductn	0	0	0		0	0
Spillback Cap Reductn	0	0	0		0	0
Storage Cap Reductn	0	0	0		0	0
Reduced v/c Ratio	0.36	0.56	0.29		0.07	0.35

Intersection Summary

Area Type: CBD



Lanes, Volumes, Timings  
15: Union Blvd & Platte Ave

Existing  
PM



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	233	978	41	130	676	64	74	722	136	105	737	65
Future Volume (vph)	233	978	41	130	676	64	74	722	136	105	737	65
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	170		35	150		0	215		115	305		0
Storage Lanes	1		1	1		1	1		1	1		0
Taper Length (ft)	120			65			40			75		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.95
Frt			0.850			0.850			0.850		0.988	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	3539	1583	1770	3497	0
Flt Permitted	0.232			0.105			0.188			0.211		
Satd. Flow (perm)	432	3539	1583	196	3539	1583	350	3539	1583	393	3497	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			124			124			124			9
Link Speed (mph)		35			35			35			35	
Link Distance (ft)		452			419			1555			508	
Travel Time (s)		8.8			8.2			30.3			9.9	
Peak Hour Factor	0.95	0.95	0.95	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	245	1029	43	140	727	69	80	776	146	113	792	70
Shared Lane Traffic (%)												
Lane Group Flow (vph)	245	1029	43	140	727	69	80	776	146	113	862	0
Enter Blocked Intersection	No											
Lane Alignment	Left	Left	Right									
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane								Yes			Yes	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0	0	
Detector 1 Size(ft)	20	6	20	20	6	20	20	6	20	20	6	
Detector 1 Type	CI+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	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	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	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		CI+Ex			CI+Ex			CI+Ex			CI+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2		2	6		6	4		4	8		

Lanes, Volumes, Timings  
15: Union Blvd & Platte Ave

Existing  
PM



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	5	2	2	1	6	6	7	4	4	3	8	
Switch Phase												
Minimum Initial (s)	4.0	6.0	6.0	4.0	6.0	6.0	4.0	4.0	4.0	4.0	4.0	
Minimum Split (s)	9.0	35.0	35.0	9.0	35.0	35.0	9.0	37.0	37.0	9.0	37.0	
Total Split (s)	12.0	45.0	45.0	12.0	45.0	45.0	12.0	45.0	45.0	12.0	45.0	
Total Split (%)	10.5%	39.5%	39.5%	10.5%	39.5%	39.5%	10.5%	39.5%	39.5%	10.5%	39.5%	
Maximum Green (s)	7.0	39.0	39.0	7.0	39.0	39.0	7.0	39.0	39.0	7.0	39.0	
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.0	6.0	6.0	5.0	6.0	6.0	5.0	6.0	6.0	5.0	6.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes											
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	Max	Max	None	Max	
Walk Time (s)		7.0	7.0		7.0	7.0		7.0	7.0		7.0	
Flash Dont Walk (s)		22.0	22.0		22.0	22.0		24.0	24.0		24.0	
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	
Act Effect Green (s)	47.0	39.0	39.0	47.0	39.0	39.0	46.9	39.1	39.1	48.0	41.4	
Actuated g/C Ratio	0.41	0.34	0.34	0.41	0.34	0.34	0.41	0.34	0.34	0.42	0.36	
v/c Ratio	0.94	0.85	0.07	0.79	0.60	0.11	0.35	0.64	0.23	0.45	0.68	
Control Delay	69.6	42.9	0.2	51.4	33.6	0.7	16.9	22.6	3.5	24.5	34.3	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	69.6	42.9	0.2	51.4	33.6	0.7	16.9	22.6	3.5	24.5	34.3	
LOS	E	D	A	D	C	A	B	C	A	C	C	
Approach Delay		46.4			33.8			19.4			33.1	
Approach LOS		D			C			B			C	
90th %ile Green (s)	7.0	39.0	39.0	7.0	39.0	39.0	7.0	39.0	39.0	7.0	39.0	
90th %ile Term Code	Max	Coord	Coord	Max	Coord	Coord	Max	MaxR	MaxR	Max	MaxR	
70th %ile Green (s)	7.0	39.0	39.0	7.0	39.0	39.0	7.0	39.0	39.0	7.0	39.0	
70th %ile Term Code	Max	Coord	Coord	Max	Coord	Coord	Max	MaxR	MaxR	Max	MaxR	
50th %ile Green (s)	7.0	39.0	39.0	7.0	39.0	39.0	7.0	39.0	39.0	7.0	39.0	
50th %ile Term Code	Max	Coord	Coord	Max	Coord	Coord	Max	MaxR	MaxR	Max	MaxR	
30th %ile Green (s)	7.0	39.0	39.0	7.0	39.0	39.0	7.0	39.0	39.0	7.0	39.0	
30th %ile Term Code	Max	Coord	Coord	Max	Coord	Coord	Max	MaxR	MaxR	Max	MaxR	
10th %ile Green (s)	7.0	39.0	39.0	7.0	39.0	39.0	0.0	39.3	39.3	6.7	51.0	
10th %ile Term Code	Max	Coord	Coord	Max	Coord	Coord	Skip	MaxR	MaxR	Gap	MaxR	
Queue Length 50th (ft)	111	366	0	59	231	0	22	120	6	47	285	
Queue Length 95th (ft)	#251	454	0	#154	294	3	m42	154	19	83	360	
Internal Link Dist (ft)		372			339			1475			428	
Turn Bay Length (ft)	170		35	150			215		115	305		
Base Capacity (vph)	260	1210	623	177	1210	623	231	1212	624	249	1275	
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.94	0.85	0.07	0.79	0.60	0.11	0.35	0.64	0.23	0.45	0.68	

Intersection Summary

Area Type: Other

Lanes, Volumes, Timings  
 15: Union Blvd & Platte Ave

Existing  
 PM

Cycle Length: 114  
 Actuated Cycle Length: 114  
 Offset: 100 (88%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green  
 Natural Cycle: 90  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.94  
 Intersection Signal Delay: 34.2 Intersection LOS: C  
 Intersection Capacity Utilization 79.1% ICU Level of Service D  
 Analysis Period (min) 15  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.  
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 15: Union Blvd & Platte Ave



HCM 6th TWSC  
2: Pikes Peak Ave & Bonfoy Ave

Existing  
PM

Intersection						
Int Delay, s/veh	0.2					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	5	666	541	0	5	5
Future Vol, veh/h	5	666	541	0	5	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	120	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	93	93	92	92	78	78
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	5	716	588	0	6	6

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	588	0	-	0	956 294
Stage 1	-	-	-	-	588 -
Stage 2	-	-	-	-	368 -
Critical Hdwy	4.14	-	-	-	6.84 6.94
Critical Hdwy Stg 1	-	-	-	-	5.84 -
Critical Hdwy Stg 2	-	-	-	-	5.84 -
Follow-up Hdwy	2.22	-	-	-	3.52 3.32
Pot Cap-1 Maneuver	983	-	-	-	*482 702
Stage 1	-	-	-	-	*518 -
Stage 2	-	-	-	-	*786 -
Platoon blocked, %		-	-	-	1
Mov Cap-1 Maneuver	983	-	-	-	*480 702
Mov Cap-2 Maneuver	-	-	-	-	*467 -
Stage 1	-	-	-	-	*515 -
Stage 2	-	-	-	-	*786 -

Approach	EB	WB	SB
HCM Control Delay, s	0.1	0	11.6
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	983	-	-	-	561
HCM Lane V/C Ratio	0.005	-	-	-	0.023
HCM Control Delay (s)	8.7	-	-	-	11.6
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.1

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

HCM 6th TWSC  
3: Pikes Peak Ave & Iowa Ave

Existing  
PM

Intersection						
Int Delay, s/veh	0.3					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	8	658	501	9	12	12
Future Vol, veh/h	8	658	501	9	12	12
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	75	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	93	93	92	92	78	78
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	9	708	545	10	15	15

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	555	0	-	0	922 278
Stage 1	-	-	-	-	550 -
Stage 2	-	-	-	-	372 -
Critical Hdwy	4.14	-	-	-	6.84 6.94
Critical Hdwy Stg 1	-	-	-	-	5.84 -
Critical Hdwy Stg 2	-	-	-	-	5.84 -
Follow-up Hdwy	2.22	-	-	-	3.52 3.32
Pot Cap-1 Maneuver	1011	-	-	-	*514 719
Stage 1	-	-	-	-	*542 -
Stage 2	-	-	-	-	*786 -
Platoon blocked, %		-	-	-	1
Mov Cap-1 Maneuver	1011	-	-	-	*509 719
Mov Cap-2 Maneuver	-	-	-	-	*488 -
Stage 1	-	-	-	-	*537 -
Stage 2	-	-	-	-	*786 -

Approach	EB	WB	SB
HCM Control Delay, s	0.1	0	11.5
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1011	-	-	-	581
HCM Lane V/C Ratio	0.009	-	-	-	0.053
HCM Control Delay (s)	8.6	-	-	-	11.5
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.2

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

Intersection						
Int Delay, s/veh	0.7					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	Y		Y	↑↑	↑↑	Y
Traffic Vol, veh/h	20	50	50	788	808	39
Future Vol, veh/h	20	50	50	788	808	39
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	60	-	-	175
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	83	83	93	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	24	60	54	847	869	42

Major/Minor	Minor2	Major1		Major2	
Conflicting Flow All	1401	435	911	0	0
Stage 1	869	-	-	-	-
Stage 2	532	-	-	-	-
Critical Hdwy	6.84	6.94	4.14	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.22	-	-
Pot Cap-1 Maneuver	*456	*752	*1125	-	-
Stage 1	*710	-	-	-	-
Stage 2	*735	-	-	-	-
Platoon blocked, %	1	1	1	-	-
Mov Cap-1 Maneuver	*434	*752	*1125	-	-
Mov Cap-2 Maneuver	*519	-	-	-	-
Stage 1	*676	-	-	-	-
Stage 2	*735	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	11.2	0.5	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	* 1125	-	667	-	-
HCM Lane V/C Ratio	0.048	-	0.126	-	-
HCM Control Delay (s)	8.4	-	11.2	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	0.1	-	0.4	-	-

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

Lanes, Volumes, Timings  
1: Union Blvd & Pikes Peak Ave

Existing + Site  
AM



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	132	559	174	61	506	162	164	578	150	200	538	179
Future Volume (vph)	132	559	174	61	506	162	164	578	150	200	538	179
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	300		125	150		0	500		35	125		0
Storage Lanes	1		1	1		0	1		1	1		0
Taper Length (ft)	50			50			90			90		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	0.95	1.00	0.95	1.00	1.00	0.95	0.95
Frt			0.850		0.964				0.850		0.963	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3539	1583	1770	3412	0	1770	3539	1583	1770	3408	0
Flt Permitted	0.201			0.348			0.202			0.276		
Satd. Flow (perm)	374	3539	1583	648	3412	0	376	3539	1583	514	3408	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			133		32				103		35	
Link Speed (mph)		35			35			35			35	
Link Distance (ft)		871			409			841			1555	
Travel Time (s)		17.0			8.0			16.4			30.3	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	142	601	187	66	544	174	176	622	161	215	578	192
Shared Lane Traffic (%)												
Lane Group Flow (vph)	142	601	187	66	718	0	176	622	161	215	770	0
Enter Blocked Intersection	No	No	No	No								
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane		Yes			Yes							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	2	1	1	2	
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100	20	20	100		20	100	20	20	100	
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	6	20	20	6	
Detector 1 Type	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex		CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+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			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		CI+Ex			CI+Ex			CI+Ex			CI+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	custom	pm+pt	NA	
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2		2	6			4		2	8		

Lanes, Volumes, Timings  
1: Union Blvd & Pikes Peak Ave

Existing + Site  
AM



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	5	2	2	1	6		7	4	2	3	8	
Switch Phase												
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Minimum Split (s)	9.0	33.0	33.0	9.0	33.0		9.0	33.0	33.0	9.0	33.0	
Total Split (s)	20.0	48.0	48.0	20.0	48.0		20.0	50.0	48.0	20.0	50.0	
Total Split (%)	14.5%	34.8%	34.8%	14.5%	34.8%		14.5%	36.2%	34.8%	14.5%	36.2%	
Maximum Green (s)	15.0	42.0	42.0	15.0	42.0		15.0	44.0	42.0	15.0	44.0	
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0		3.0	4.0	4.0	3.0	4.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.0	6.0	6.0	5.0	6.0		5.0	6.0	6.0	5.0	6.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	C-Max	C-Max	None	C-Max		None	Max	C-Max	None	Max	
Walk Time (s)		7.0	7.0		7.0			7.0	7.0		7.0	
Flash Dont Walk (s)		20.0	20.0		20.0			20.0	20.0		20.0	
Pedestrian Calls (#/hr)		0	0		0			0	0		0	
Act Effect Green (s)	62.0	50.8	50.8	54.6	45.1		59.1	45.2	50.8	60.9	46.1	
Actuated g/C Ratio	0.45	0.37	0.37	0.40	0.33		0.43	0.33	0.37	0.44	0.33	
v/c Ratio	0.49	0.46	0.28	0.20	0.63		0.60	0.54	0.25	0.61	0.66	
Control Delay	28.4	35.6	11.6	26.7	49.8		31.0	40.2	13.5	30.1	41.1	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay	28.4	35.6	11.6	26.7	49.8		31.0	40.2	13.5	30.1	41.1	
LOS	C	D	B	C	D		C	D	B	C	D	
Approach Delay		29.7			47.9			34.1			38.7	
Approach LOS		C			D			C			D	
Queue Length 50th (ft)	74	220	32	43	323		91	242	35	114	299	
Queue Length 95th (ft)	119	286	94	67	394		141	305	92	171	378	
Internal Link Dist (ft)		791			329			761			1475	
Turn Bay Length (ft)	300		125	150			500		35	125		
Base Capacity (vph)	322	1302	666	407	1137		318	1158	647	367	1161	
Starvation Cap Reductn	0	0	0	0	0		0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0		0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0		0	0	0	0	0	
Reduced v/c Ratio	0.44	0.46	0.28	0.16	0.63		0.55	0.54	0.25	0.59	0.66	

Intersection Summary

Area Type:	Other
Cycle Length:	138
Actuated Cycle Length:	138
Offset:	0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow, Master Intersection
Natural Cycle:	85
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.66
Intersection Signal Delay:	37.1
Intersection LOS:	D
Intersection Capacity Utilization:	74.5%
ICU Level of Service:	D
Analysis Period (min):	15

Lanes, Volumes, Timings  
 1: Union Blvd & Pikes Peak Ave

Existing + Site  
 AM

Splits and Phases: 1: Union Blvd & Pikes Peak Ave



Lanes, Volumes, Timings  
3: Iowa Ave & Pikes Peak Ave

Existing + Site  
AM



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	19	585	78	53	525	7	122	35	71	12	94	31
Future Volume (vph)	19	585	78	53	525	7	122	35	71	12	94	31
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	120		0	120		0	0		150	0		0
Storage Lanes	1		0	1		0	1		1	1		0
Taper Length (ft)	180			150			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frnt		0.982			0.998			0.899			0.962	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3476	0	1770	3532	0	1770	1675	0	1770	1792	0
Flt Permitted	0.370			0.276			0.542			0.679		
Satd. Flow (perm)	689	3476	0	514	3532	0	1010	1675	0	1265	1792	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		14			1			72			11	
Link Speed (mph)		35			35			25			25	
Link Distance (ft)		802			606			553			364	
Travel Time (s)		15.6			11.8			15.1			9.9	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.87	0.87	0.87	0.87	0.87	0.87
Adj. Flow (vph)	20	629	84	57	565	8	140	40	82	14	108	36
Shared Lane Traffic (%)												
Lane Group Flow (vph)	20	713	0	57	573	0	140	122	0	14	144	0
Enter Blocked Intersection	No											
Lane Alignment	Left	Left	Right									
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane		Yes			Yes							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru										
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	CI+Ex	CI+Ex										
Detector 1 Channel												
Detector 1 Extend (s)	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	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		CI+Ex			CI+Ex			CI+Ex			CI+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA										
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2			6			4			8		

# Lanes, Volumes, Timings

## 3: Iowa Ave & Pikes Peak Ave

Existing + Site  
AM

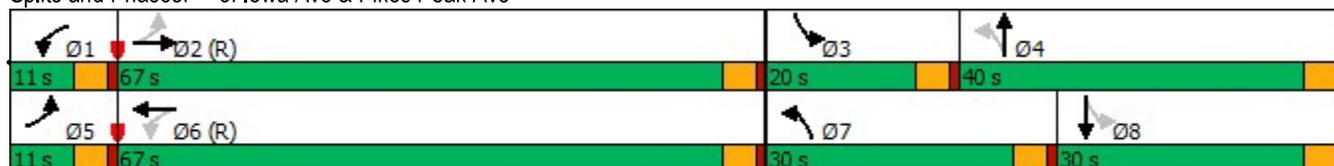


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	5	2		1	6		7	4		3	8	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	9.5	22.5		9.5	22.5		9.5	22.5		9.5	22.5	
Total Split (s)	11.0	67.0		11.0	67.0		30.0	40.0		20.0	30.0	
Total Split (%)	8.0%	48.6%		8.0%	48.6%		21.7%	29.0%		14.5%	21.7%	
Maximum Green (s)	6.5	62.5		6.5	62.5		25.5	35.5		15.5	25.5	
Yellow Time (s)	3.5	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	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.5	4.5		4.5	4.5		4.5	4.5		4.5	4.5	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		None	C-Max		None	Max		None	Max	
Act Effect Green (s)	69.7	64.7		70.9	67.0		55.5	50.9		44.6	38.4	
Actuated g/C Ratio	0.51	0.47		0.51	0.49		0.40	0.37		0.32	0.28	
v/c Ratio	0.05	0.44		0.18	0.33		0.29	0.18		0.03	0.28	
Control Delay	7.9	21.5		14.2	18.5		28.7	14.9		25.8	38.8	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	7.9	21.5		14.2	18.5		28.7	14.9		25.8	38.8	
LOS	A	C		B	B		C	B		C	D	
Approach Delay		21.2			18.1			22.3			37.6	
Approach LOS		C			B			C			D	
Queue Length 50th (ft)	7	262		20	137		81	27		8	94	
Queue Length 95th (ft)	m12	327		37	173		125	76		21	156	
Internal Link Dist (ft)		722			526			473			284	
Turn Bay Length (ft)	120			120								
Base Capacity (vph)	399	1636		323	1714		546	663		545	506	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.05	0.44		0.18	0.33		0.26	0.18		0.03	0.28	

### Intersection Summary

Area Type: Other  
 Cycle Length: 138  
 Actuated Cycle Length: 138  
 Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green  
 Natural Cycle: 65  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.44  
 Intersection Signal Delay: 21.7  
 Intersection LOS: C  
 Intersection Capacity Utilization 51.4%  
 ICU Level of Service A  
 Analysis Period (min) 15  
 m Volume for 95th percentile queue is metered by upstream signal.

### Splits and Phases: 3: Iowa Ave & Pikes Peak Ave



Lanes, Volumes, Timings  
4: Printers Pkwy & Pikes Peak Ave

Existing + Site  
AM



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	6	438	198	52	500	10	104	5	25	1	0	7
Future Volume (vph)	6	438	198	52	500	10	104	5	25	1	0	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	80		0	120		0	0		195	0		0
Storage Lanes	1		1	1		0	1		1	1		1
Taper Length (ft)	150			90			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00
Frt			0.850		0.997				0.850			0.850
Flt Protected	0.950			0.950			0.950	0.957		0.950		
Satd. Flow (prot)	1770	3539	1583	1770	3529	0	1681	1694	1583	1770	1863	1583
Flt Permitted	0.447			0.482			0.950	0.957		0.950		
Satd. Flow (perm)	833	3539	1583	898	3529	0	1681	1694	1583	1770	1863	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			213		2				71			357
Link Speed (mph)		35			35			35				35
Link Distance (ft)		606			540			416				158
Travel Time (s)		11.8			10.5			8.1				3.1
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.87	0.87	0.87	0.78	0.78	0.78
Adj. Flow (vph)	6	471	213	56	538	11	120	6	29	1	0	9
Shared Lane Traffic (%)							48%					
Lane Group Flow (vph)	6	471	213	56	549	0	62	64	29	1	0	9
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	R NA	Left	Left	R NA	Left	Left	R NA	L NA	Left	R NA
Median Width(ft)		12			12			12				12
Link Offset(ft)		0			0			-10				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane		Yes			Yes							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		35	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100		20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0		0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0		0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20	20	6		20	6	20	20	6	20
Detector 1 Type	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex		CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+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	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	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	0.0
Detector 2 Position(ft)		94			94			94				94
Detector 2 Size(ft)		6			6			6				6
Detector 2 Type		CI+Ex			CI+Ex			CI+Ex				CI+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				0.0
Turn Type	Perm	NA	Perm	Perm	NA		Split	NA	Perm	Split		Perm
Protected Phases		2			6		8	8		4	4	
Permitted Phases	2		2	6					8			4

Lanes, Volumes, Timings  
4: Printers Pkwy & Pikes Peak Ave

Existing + Site  
AM



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	2	2	2	6	6		8	8	8	4	4	4
Switch Phase												
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	30.0	30.0	30.0	30.0	30.0		31.0	31.0	31.0	22.0	22.0	22.0
Total Split (s)	85.0	85.0	85.0	85.0	85.0		31.0	31.0	31.0	22.0	22.0	22.0
Total Split (%)	61.6%	61.6%	61.6%	61.6%	61.6%		22.5%	22.5%	22.5%	15.9%	15.9%	15.9%
Maximum Green (s)	79.0	79.0	79.0	79.0	79.0		25.0	25.0	25.0	16.0	16.0	16.0
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0		6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	C-Max	C-Max	C-Max	Max	Max		None	None	None	None	None	None
Walk Time (s)	7.0	7.0	7.0	7.0	7.0		7.0	7.0	7.0			
Flash Dont Walk (s)	17.0	17.0	17.0	17.0	17.0		19.0	19.0	19.0			
Pedestrian Calls (#/hr)	0	0	0	0	0		0	0	0			
Act Effect Green (s)	110.6	110.6	110.6	110.6	110.6		10.6	10.6	10.6	5.7		5.7
Actuated g/C Ratio	0.80	0.80	0.80	0.80	0.80		0.08	0.08	0.08	0.04		0.04
v/c Ratio	0.01	0.17	0.16	0.08	0.19		0.48	0.49	0.16	0.01		0.02
Control Delay	9.3	10.3	7.7	4.6	4.1		72.6	73.1	1.8	64.0		0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0		0.0
Total Delay	9.3	10.3	7.7	4.6	4.1		72.6	73.1	1.8	64.0		0.1
LOS	A	B	A	A	A		E	E	A	E		A
Approach Delay		9.5			4.2			59.6				6.5
Approach LOS		A			A			E				A
Queue Length 50th (ft)	1	87	42	7	39		56	58	0	1		0
Queue Length 95th (ft)	m8	233	184	28	99		102	104	0	6		0
Internal Link Dist (ft)		526			460			336				78
Turn Bay Length (ft)	80			120					195			
Base Capacity (vph)	667	2837	1311	719	2829		304	306	344	205		499
Starvation Cap Reductn	0	0	0	0	0		0	0	0	0		0
Spillback Cap Reductn	0	0	0	0	0		0	0	0	0		0
Storage Cap Reductn	0	0	0	0	0		0	0	0	0		0
Reduced v/c Ratio	0.01	0.17	0.16	0.08	0.19		0.20	0.21	0.08	0.00		0.02

Intersection Summary

Area Type: Other  
 Cycle Length: 138  
 Actuated Cycle Length: 138  
 Offset: 0 (0%), Referenced to phase 2:EBTL, Start of Yellow  
 Natural Cycle: 85  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.49  
 Intersection Signal Delay: 12.6  
 Intersection Capacity Utilization 42.2%  
 Analysis Period (min) 15  
 Intersection LOS: B  
 ICU Level of Service A  
 m Volume for 95th percentile queue is metered by upstream signal.

Lanes, Volumes, Timings  
4: Printers Pkwy & Pikes Peak Ave

Existing + Site  
AM

Splits and Phases: 4: Printers Pkwy & Pikes Peak Ave



Lanes, Volumes, Timings  
12: Union Blvd & Parkside Dr

Existing + Site  
AM



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	31	61	739	171	227	489
Future Volume (vph)	31	61	739	171	227	489
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150	0		0	135	
Storage Lanes	1	1		0	1	
Taper Length (ft)	150				90	
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	0.95
Frt		0.850	0.972			
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1593	1425	3096	0	1593	3185
Flt Permitted	0.950				0.248	
Satd. Flow (perm)	1593	1425	3096	0	416	3185
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		73	38			
Link Speed (mph)	30		35			35
Link Distance (ft)	621		648			477
Travel Time (s)	14.1		12.6			9.3
Peak Hour Factor	0.83	0.83	0.93	0.93	0.93	0.93
Adj. Flow (vph)	37	73	795	184	244	526
Shared Lane Traffic (%)						
Lane Group Flow (vph)	37	73	979	0	244	526
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		12			12
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane	Yes		Yes			Yes
Headway Factor	1.14	1.14	1.14	1.14	1.14	1.14
Turning Speed (mph)	15	9		9	15	
Number of Detectors	1	1	2		1	2
Detector Template	Left	Right	Thru		Left	Thru
Leading Detector (ft)	20	20	100		20	100
Trailing Detector (ft)	0	0	0		0	0
Detector 1 Position(ft)	0	0	0		0	0
Detector 1 Size(ft)	20	20	6		20	6
Detector 1 Type	CI+Ex	CI+Ex	CI+Ex		CI+Ex	CI+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0		0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0		0.0	0.0
Detector 1 Delay (s)	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			CI+Ex			CI+Ex
Detector 2 Channel						
Detector 2 Extend (s)			0.0			0.0
Turn Type	Prot	Perm	NA		pm+pt	NA
Protected Phases	8		2		1	6
Permitted Phases		8			6	

Lanes, Volumes, Timings  
12: Union Blvd & Parkside Dr

Existing + Site  
AM



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Detector Phase	8	8	2		1	6
Switch Phase						
Minimum Initial (s)	8.0	8.0	20.0		4.0	20.0
Minimum Split (s)	28.0	28.0	27.0		9.5	25.0
Total Split (s)	29.0	29.0	66.0		19.0	85.0
Total Split (%)	25.4%	25.4%	57.9%		16.7%	74.6%
Maximum Green (s)	23.0	23.0	61.0		14.0	80.0
Yellow Time (s)	4.0	4.0	3.0		3.0	3.0
All-Red Time (s)	2.0	2.0	2.0		2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	6.0	6.0	5.0		5.0	5.0
Lead/Lag			Lag		Lead	
Lead-Lag Optimize?			Yes		Yes	
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Recall Mode	None	None	C-Max		None	C-Max
Walk Time (s)	7.0	7.0	7.0			
Flash Dont Walk (s)	15.0	15.0	15.0			
Pedestrian Calls (#/hr)	0	0	0			
Act Effect Green (s)	8.9	8.9	82.6		96.9	97.9
Actuated g/C Ratio	0.08	0.08	0.72		0.85	0.86
v/c Ratio	0.30	0.41	0.43		0.54	0.19
Control Delay	55.7	18.5	7.8		6.7	2.1
Queue Delay	0.0	0.0	0.0		0.0	0.0
Total Delay	55.7	18.5	7.8		6.7	2.1
LOS	E	B	A		A	A
Approach Delay	31.0		7.8			3.5
Approach LOS	C		A			A
Queue Length 50th (ft)	26	0	134		26	30
Queue Length 95th (ft)	54	37	221		50	49
Internal Link Dist (ft)	541		568			397
Turn Bay Length (ft)	150				135	
Base Capacity (vph)	321	345	2253		498	2735
Starvation Cap Reductn	0	0	0		0	0
Spillback Cap Reductn	0	0	0		0	0
Storage Cap Reductn	0	0	0		0	0
Reduced v/c Ratio	0.12	0.21	0.43		0.49	0.19

Intersection Summary

Area Type:	CBD
Cycle Length:	114
Actuated Cycle Length:	114
Offset:	0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Green
Natural Cycle:	75
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.54
Intersection Signal Delay:	7.4
Intersection LOS:	A
Intersection Capacity Utilization:	62.7%
ICU Level of Service:	B
Analysis Period (min):	15

Lanes, Volumes, Timings  
12: Union Blvd & Parkside Dr

Existing + Site  
AM

Splits and Phases: 12: Union Blvd & Parkside Dr



Lanes, Volumes, Timings  
15: Union Blvd & Platte Ave

Existing + Site  
AM



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	98	490	52	176	1019	62	66	725	111	86	789	76
Future Volume (vph)	98	490	52	176	1019	62	66	725	111	86	789	76
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	170		35	150		0	215		115	305		0
Storage Lanes	1		1	1		1	1		1	1		0
Taper Length (ft)	120			65			40			75		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.95
Frt			0.850			0.850			0.850		0.987	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	3539	1583	1770	3493	0
Flt Permitted	0.098			0.369			0.123			0.179		
Satd. Flow (perm)	183	3539	1583	687	3539	1583	229	3539	1583	333	3493	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			124			124			124			10
Link Speed (mph)		35			35			35			35	
Link Distance (ft)		452			419			1555			508	
Travel Time (s)		8.8			8.2			30.3			9.9	
Peak Hour Factor	0.93	0.93	0.93	0.95	0.95	0.95	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	105	527	56	185	1073	65	71	780	119	92	848	82
Shared Lane Traffic (%)												
Lane Group Flow (vph)	105	527	56	185	1073	65	71	780	119	92	930	0
Enter Blocked Intersection	No											
Lane Alignment	Left	Left	Right									
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	60		60	60		60	60		60	60		60
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0	0	
Detector 1 Size(ft)	20	6	20	20	6	20	20	6	20	20	6	
Detector 1 Type	CI+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	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	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	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		CI+Ex			CI+Ex			CI+Ex			CI+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2		2	6		6	4		4	8		

Lanes, Volumes, Timings  
15: Union Blvd & Platte Ave

Existing + Site  
AM



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	5	2	2	1	6	6	7	4	4	3	8	
Switch Phase												
Minimum Initial (s)	4.0	6.0	6.0	4.0	6.0	6.0	4.0	4.0	4.0	4.0	4.0	
Minimum Split (s)	9.0	35.0	35.0	9.0	35.0	35.0	9.0	37.0	37.0	9.0	37.0	
Total Split (s)	12.0	45.0	45.0	12.0	45.0	45.0	12.0	45.0	45.0	12.0	45.0	
Total Split (%)	10.5%	39.5%	39.5%	10.5%	39.5%	39.5%	10.5%	39.5%	39.5%	10.5%	39.5%	
Maximum Green (s)	7.0	39.0	39.0	7.0	39.0	39.0	7.0	39.0	39.0	7.0	39.0	
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.0	6.0	6.0	5.0	6.0	6.0	5.0	6.0	6.0	5.0	6.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes											
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None	None	
Walk Time (s)		7.0	7.0		7.0	7.0		7.0	7.0		7.0	
Flash Dont Walk (s)		22.0	22.0		22.0	22.0		24.0	24.0		24.0	
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	
Act Effect Green (s)	50.6	42.2	42.2	52.3	43.0	43.0	42.4	34.6	34.6	43.6	37.0	
Actuated g/C Ratio	0.44	0.37	0.37	0.46	0.38	0.38	0.37	0.30	0.30	0.38	0.32	
v/c Ratio	0.57	0.40	0.08	0.47	0.80	0.10	0.40	0.73	0.21	0.43	0.82	
Control Delay	31.1	28.7	0.2	23.2	38.5	0.3	25.6	39.3	5.2	25.5	41.7	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	31.1	28.7	0.2	23.2	38.5	0.3	25.6	39.3	5.2	25.5	41.7	
LOS	C	C	A	C	D	A	C	D	A	C	D	
Approach Delay		26.7			34.5			34.1			40.2	
Approach LOS		C			C			C			D	
Queue Length 50th (ft)	42	156	0	78	388	0	30	258	0	39	324	
Queue Length 95th (ft)	#92	206	0	129	#508	1	56	320	37	70	396	
Internal Link Dist (ft)		372			339			1475			428	
Turn Bay Length (ft)	170		35	150			215		115	305		
Base Capacity (vph)	186	1309	664	393	1335	674	180	1210	623	215	1201	
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.56	0.40	0.08	0.47	0.80	0.10	0.39	0.64	0.19	0.43	0.77	

Intersection Summary

Area Type: Other  
 Cycle Length: 114  
 Actuated Cycle Length: 114  
 Offset: 12 (11%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green  
 Natural Cycle: 90  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.82  
 Intersection Signal Delay: 34.5  
 Intersection LOS: C  
 Intersection Capacity Utilization 79.8%  
 ICU Level of Service D  
 Analysis Period (min) 15  
 # 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 15: Union Blvd & Platte Ave



Intersection												
Int Delay, s/veh	4.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↙	↕		↙	↕			↕	↗		↕	
Traffic Vol, veh/h	5	628	271	79	595	5	117	2	67	5	6	10
Future Vol, veh/h	5	628	271	79	595	5	117	2	67	5	6	10
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None									
Storage Length	50	-	-	120	-	-	-	-	150	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	93	93	93	87	87	87	78	78	78
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	5	675	291	85	640	5	134	2	77	6	8	13

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	645	0	0	966	0	0	1325	1646	483	1162	1789	323
Stage 1	-	-	-	-	-	-	831	831	-	813	813	-
Stage 2	-	-	-	-	-	-	494	815	-	349	976	-
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	1263	-	-	924	-	-	*258	152	*832	*377	115	*854
Stage 1	-	-	-	-	-	-	*620	578	-	*595	563	-
Stage 2	-	-	-	-	-	-	*806	562	-	*785	477	-
Platoon blocked, %	1	-	-	1	-	-	1	1	1	1	1	1
Mov Cap-1 Maneuver	1263	-	-	924	-	-	*222	138	*832	*313	104	*854
Mov Cap-2 Maneuver	-	-	-	-	-	-	*222	138	-	*313	104	-
Stage 1	-	-	-	-	-	-	*618	576	-	*592	511	-
Stage 2	-	-	-	-	-	-	*710	510	-	*706	475	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	1.1	32.3	21.4
HCM LOS			D	C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	220	832	1263	-	-	924	-	-	246
HCM Lane V/C Ratio	0.622	0.093	0.004	-	-	0.092	-	-	0.109
HCM Control Delay (s)	45	9.8	7.9	-	-	9.3	-	-	21.4
HCM Lane LOS	E	A	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	3.6	0.3	0	-	-	0.3	-	-	0.4

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

Intersection						
Int Delay, s/veh	0.6					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	Y		Y	↑↑	↑↑	Y
Traffic Vol, veh/h	29	25	25	811	713	83
Future Vol, veh/h	29	25	25	811	713	83
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	60	-	-	175
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	83	83	93	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	35	30	27	872	767	89

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	1257	384	856	0	-	0
Stage 1	767	-	-	-	-	-
Stage 2	490	-	-	-	-	-
Critical Hdwy	6.84	6.94	4.14	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.22	-	-	-
Pot Cap-1 Maneuver	*163	*788	1129	-	-	-
Stage 1	*743	-	-	-	-	-
Stage 2	*710	-	-	-	-	-
Platoon blocked, %		1	1	-	-	-
Mov Cap-1 Maneuver	*159	*788	1129	-	-	-
Mov Cap-2 Maneuver	*400	-	-	-	-	-
Stage 1	*725	-	-	-	-	-
Stage 2	*710	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	12.9	0.2	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1129	-	518	-	-
HCM Lane V/C Ratio	0.024	-	0.126	-	-
HCM Control Delay (s)	8.3	-	12.9	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	0.1	-	0.4	-	-

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

Intersection						
Int Delay, s/veh	1.4					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	46	107	784	45	54	726
Future Vol, veh/h	46	107	784	45	54	726
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	150	0	-	-	175	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	87	87	93	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	53	123	843	48	58	781

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	1374	446	0	0	891
Stage 1	867	-	-	-	-
Stage 2	507	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	4.14
Critical Hdwy Stg 1	5.84	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	2.22
Pot Cap-1 Maneuver	*137	*779	-	-	1101
Stage 1	*707	-	-	-	-
Stage 2	*743	-	-	-	-
Platoon blocked, %		1	-	-	1
Mov Cap-1 Maneuver	*130	*779	-	-	1101
Mov Cap-2 Maneuver	*381	-	-	-	-
Stage 1	*707	-	-	-	-
Stage 2	*704	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	12.2	0	0.6
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	381	779	1101
HCM Lane V/C Ratio	-	-	0.139	0.158	0.053
HCM Control Delay (s)	-	-	16	10.5	8.5
HCM Lane LOS	-	-	C	B	A
HCM 95th %tile Q(veh)	-	-	0.5	0.6	0.2

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

Lanes, Volumes, Timings  
1: Union Blvd & Pikes Peak Ave

Existing + Site  
PM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	206	678	145	118	534	188	217	618	120	152	702	174
Future Volume (vph)	206	678	145	118	534	188	217	618	120	152	702	174
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	300		125	150		0	500		35	125		0
Storage Lanes	1		1	1		0	1		1	1		0
Taper Length (ft)	50			50			90			90		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	0.95	1.00	0.95	1.00	1.00	0.95	0.95
Frt			0.850		0.961				0.850		0.970	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3539	1583	1770	3401	0	1770	3539	1583	1770	3433	0
Flt Permitted	0.163			0.243			0.095			0.284		
Satd. Flow (perm)	304	3539	1583	453	3401	0	177	3539	1583	529	3433	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			103		37				103		23	
Link Speed (mph)		35			35			35			35	
Link Distance (ft)		871			409			841			1555	
Travel Time (s)		17.0			8.0			16.4			30.3	
Peak Hour Factor	0.95	0.95	0.95	0.93	0.93	0.93	0.95	0.95	0.95	0.93	0.93	0.93
Adj. Flow (vph)	217	714	153	127	574	202	228	651	126	163	755	187
Shared Lane Traffic (%)												
Lane Group Flow (vph)	217	714	153	127	776	0	228	651	126	163	942	0
Enter Blocked Intersection	No	No	No	No	No	No						
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane		Yes			Yes							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	2	1	1	2	
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100	20	20	100		20	100	20	20	100	
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	6	20	20	6	
Detector 1 Type	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex		CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+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			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		CI+Ex			CI+Ex			CI+Ex			CI+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	custom	pm+pt	NA	
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2		2	6			4		2	8		

Lanes, Volumes, Timings  
1: Union Blvd & Pikes Peak Ave

Existing + Site  
PM



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	5	2	2	1	6		7	4	2	3	8	
Switch Phase												
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Minimum Split (s)	9.0	33.0	33.0	9.0	33.0		9.0	33.0	33.0	9.0	33.0	
Total Split (s)	20.0	48.0	48.0	20.0	48.0		20.0	50.0	48.0	20.0	50.0	
Total Split (%)	14.5%	34.8%	34.8%	14.5%	34.8%		14.5%	36.2%	34.8%	14.5%	36.2%	
Maximum Green (s)	15.0	42.0	42.0	15.0	42.0		15.0	44.0	42.0	15.0	44.0	
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0		3.0	4.0	4.0	3.0	4.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.0	6.0	6.0	5.0	6.0		5.0	6.0	6.0	5.0	6.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	C-Max	C-Max	None	C-Max		None	Max	C-Max	None	Max	
Walk Time (s)		7.0	7.0		7.0			7.0	7.0		7.0	
Flash Dont Walk (s)		20.0	20.0		20.0			20.0	20.0		20.0	
Pedestrian Calls (#/hr)		0	0		0			0	0		0	
Act Effect Green (s)	60.8	45.7	45.7	55.2	42.8		62.3	46.5	45.7	57.7	44.2	
Actuated g/C Ratio	0.44	0.33	0.33	0.40	0.31		0.45	0.34	0.33	0.42	0.32	
v/c Ratio	0.76	0.61	0.26	0.44	0.72		0.91	0.55	0.21	0.49	0.84	
Control Delay	42.7	41.9	13.7	23.0	31.2		72.6	39.7	10.2	26.9	50.9	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay	42.7	41.9	13.7	23.0	31.2		72.6	39.7	10.2	26.9	50.9	
LOS	D	D	B	C	C		E	D	B	C	D	
Approach Delay		38.1			30.0			43.5			47.4	
Approach LOS		D			C			D			D	
Queue Length 50th (ft)	119	282	31	51	196		146	250	14	84	406	
Queue Length 95th (ft)	#214	365	89	90	235		#310	321	63	131	495	
Internal Link Dist (ft)		791			329			761			1475	
Turn Bay Length (ft)	300		125	150			500		35	125		
Base Capacity (vph)	294	1171	593	336	1081		252	1191	593	365	1115	
Starvation Cap Reductn	0	0	0	0	0		0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0		0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0		0	0	0	0	0	
Reduced v/c Ratio	0.74	0.61	0.26	0.38	0.72		0.90	0.55	0.21	0.45	0.84	

Intersection Summary

Area Type: Other

Cycle Length: 138

Actuated Cycle Length: 138

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

Natural Cycle: 85

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.91

Intersection Signal Delay: 40.1

Intersection LOS: D

Intersection Capacity Utilization 87.5%

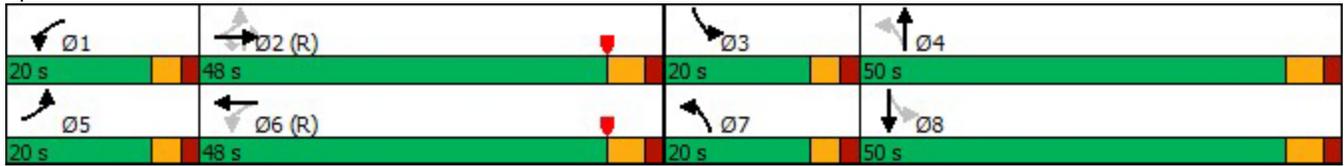
ICU Level of Service E

Analysis Period (min) 15

# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 1: Union Blvd & Pikes Peak Ave



Lanes, Volumes, Timings  
3: Iowa Ave & Pikes Peak Ave

Existing + Site  
PM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	33	733	73	53	501	16	132	81	96	20	90	39
Future Volume (vph)	33	733	73	53	501	16	132	81	96	20	90	39
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	120		0	120		0	0		150	0		0
Storage Lanes	1		0	1		0	1		1	1		0
Taper Length (ft)	180			150			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Fr't		0.986			0.995			0.919			0.955	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3490	0	1770	3522	0	1770	1712	0	1770	1779	0
Flt Permitted	0.384			0.234			0.494			0.637		
Satd. Flow (perm)	715	3490	0	436	3522	0	920	1712	0	1187	1779	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		11			3			36			13	
Link Speed (mph)		35			35			25			25	
Link Distance (ft)		802			606			553			364	
Travel Time (s)		15.6			11.8			15.1			9.9	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.92	0.92	0.92	0.83	0.83	0.83
Adj. Flow (vph)	35	788	78	57	539	17	143	88	104	24	108	47
Shared Lane Traffic (%)												
Lane Group Flow (vph)	35	866	0	57	556	0	143	192	0	24	155	0
Enter Blocked Intersection	No	No	No	No	No	No						
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane		Yes			Yes							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	CI+Ex	CI+Ex		CI+Ex	CI+Ex		CI+Ex	CI+Ex		CI+Ex	CI+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	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	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		CI+Ex			CI+Ex			CI+Ex			CI+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2			6			4			8		

Lanes, Volumes, Timings  
3: Iowa Ave & Pikes Peak Ave

Existing + Site  
PM

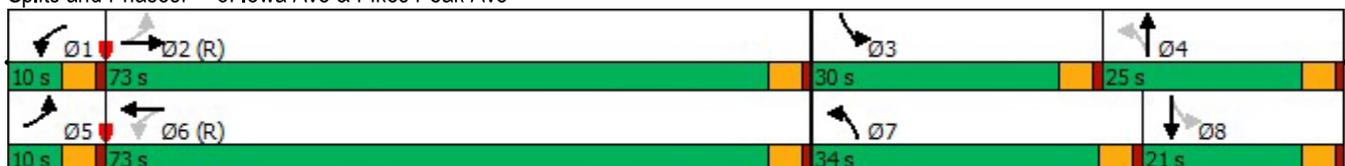


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	5	2		1	6		7	4		3	8	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	9.5	22.5		9.5	22.5		22.5	22.5		9.5	21.0	
Total Split (s)	10.0	73.0		10.0	73.0		34.0	25.0		30.0	21.0	
Total Split (%)	7.2%	52.9%		7.2%	52.9%		24.6%	18.1%		21.7%	15.2%	
Maximum Green (s)	5.5	68.5		5.5	68.5		29.5	20.5		25.5	16.5	
Yellow Time (s)	3.5	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	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.5	4.5		4.5	4.5		4.5	4.5		4.5	4.5	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		None	C-Max		None	Max		None	Max	
Act Effect Green (s)	74.9	70.5		74.9	70.5		50.5	43.3		39.5	32.8	
Actuated g/C Ratio	0.54	0.51		0.54	0.51		0.37	0.31		0.29	0.24	
v/c Ratio	0.08	0.48		0.20	0.31		0.34	0.34		0.07	0.36	
Control Delay	8.8	12.4		9.2	13.5		32.8	32.7		29.3	43.9	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	8.8	12.4		9.2	13.5		32.8	32.7		29.3	43.9	
LOS	A	B		A	B		C	C		C	D	
Approach Delay		12.2			13.1			32.8			41.9	
Approach LOS		B			B			C			D	
Queue Length 50th (ft)	8	118		17	91		88	112		14	106	
Queue Length 95th (ft)	m14	130		32	160		142	187		32	166	
Internal Link Dist (ft)		722			526			473			284	
Turn Bay Length (ft)	120			120								
Base Capacity (vph)	430	1787		289	1800		518	562		542	432	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.08	0.48		0.20	0.31		0.28	0.34		0.04	0.36	

Intersection Summary

Area Type: Other  
 Cycle Length: 138  
 Actuated Cycle Length: 138  
 Offset: 91 (66%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green  
 Natural Cycle: 80  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.48  
 Intersection Signal Delay: 18.5  
 Intersection LOS: B  
 Intersection Capacity Utilization 56.2%  
 ICU Level of Service B  
 Analysis Period (min) 15  
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 3: Iowa Ave & Pikes Peak Ave



Lanes, Volumes, Timings  
4: Printers Pkwy & Pikes Peak Ave

Existing + Site  
PM



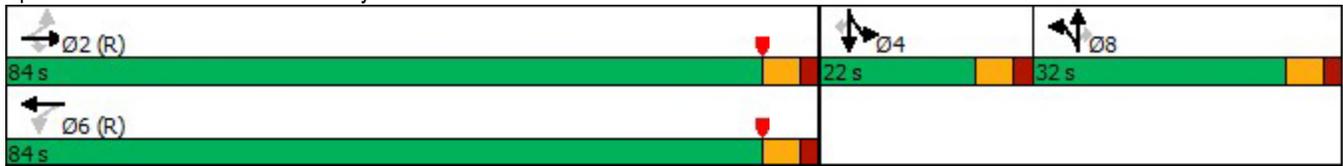
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	16	676	174	24	408	28	132	8	50	8	3	13
Future Volume (vph)	16	676	174	24	408	28	132	8	50	8	3	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	80		0	120		0	0		195	0		0
Storage Lanes	1		1	1		0	1		1	1		1
Taper Length (ft)	150			90			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00
Frt			0.850		0.990				0.850			0.850
Flt Protected	0.950			0.950			0.950	0.958		0.950		
Satd. Flow (prot)	1770	3539	1583	1770	3504	0	1681	1695	1583	1770	1863	1583
Flt Permitted	0.459			0.326			0.950	0.958		0.950		
Satd. Flow (perm)	855	3539	1583	607	3504	0	1681	1695	1583	1770	1863	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			187		8				71			71
Link Speed (mph)		35			35			35				35
Link Distance (ft)		606			540			416				158
Travel Time (s)		11.8			10.5			8.1				3.1
Peak Hour Factor	0.93	0.93	0.93	0.92	0.92	0.92	0.87	0.87	0.87	0.78	0.78	0.78
Adj. Flow (vph)	17	727	187	26	443	30	152	9	57	10	4	17
Shared Lane Traffic (%)							47%					
Lane Group Flow (vph)	17	727	187	26	473	0	81	80	57	10	4	17
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	R NA	Left	Left	R NA	Left	Left	R NA	L NA	Left	R NA
Median Width(ft)		12			12			12				12
Link Offset(ft)		0			0			-10				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane		Yes			Yes							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		35	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100		20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0		0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0		0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20	20	6		20	6	20	20	6	20
Detector 1 Type	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex		CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+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	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	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	0.0
Detector 2 Position(ft)		94			94			94				94
Detector 2 Size(ft)		6			6			6				6
Detector 2 Type		CI+Ex			CI+Ex			CI+Ex				CI+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				0.0
Turn Type	Perm	NA	Perm	Perm	NA		Split	NA	Perm	Split	NA	Perm
Protected Phases		2			6		8	8		4	4	
Permitted Phases	2		2	6					8			4



Lanes, Volumes, Timings  
 4: Printers Pkwy & Pikes Peak Ave

Existing + Site  
 PM

Splits and Phases: 4: Printers Pkwy & Pikes Peak Ave



Lanes, Volumes, Timings  
12: Union Blvd & Parkside Dr

Existing + Site  
PM



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	93	245	660	40	46	951
Future Volume (vph)	93	245	660	40	46	951
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150	0		0	135	
Storage Lanes	1	1		0	1	
Taper Length (ft)	150				90	
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	0.95
Frt		0.850	0.991			
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1593	1425	3157	0	1593	3185
Flt Permitted	0.950				0.321	
Satd. Flow (perm)	1593	1425	3157	0	538	3185
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		266	8			
Link Speed (mph)	30		35			35
Link Distance (ft)	621		648			477
Travel Time (s)	14.1		12.6			9.3
Peak Hour Factor	0.92	0.92	0.93	0.93	0.93	0.93
Adj. Flow (vph)	101	266	710	43	49	1023
Shared Lane Traffic (%)						
Lane Group Flow (vph)	101	266	753	0	49	1023
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		12			12
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane	Yes		Yes			Yes
Headway Factor	1.14	1.14	1.14	1.14	1.14	1.14
Turning Speed (mph)	15	9		9	15	
Number of Detectors	1	1	2		1	2
Detector Template	Left	Right	Thru		Left	Thru
Leading Detector (ft)	20	20	100		20	100
Trailing Detector (ft)	0	0	0		0	0
Detector 1 Position(ft)	0	0	0		0	0
Detector 1 Size(ft)	20	20	6		20	6
Detector 1 Type	CI+Ex	CI+Ex	CI+Ex		CI+Ex	CI+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0		0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0		0.0	0.0
Detector 1 Delay (s)	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			CI+Ex			CI+Ex
Detector 2 Channel						
Detector 2 Extend (s)			0.0			0.0
Turn Type	Prot	Perm	NA		pm+pt	NA
Protected Phases	8		2		1	6
Permitted Phases		8			6	

Lanes, Volumes, Timings  
12: Union Blvd & Parkside Dr

Existing + Site  
PM



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Detector Phase	8	8	2		1	6
Switch Phase						
Minimum Initial (s)	8.0	8.0	20.0		4.0	20.0
Minimum Split (s)	28.0	28.0	27.0		9.5	25.0
Total Split (s)	29.0	29.0	66.0		19.0	85.0
Total Split (%)	25.4%	25.4%	57.9%		16.7%	74.6%
Maximum Green (s)	23.0	23.0	61.0		14.0	80.0
Yellow Time (s)	4.0	4.0	3.0		3.0	3.0
All-Red Time (s)	2.0	2.0	2.0		2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	6.0	6.0	5.0		5.0	5.0
Lead/Lag			Lag		Lead	
Lead-Lag Optimize?			Yes		Yes	
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Recall Mode	None	None	Max		None	Max
Walk Time (s)	7.0	7.0	7.0			
Flash Dont Walk (s)	15.0	15.0	15.0			
Pedestrian Calls (#/hr)	0	0	0			
Act Effect Green (s)	12.0	12.0	71.0		80.0	80.0
Actuated g/C Ratio	0.12	0.12	0.69		0.78	0.78
v/c Ratio	0.55	0.67	0.35		0.10	0.41
Control Delay	54.3	13.9	7.9		3.6	4.6
Queue Delay	0.0	0.0	0.0		0.0	0.0
Total Delay	54.3	13.9	7.9		3.6	4.6
LOS	D	B	A		A	A
Approach Delay	25.0		7.9			4.6
Approach LOS	C		A			A
Queue Length 50th (ft)	64	0	100		6	92
Queue Length 95th (ft)	118	76	158		17	152
Internal Link Dist (ft)	541		568			397
Turn Bay Length (ft)	150				135	
Base Capacity (vph)	355	525	2177		561	2474
Starvation Cap Reductn	0	0	0		0	0
Spillback Cap Reductn	0	0	0		0	0
Storage Cap Reductn	0	0	0		0	0
Reduced v/c Ratio	0.28	0.51	0.35		0.09	0.41

Intersection Summary

Area Type:	CBD
Cycle Length:	114
Actuated Cycle Length:	103
Natural Cycle:	65
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	0.67
Intersection Signal Delay:	9.1
Intersection LOS:	A
Intersection Capacity Utilization:	47.7%
ICU Level of Service:	A
Analysis Period (min):	15

Splits and Phases: 12: Union Blvd & Parkside Dr



Lanes, Volumes, Timings  
15: Union Blvd & Platte Ave

Existing + Site  
PM



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	233	978	41	135	676	64	74	849	145	109	810	65
Future Volume (vph)	233	978	41	135	676	64	74	849	145	109	810	65
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	170		35	150		0	215		115	305		0
Storage Lanes	1		1	1		1	1		1	1		0
Taper Length (ft)	120			65			40			75		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.95
Frt			0.850			0.850			0.850		0.989	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	3539	1583	1770	3500	0
Flt Permitted	0.229			0.107			0.154			0.154		
Satd. Flow (perm)	427	3539	1583	199	3539	1583	287	3539	1583	287	3500	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			124			124			124			8
Link Speed (mph)		35			35			35			35	
Link Distance (ft)		452			419			1555			508	
Travel Time (s)		8.8			8.2			30.3			9.9	
Peak Hour Factor	0.95	0.95	0.95	0.93	0.93	0.93	0.95	0.95	0.95	0.93	0.93	0.93
Adj. Flow (vph)	245	1029	43	145	727	69	78	894	153	117	871	70
Shared Lane Traffic (%)												
Lane Group Flow (vph)	245	1029	43	145	727	69	78	894	153	117	941	0
Enter Blocked Intersection	No											
Lane Alignment	Left	Left	Right									
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0	0	
Detector 1 Size(ft)	20	6	20	20	6	20	20	6	20	20	6	
Detector 1 Type	CI+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	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	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	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		CI+Ex			CI+Ex			CI+Ex			CI+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8	2		2	6		

Lanes, Volumes, Timings  
15: Union Blvd & Platte Ave

Existing + Site  
PM



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	
Switch Phase												
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	6.0	6.0	4.0	6.0	
Minimum Split (s)	9.0	37.0	37.0	9.0	37.0	37.0	9.0	35.0	35.0	9.0	35.0	
Total Split (s)	12.0	45.0	45.0	12.0	45.0	45.0	12.0	45.0	45.0	12.0	45.0	
Total Split (%)	10.5%	39.5%	39.5%	10.5%	39.5%	39.5%	10.5%	39.5%	39.5%	10.5%	39.5%	
Maximum Green (s)	7.0	39.0	39.0	7.0	39.0	39.0	7.0	39.0	39.0	7.0	39.0	
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.0	6.0	6.0	5.0	6.0	6.0	5.0	6.0	6.0	5.0	6.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes											
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	C-Max	C-Max	None	C-Max							
Act Effect Green (s)	45.5	37.5	37.5	45.5	37.5	37.5	48.1	40.3	40.3	49.7	42.8	
Actuated g/C Ratio	0.40	0.33	0.33	0.40	0.33	0.33	0.42	0.35	0.35	0.44	0.38	
v/c Ratio	0.97	0.88	0.07	0.82	0.62	0.11	0.37	0.72	0.24	0.53	0.71	
Control Delay	76.9	46.2	0.2	56.7	34.8	0.8	22.9	36.2	8.2	27.6	35.0	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	76.9	46.2	0.2	56.7	34.8	0.8	22.9	36.2	8.2	27.6	35.0	
LOS	E	D	A	E	C	A	C	D	A	C	C	
Approach Delay		50.4			35.7			31.5			34.2	
Approach LOS		D			D			C			C	
Queue Length 50th (ft)	111	366	0	62	231	0	32	301	14	49	321	
Queue Length 95th (ft)	#253	454	0	#161	294	3	61	378	60	85	403	
Internal Link Dist (ft)		372			339			1475			428	
Turn Bay Length (ft)	170		35	150			215		115	305		
Base Capacity (vph)	253	1210	623	176	1210	623	213	1249	639	219	1319	
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.97	0.85	0.07	0.82	0.60	0.11	0.37	0.72	0.24	0.53	0.71	

Intersection Summary

Area Type: Other  
 Cycle Length: 114  
 Actuated Cycle Length: 114  
 Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green  
 Natural Cycle: 90  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.97  
 Intersection Signal Delay: 38.6  
 Intersection LOS: D  
 Intersection Capacity Utilization 82.4%  
 ICU Level of Service E  
 Analysis Period (min) 15  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

Lanes, Volumes, Timings  
15: Union Blvd & Platte Ave

Existing + Site  
PM

Splits and Phases: 15: Union Blvd & Platte Ave



HCM 6th TWSC  
2: Bonfoy Ave & Pikes Peak Ave

Existing + Site  
PM

Intersection												
Int Delay, s/veh	2.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↙	↕		↙	↕			↕	↗		↕	
Traffic Vol, veh/h	15	724	224	64	648	15	182	4	82	15	5	10
Future Vol, veh/h	15	724	224	64	648	15	182	4	82	15	5	10
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None									
Storage Length	50	-	-	120	-	-	-	-	150	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	93	93	93	92	92	92	78	78	78
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	16	778	241	69	697	16	198	4	89	19	6	13

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	713	0	0	1019	0	0	1421	1782	510	1266	1894	357
Stage 1	-	-	-	-	-	-	931	931	-	843	843	-
Stage 2	-	-	-	-	-	-	490	851	-	423	1051	-
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	1222	-	-	934	-	-	*506	221	*788	*506	164	*832
Stage 1	-	-	-	-	-	-	*605	558	-	*608	569	-
Stage 2	-	-	-	-	-	-	*785	562	-	*742	473	-
Platoon blocked, %	1	-	-	1	-	-	1	1	1	1	1	1
Mov Cap-1 Maneuver	1222	-	-	934	-	-	*450	202	*788	*412	149	*832
Mov Cap-2 Maneuver	-	-	-	-	-	-	*450	202	-	*412	149	-
Stage 1	-	-	-	-	-	-	*597	551	-	*600	527	-
Stage 2	-	-	-	-	-	-	*707	521	-	*645	467	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.1			0.8			17.1			16		
HCM LOS							C			C		

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	438	788	1222	-	-	934	-	-	366
HCM Lane V/C Ratio	0.462	0.113	0.013	-	-	0.074	-	-	0.105
HCM Control Delay (s)	20.1	10.2	8	-	-	9.2	-	-	16
HCM Lane LOS	C	B	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	2.4	0.4	0	-	-	0.2	-	-	0.3

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

Intersection						
Int Delay, s/veh	0.8					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	25	50	50	865	909	43
Future Vol, veh/h	25	50	50	865	909	43
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	60	-	-	175
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	83	83	93	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	30	60	54	930	977	46

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	1550	489	1023	0	-	0
Stage 1	977	-	-	-	-	-
Stage 2	573	-	-	-	-	-
Critical Hdwy	6.84	6.94	4.14	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.22	-	-	-
Pot Cap-1 Maneuver	*223	*698	*1045	-	-	-
Stage 1	*659	-	-	-	-	-
Stage 2	*527	-	-	-	-	-
Platoon blocked, %	1	1	1	-	-	-
Mov Cap-1 Maneuver	*212	*698	*1045	-	-	-
Mov Cap-2 Maneuver	*357	-	-	-	-	-
Stage 1	*625	-	-	-	-	-
Stage 2	*527	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	13.2	0.5	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	* 1045	-	529	-	-
HCM Lane V/C Ratio	0.051	-	0.171	-	-
HCM Control Delay (s)	8.6	-	13.2	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	0.2	-	0.6	-	-

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

Intersection						
Int Delay, s/veh	2.5					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↙	↗	↕		↙	↕
Traffic Vol, veh/h	84	109	847	43	100	876
Future Vol, veh/h	84	109	847	43	100	876
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	150	0	-	-	175	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	87	87	93	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	97	125	911	46	108	942

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	1621	479	0	0	957
Stage 1	934	-	-	-	-
Stage 2	687	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	4.14
Critical Hdwy Stg 1	5.84	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	2.22
Pot Cap-1 Maneuver	*178	533	-	-	714
Stage 1	*343	-	-	-	-
Stage 2	*680	-	-	-	-
Platoon blocked, %	1	-	-	-	-
Mov Cap-1 Maneuver	*151	533	-	-	714
Mov Cap-2 Maneuver	*259	-	-	-	-
Stage 1	*343	-	-	-	-
Stage 2	*577	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	19.5	0	1.1
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	259	533	714
HCM Lane V/C Ratio	-	-	0.373	0.235	0.151
HCM Control Delay (s)	-	-	26.9	13.8	10.9
HCM Lane LOS	-	-	D	B	B
HCM 95th %tile Q(veh)	-	-	1.6	0.9	0.5

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

Lanes, Volumes, Timings  
1: Union Blvd & Pikes Peak Ave

2043 Background

AM



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	140	465	160	45	510	105	135	590	85	155	585	225
Future Volume (vph)	140	465	160	45	510	105	135	590	85	155	585	225
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100		125	75		0	180		35	125		0
Storage Lanes	1		1	1		0	1		1	1		0
Taper Length (ft)	52			60			110			90		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	0.95	1.00	0.95	1.00	1.00	0.95	0.95
Frt			0.850		0.974				0.850		0.958	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3539	1583	1770	3447	0	1770	3539	1583	1770	3391	0
Flt Permitted	0.272			0.435			0.123			0.265		
Satd. Flow (perm)	507	3539	1583	810	3447	0	229	3539	1583	494	3391	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			172		23				124		54	
Link Speed (mph)		35			35			35			35	
Link Distance (ft)		871			409			998			1555	
Travel Time (s)		17.0			8.0			19.4			30.3	
Peak Hour Factor	0.93	0.93	0.93	0.92	0.92	0.92	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	151	500	172	49	554	114	145	634	91	167	629	242
Shared Lane Traffic (%)												
Lane Group Flow (vph)	151	500	172	49	668	0	145	634	91	167	871	0
Enter Blocked Intersection	No											
Lane Alignment	Left	Left	Right									
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane		Yes			Yes			Yes			Yes	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	2	1	1	2	
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100	20	20	100		20	100	20	20	100	
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	6	20	20	6	
Detector 1 Type	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex		CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+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			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		CI+Ex			CI+Ex			CI+Ex			CI+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2		2	6			4		4	8		

Lanes, Volumes, Timings  
1: Union Blvd & Pikes Peak Ave

2043 Background

AM



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	5	2	2	1	6		7	4	4	3	8	
Switch Phase												
Minimum Initial (s)	4.0	6.0	6.0	4.0	6.0		4.0	4.0	4.0	4.0	4.0	
Minimum Split (s)	9.0	35.0	35.0	9.0	35.0		9.0	37.0	37.0	9.0	37.0	
Total Split (s)	12.0	45.0	45.0	12.0	45.0		12.0	45.0	45.0	12.0	45.0	
Total Split (%)	10.5%	39.5%	39.5%	10.5%	39.5%		10.5%	39.5%	39.5%	10.5%	39.5%	
Maximum Green (s)	7.0	39.0	39.0	7.0	39.0		7.0	39.0	39.0	7.0	39.0	
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0		3.0	4.0	4.0	3.0	4.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.0	6.0	6.0	5.0	6.0		5.0	6.0	6.0	5.0	6.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	C-Max	C-Max	None	C-Max		None	None	None	None	None	
Walk Time (s)		7.0	7.0		7.0			7.0	7.0		7.0	
Flash Dont Walk (s)		22.0	22.0		22.0			24.0	24.0		24.0	
Pedestrian Calls (#/hr)		0	0		0			0	0		0	
Act Effect Green (s)	54.1	46.1	46.1	50.1	42.3		42.2	34.2	34.2	42.2	34.2	
Actuated g/C Ratio	0.47	0.40	0.40	0.44	0.37		0.37	0.30	0.30	0.37	0.30	
v/c Ratio	0.45	0.35	0.23	0.12	0.52		0.81	0.60	0.16	0.64	0.83	
Control Delay	22.3	26.2	4.8	17.4	29.4		62.9	29.5	1.3	33.9	41.7	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay	22.3	26.2	4.8	17.4	29.4		62.9	29.5	1.3	33.9	41.7	
LOS	C	C	A	B	C		E	C	A	C	D	
Approach Delay		21.0			28.6			32.1			40.5	
Approach LOS		C			C			C			D	
90th %ile Green (s)	7.0	39.0	39.0	7.0	39.0		7.0	39.0	39.0	7.0	39.0	
90th %ile Term Code	Max	Coord	Coord	Max	Coord		Max	Hold	Hold	Max	Max	
70th %ile Green (s)	8.1	39.1	39.1	8.0	39.0		7.0	37.9	37.9	7.0	37.9	
70th %ile Term Code	Max	Coord	Coord	Gap	Coord		Max	Hold	Hold	Max	Gap	
50th %ile Green (s)	10.7	42.6	42.6	7.1	39.0		7.0	35.3	35.3	7.0	35.3	
50th %ile Term Code	Max	Coord	Coord	Gap	Coord		Max	Hold	Hold	Max	Gap	
30th %ile Green (s)	9.3	46.8	46.8	6.3	43.8		7.0	31.9	31.9	7.0	31.9	
30th %ile Term Code	Gap	Coord	Coord	Gap	Coord		Max	Hold	Hold	Max	Gap	
10th %ile Green (s)	7.3	63.0	63.0	0.0	50.7		7.0	27.0	27.0	7.0	27.0	
10th %ile Term Code	Gap	Coord	Coord	Skip	Coord		Max	Hold	Hold	Max	Gap	
Queue Length 50th (ft)	60	138	0	18	201		48	205	2	76	290	
Queue Length 95th (ft)	108	195	47	43	261		#150	140	6	117	352	
Internal Link Dist (ft)		791			329			918			1475	
Turn Bay Length (ft)	100		125	75			180		35	125		
Base Capacity (vph)	334	1430	742	419	1293		179	1210	623	261	1195	
Starvation Cap Reductn	0	0	0	0	0		0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0		0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0		0	0	0	0	0	
Reduced v/c Ratio	0.45	0.35	0.23	0.12	0.52		0.81	0.52	0.15	0.64	0.73	

Intersection Summary

Area Type: Other



Lanes, Volumes, Timings  
4: Printers Pkwy & Pikes Peak Ave

2043 Background  
AM



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	10	415	220	60	560	15	130	10	30	5	0	10
Future Volume (vph)	10	415	220	60	560	15	130	10	30	5	0	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	80		0	120		0	0		195	0		0
Storage Lanes	1		1	1		0	1		1	1		1
Taper Length (ft)	60			90			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00
Frt			0.850		0.996				0.850			0.850
Flt Protected	0.950			0.950			0.950	0.959		0.950		
Satd. Flow (prot)	1770	3539	1583	1770	3525	0	1681	1697	1583	1770	1863	1583
Flt Permitted	0.381			0.476			0.950	0.959		0.950		
Satd. Flow (perm)	710	3539	1583	887	3525	0	1681	1697	1583	1770	1863	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			237		3				71			301
Link Speed (mph)		35			35			35				35
Link Distance (ft)		606			424			673				158
Travel Time (s)		11.8			8.3			13.1				3.1
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.87	0.87	0.87	0.78	0.78	0.78
Adj. Flow (vph)	11	446	237	65	602	16	149	11	34	6	0	13
Shared Lane Traffic (%)							46%					
Lane Group Flow (vph)	11	446	237	65	618	0	80	80	34	6	0	13
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	R NA	Left	Left	R NA	Left	Left	R NA	L NA	Left	R NA
Median Width(ft)		12			12			24				24
Link Offset(ft)		0			0			-10				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane		Yes			Yes							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		35	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100		20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0		0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0		0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20	20	6		20	6	20	20	6	20
Detector 1 Type	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex		CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+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	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	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	0.0
Detector 2 Position(ft)		94			94			94				94
Detector 2 Size(ft)		6			6			6				6
Detector 2 Type		CI+Ex			CI+Ex			CI+Ex				CI+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				0.0
Turn Type	Perm	NA	Perm	Perm	NA		Split	NA	Perm	Split		Perm
Protected Phases		2			6		8	8		4	4	
Permitted Phases	2		2	6					8			4

Lanes, Volumes, Timings  
4: Printers Pkwy & Pikes Peak Ave

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	2	2	2	6	6		8	8	8	4	4	4
Switch Phase												
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	30.0	30.0	30.0	30.0	30.0		32.0	32.0	32.0	28.5	28.5	28.5
Total Split (s)	85.0	85.0	85.0	85.0	85.0		31.0	31.0	31.0	22.0	22.0	22.0
Total Split (%)	61.6%	61.6%	61.6%	61.6%	61.6%		22.5%	22.5%	22.5%	15.9%	15.9%	15.9%
Maximum Green (s)	79.0	79.0	79.0	79.0	79.0		25.0	25.0	25.0	16.0	16.0	16.0
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0		6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	C-Max	C-Max	C-Max	Max	Max		Max	Max	Max	Max	Max	Max
Walk Time (s)	7.0	7.0	7.0	7.0	7.0		7.0	7.0	7.0			
Flash Dont Walk (s)	17.0	17.0	17.0	17.0	17.0		19.0	19.0	19.0			
Pedestrian Calls (#/hr)	0	0	0	0	0		0	0	0			
Act Effect Green (s)	79.0	79.0	79.0	79.0	79.0		25.0	25.0	25.0	16.0		16.0
Actuated g/C Ratio	0.57	0.57	0.57	0.57	0.57		0.18	0.18	0.18	0.12		0.12
v/c Ratio	0.03	0.22	0.24	0.13	0.31		0.26	0.26	0.10	0.03		0.03
Control Delay	13.2	14.8	2.2	14.5	15.7		51.3	51.2	0.8	54.8		0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0		0.0
Total Delay	13.2	14.8	2.2	14.5	15.7		51.3	51.2	0.8	54.8		0.1
LOS	B	B	A	B	B		D	D	A	D		A
Approach Delay		10.4			15.6			42.4				17.4
Approach LOS		B			B			D				B
90th %ile Green (s)	79.0	79.0	79.0	79.0	79.0		25.0	25.0	25.0	16.0	16.0	16.0
90th %ile Term Code	Coord	Coord	Coord	Coord	Coord		Ped	Ped	Ped	MaxR	MaxR	MaxR
70th %ile Green (s)	79.0	79.0	79.0	79.0	79.0		25.0	25.0	25.0	16.0	16.0	16.0
70th %ile Term Code	Coord	Coord	Coord	Coord	Coord		Ped	Ped	Ped	MaxR	MaxR	MaxR
50th %ile Green (s)	79.0	79.0	79.0	79.0	79.0		25.0	25.0	25.0	16.0	16.0	16.0
50th %ile Term Code	Coord	Coord	Coord	Coord	Coord		Ped	Ped	Ped	MaxR	MaxR	MaxR
30th %ile Green (s)	79.0	79.0	79.0	79.0	79.0		25.0	25.0	25.0	16.0	16.0	16.0
30th %ile Term Code	Coord	Coord	Coord	Coord	Coord		Ped	Ped	Ped	MaxR	MaxR	MaxR
10th %ile Green (s)	79.0	79.0	79.0	79.0	79.0		25.0	25.0	25.0	16.0	16.0	16.0
10th %ile Term Code	Coord	Coord	Coord	Coord	Coord		Ped	Ped	Ped	MaxR	MaxR	MaxR
Queue Length 50th (ft)	4	98	0	26	144		65	65	0	5		0
Queue Length 95th (ft)	14	129	36	51	182		114	114	1	17		0
Internal Link Dist (ft)		526			344			593				78
Turn Bay Length (ft)	80			120					195			
Base Capacity (vph)	406	2025	1007	507	2019		304	307	344	205		449
Starvation Cap Reductn	0	0	0	0	0		0	0	0	0		0
Spillback Cap Reductn	0	0	0	0	0		0	0	0	0		0
Storage Cap Reductn	0	0	0	0	0		0	0	0	0		0
Reduced v/c Ratio	0.03	0.22	0.24	0.13	0.31		0.26	0.26	0.10	0.03		0.03

Intersection Summary

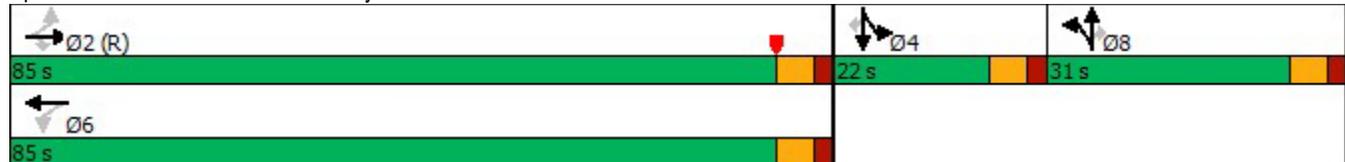
Area Type: Other

Lanes, Volumes, Timings  
 4: Printers Pkwy & Pikes Peak Ave

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Cycle Length: 138	
Actuated Cycle Length: 138	
Offset: 0 (0%), Referenced to phase 2:EBTL, Start of Yellow	
Natural Cycle: 95	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.31	
Intersection Signal Delay: 16.6	Intersection LOS: B
Intersection Capacity Utilization 44.8%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 4: Printers Pkwy & Pikes Peak Ave



Lanes, Volumes, Timings  
12: Union Blvd & Parkside Dr

2043 Background  
AM

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations			 			 
Traffic Volume (vph)	45	70	710	180	250	475
Future Volume (vph)	45	70	710	180	250	475
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	60	0		0	135	
Storage Lanes	1	1		0	1	
Taper Length (ft)	55				90	
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	0.95
Frt		0.850	0.970			
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1593	1425	3090	0	1593	3185
Flt Permitted	0.950				0.252	
Satd. Flow (perm)	1593	1425	3090	0	422	3185
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		80	43			
Link Speed (mph)	30		35			35
Link Distance (ft)	566		648			477
Travel Time (s)	12.9		12.6			9.3
Peak Hour Factor	0.87	0.87	0.93	0.93	0.93	0.93
Adj. Flow (vph)	52	80	763	194	269	511
Shared Lane Traffic (%)						
Lane Group Flow (vph)	52	80	957	0	269	511
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		12			12
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane	Yes		Yes			Yes
Headway Factor	1.14	1.14	1.14	1.14	1.14	1.14
Turning Speed (mph)	15	9		9	15	
Number of Detectors	1	1	2		1	2
Detector Template	Left	Right	Thru		Left	Thru
Leading Detector (ft)	20	20	100		20	100
Trailing Detector (ft)	0	0	0		0	0
Detector 1 Position(ft)	0	0	0		0	0
Detector 1 Size(ft)	20	20	6		20	6
Detector 1 Type	CI+Ex	CI+Ex	CI+Ex		CI+Ex	CI+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0		0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0		0.0	0.0
Detector 1 Delay (s)	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			CI+Ex			CI+Ex
Detector 2 Channel						
Detector 2 Extend (s)			0.0			0.0
Turn Type	Prot	Perm	NA		pm+pt	NA
Protected Phases	8		2		1	6
Permitted Phases		8			6	

Lanes, Volumes, Timings  
12: Union Blvd & Parkside Dr



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Detector Phase	8	8	2		1	6
Switch Phase						
Minimum Initial (s)	8.0	8.0	20.0		4.0	20.0
Minimum Split (s)	28.0	28.0	27.0		9.5	25.0
Total Split (s)	29.0	29.0	66.0		19.0	85.0
Total Split (%)	25.4%	25.4%	57.9%		16.7%	74.6%
Maximum Green (s)	23.0	23.0	61.0		14.0	80.0
Yellow Time (s)	4.0	4.0	3.0		3.0	3.0
All-Red Time (s)	2.0	2.0	2.0		2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	6.0	6.0	5.0		5.0	5.0
Lead/Lag			Lag		Lead	
Lead-Lag Optimize?			Yes		Yes	
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Recall Mode	None	None	C-Max		None	C-Max
Walk Time (s)	7.0	7.0	7.0			
Flash Dont Walk (s)	15.0	15.0	15.0			
Pedestrian Calls (#/hr)	0	0	0			
Act Effect Green (s)	9.7	9.7	81.0		96.1	97.1
Actuated g/C Ratio	0.09	0.09	0.71		0.84	0.85
v/c Ratio	0.39	0.41	0.43		0.59	0.19
Control Delay	57.2	17.0	8.6		18.0	5.9
Queue Delay	0.0	0.0	0.0		0.0	0.0
Total Delay	57.2	17.0	8.6		18.0	5.9
LOS	E	B	A		B	A
Approach Delay	32.8		8.6			10.1
Approach LOS	C		A			B
90th %ile Green (s)	12.7	12.7	69.6		15.7	90.3
90th %ile Term Code	Gap	Gap	Coord		Gap	Coord
70th %ile Green (s)	10.6	10.6	76.6		10.8	92.4
70th %ile Term Code	Gap	Gap	Coord		Gap	Coord
50th %ile Green (s)	9.1	9.1	79.4		9.5	93.9
50th %ile Term Code	Gap	Gap	Coord		Gap	Coord
30th %ile Green (s)	8.0	8.0	81.5		8.5	95.0
30th %ile Term Code	Min	Min	Coord		Gap	Coord
10th %ile Green (s)	0.0	0.0	98.0		6.0	109.0
10th %ile Term Code	Skip	Skip	Coord		Gap	Coord
Queue Length 50th (ft)	37	0	137		121	80
Queue Length 95th (ft)	74	43	235		m193	121
Internal Link Dist (ft)	486		568			397
Turn Bay Length (ft)	60				135	
Base Capacity (vph)	321	351	2208		503	2713
Starvation Cap Reductn	0	0	0		0	0
Spillback Cap Reductn	0	0	0		0	0
Storage Cap Reductn	0	0	0		0	0
Reduced v/c Ratio	0.16	0.23	0.43		0.53	0.19

Intersection Summary

Area Type: CBD



Lanes, Volumes, Timings  
15: Union Blvd & Platte Ave

2043 Background  
AM



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	100	500	55	180	1035	65	70	635	105	85	735	80
Future Volume (vph)	100	500	55	180	1035	65	70	635	105	85	735	80
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	170		35	150		0	215		115	305		0
Storage Lanes	1		1	1		1	1		1	1		0
Taper Length (ft)	120			65			40			75		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.95
Frt			0.850			0.850			0.850		0.985	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	3539	1583	1770	3486	0
Flt Permitted	0.212			0.259			0.182			0.248		
Satd. Flow (perm)	395	3539	1583	482	3539	1583	339	3539	1583	462	3486	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			218			153			218			15
Link Speed (mph)		35			35			35			35	
Link Distance (ft)		452			419			1555			508	
Travel Time (s)		8.8			8.2			30.3			9.9	
Peak Hour Factor	0.93	0.93	0.93	0.95	0.95	0.95	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	108	538	59	189	1089	68	75	683	113	91	790	86
Shared Lane Traffic (%)												
Lane Group Flow (vph)	108	538	59	189	1089	68	75	683	113	91	876	0
Enter Blocked Intersection	No											
Lane Alignment	Left	Left	Right									
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane								Yes			Yes	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	60		60	60		60	60		60	60		60
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0	0	
Detector 1 Size(ft)	20	6	20	20	6	20	20	6	20	20	6	
Detector 1 Type	CI+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	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	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	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		CI+Ex			CI+Ex			CI+Ex			CI+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8	2		2	6		

Lanes, Volumes, Timings  
15: Union Blvd & Platte Ave

2043 Background  
AM



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	22.5	22.5	9.5	22.5	22.5	9.5	22.5	22.5	9.5	22.5	22.5
Total Split (s)	10.0	24.0	24.0	15.0	29.0	29.0	10.0	26.0	26.0	10.0	26.0	26.0
Total Split (%)	13.3%	32.0%	32.0%	20.0%	38.7%	38.7%	13.3%	34.7%	34.7%	13.3%	34.7%	34.7%
Maximum Green (s)	5.5	19.5	19.5	10.5	24.5	24.5	5.5	21.5	21.5	5.5	21.5	21.5
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	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	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	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	4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lead	Lag	Lag									
Lead-Lag Optimize?	Yes											
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	Max										
Act Effect Green (s)	23.3	17.7	17.7	31.4	24.1	24.1	26.1	22.0	22.0	26.1	22.0	22.0
Actuated g/C Ratio	0.33	0.25	0.25	0.45	0.34	0.34	0.37	0.31	0.31	0.37	0.31	0.31
v/c Ratio	0.45	0.60	0.11	0.49	0.90	0.11	0.31	0.62	0.18	0.33	0.80	0.80
Control Delay	18.9	26.9	0.4	16.9	35.2	0.3	17.0	25.2	0.6	17.0	30.5	30.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	18.9	26.9	0.4	16.9	35.2	0.3	17.0	25.2	0.6	17.0	30.5	30.5
LOS	B	C	A	B	D	A	B	C	A	B	C	C
Approach Delay		23.4			30.8			21.3				29.2
Approach LOS		C			C			C				C
90th %ile Green (s)	5.5	19.5	19.5	10.5	24.5	24.5	5.5	21.5	21.5	5.5	21.5	21.5
90th %ile Term Code	Max	MaxR										
70th %ile Green (s)	5.5	19.5	19.5	10.5	24.5	24.5	5.5	21.5	21.5	5.5	21.5	21.5
70th %ile Term Code	Max	MaxR										
50th %ile Green (s)	5.5	19.7	19.7	10.3	24.5	24.5	5.5	21.5	21.5	5.5	21.5	21.5
50th %ile Term Code	Max	Hold	Hold	Gap	Max	Max	Max	Hold	Hold	Max	MaxR	MaxR
30th %ile Green (s)	5.5	21.1	21.1	8.9	24.5	24.5	5.5	21.5	21.5	5.5	21.5	21.5
30th %ile Term Code	Max	Hold	Hold	Gap	Max	Max	Max	Hold	Hold	Max	MaxR	MaxR
10th %ile Green (s)	0.0	10.0	10.0	6.6	21.1	21.1	0.0	21.5	21.5	0.0	21.5	21.5
10th %ile Term Code	Skip	Gap	Gap	Gap	Hold	Hold	Skip	Hold	Hold	Skip	MaxR	MaxR
Queue Length 50th (ft)	28	114	0	51	255	0	20	146	0	25	199	199
Queue Length 95th (ft)	55	164	0	90	#384	0	45	204	0	52	#303	#303
Internal Link Dist (ft)		372			339			1475				428
Turn Bay Length (ft)	170		35	150			215		115	305		
Base Capacity (vph)	240	1020	611	413	1261	662	239	1106	644	276	1100	1100
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.45	0.53	0.10	0.46	0.86	0.10	0.31	0.62	0.18	0.33	0.80	0.80

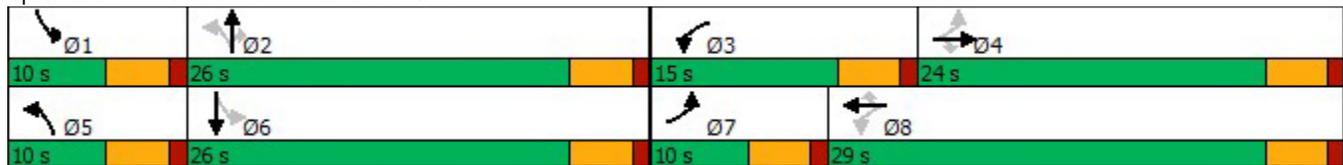
Intersection Summary

Area Type: Other  
 Cycle Length: 75  
 Actuated Cycle Length: 70.3  
 Natural Cycle: 80

Lanes, Volumes, Timings  
 15: Union Blvd & Platte Ave

Control Type: Actuated-Uncoordinated  
 Maximum v/c Ratio: 0.90  
 Intersection Signal Delay: 27.0 Intersection LOS: C  
 Intersection Capacity Utilization 76.2% ICU Level of Service D  
 Analysis Period (min) 15  
 90th %ile Actuated Cycle: 75  
 70th %ile Actuated Cycle: 75  
 50th %ile Actuated Cycle: 75  
 30th %ile Actuated Cycle: 75  
 10th %ile Actuated Cycle: 51.6  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

Splits and Phases: 15: Union Blvd & Platte Ave



Intersection						
Int Delay, s/veh	0.4					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	10	690	640	10	15	15
Future Vol, veh/h	10	690	640	10	15	15
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	120	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	93	93	92	92	78	78
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	11	742	696	11	19	19

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	707	0	-	0	1095 354
Stage 1	-	-	-	-	702 -
Stage 2	-	-	-	-	393 -
Critical Hdwy	4.14	-	-	-	6.84 6.94
Critical Hdwy Stg 1	-	-	-	-	5.84 -
Critical Hdwy Stg 2	-	-	-	-	5.84 -
Follow-up Hdwy	2.22	-	-	-	3.52 3.32
Pot Cap-1 Maneuver	887	-	-	-	*413 642
Stage 1	-	-	-	-	*453 -
Stage 2	-	-	-	-	*756 -
Platoon blocked, %		-	-	-	1
Mov Cap-1 Maneuver	887	-	-	-	*408 642
Mov Cap-2 Maneuver	-	-	-	-	*405 -
Stage 1	-	-	-	-	*448 -
Stage 2	-	-	-	-	*756 -

Approach	EB	WB	SB
HCM Control Delay, s	0.1	0	12.9
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	887	-	-	-	497
HCM Lane V/C Ratio	0.012	-	-	-	0.077
HCM Control Delay (s)	9.1	-	-	-	12.9
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.3

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

Intersection						
Int Delay, s/veh	0.6					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	20	680	630	20	25	15
Future Vol, veh/h	20	680	630	20	25	15
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	75	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	93	93	93	93	78	78
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	22	731	677	22	32	19

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	699	0	-	0	1098 350
Stage 1	-	-	-	-	688 -
Stage 2	-	-	-	-	410 -
Critical Hdwy	4.14	-	-	-	6.84 6.94
Critical Hdwy Stg 1	-	-	-	-	5.84 -
Critical Hdwy Stg 2	-	-	-	-	5.84 -
Follow-up Hdwy	2.22	-	-	-	3.52 3.32
Pot Cap-1 Maneuver	893	-	-	-	*403 646
Stage 1	-	-	-	-	*460 -
Stage 2	-	-	-	-	*761 -
Platoon blocked, %		-	-	-	1
Mov Cap-1 Maneuver	893	-	-	-	*393 646
Mov Cap-2 Maneuver	-	-	-	-	*403 -
Stage 1	-	-	-	-	*449 -
Stage 2	-	-	-	-	*761 -

Approach	EB	WB	SB
HCM Control Delay, s	0.3	0	13.6
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	893	-	-	-	469
HCM Lane V/C Ratio	0.024	-	-	-	0.109
HCM Control Delay (s)	9.1	-	-	-	13.6
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0.1	-	-	-	0.4

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

Intersection						
Int Delay, s/veh	0.8					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	55	25	25	755	700	90
Future Vol, veh/h	55	25	25	755	700	90
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	60	-	-	175
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	83	83	93	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	66	30	27	812	753	97

Major/Minor	Minor2	Major1		Major2	
Conflicting Flow All	1213	377	850	0	0
Stage 1	753	-	-	-	-
Stage 2	460	-	-	-	-
Critical Hdwy	6.84	6.94	4.14	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.22	-	-
Pot Cap-1 Maneuver	*553	*806	1098	-	-
Stage 1	*761	-	-	-	-
Stage 2	*735	-	-	-	-
Platoon blocked, %	1	1	1	-	-
Mov Cap-1 Maneuver	*539	*806	1098	-	-
Mov Cap-2 Maneuver	*583	-	-	-	-
Stage 1	*742	-	-	-	-
Stage 2	*735	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	11.6	0.3	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1098	-	638	-	-
HCM Lane V/C Ratio	0.024	-	0.151	-	-
HCM Control Delay (s)	8.4	-	11.6	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	0.1	-	0.5	-	-

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

Lanes, Volumes, Timings  
1: Union Blvd & Pikes Peak Ave

2043 Background  
PM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	220	615	105	85	465	115	205	625	60	110	750	220
Future Volume (vph)	220	615	105	85	465	115	205	625	60	110	750	220
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100		125	75		0	180		35	125		0
Storage Lanes	1		1	1		0	1		1	1		0
Taper Length (ft)	52			60			110			90		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	0.95	1.00	0.95	1.00	1.00	0.95	0.95
Frt			0.850		0.970				0.850		0.966	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3539	1583	1770	3433	0	1770	3539	1583	1770	3419	0
Flt Permitted	0.292			0.293			0.107			0.262		
Satd. Flow (perm)	544	3539	1583	546	3433	0	199	3539	1583	488	3419	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			124		29				124		37	
Link Speed (mph)		35			35			35			35	
Link Distance (ft)		871			409			998			1555	
Travel Time (s)		17.0			8.0			19.4			30.3	
Peak Hour Factor	0.93	0.93	0.93	0.92	0.92	0.92	0.93	0.93	0.93	0.95	0.95	0.95
Adj. Flow (vph)	237	661	113	92	505	125	220	672	65	116	789	232
Shared Lane Traffic (%)												
Lane Group Flow (vph)	237	661	113	92	630	0	220	672	65	116	1021	0
Enter Blocked Intersection	No	No	No	No	No	No						
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane		Yes			Yes			Yes			Yes	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	2	1	1	2	
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100	20	20	100		20	100	20	20	100	
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	6	20	20	6	
Detector 1 Type	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex		CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+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			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		CI+Ex			CI+Ex			CI+Ex			CI+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2		2	6			4		4	8		

Lanes, Volumes, Timings  
1: Union Blvd & Pikes Peak Ave

2043 Background  
PM



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	5	2	2	1	6		7	4	4	3	8	
Switch Phase												
Minimum Initial (s)	4.0	6.0	6.0	4.0	6.0		4.0	4.0	4.0	4.0	4.0	
Minimum Split (s)	9.0	35.0	35.0	9.0	35.0		9.0	37.0	37.0	9.0	37.0	
Total Split (s)	12.0	45.0	45.0	12.0	45.0		12.0	45.0	45.0	12.0	45.0	
Total Split (%)	10.5%	39.5%	39.5%	10.5%	39.5%		10.5%	39.5%	39.5%	10.5%	39.5%	
Maximum Green (s)	7.0	39.0	39.0	7.0	39.0		7.0	39.0	39.0	7.0	39.0	
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0		3.0	4.0	4.0	3.0	4.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.0	6.0	6.0	5.0	6.0		5.0	6.0	6.0	5.0	6.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	C-Max	C-Max	None	C-Max		None	None	None	None	None	
Walk Time (s)		7.0	7.0		7.0			7.0	7.0		7.0	
Flash Dont Walk (s)		22.0	22.0		22.0			24.0	24.0		24.0	
Pedestrian Calls (#/hr)		0	0		0			0	0		0	
Act Effect Green (s)	49.5	40.5	40.5	47.5	39.5		45.5	37.5	37.5	45.5	37.5	
Actuated g/C Ratio	0.43	0.36	0.36	0.42	0.35		0.40	0.33	0.33	0.40	0.33	
v/c Ratio	0.74	0.53	0.18	0.30	0.52		1.26	0.58	0.11	0.42	0.89	
Control Delay	38.0	31.4	4.5	20.5	30.2		182.0	29.1	0.4	16.8	41.7	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay	38.0	31.4	4.5	20.5	30.2		182.0	29.1	0.4	16.8	41.7	
LOS	D	C	A	C	C		F	C	A	B	D	
Approach Delay		29.9			29.0			62.3			39.2	
Approach LOS		C			C			E			D	
90th %ile Green (s)	7.0	39.0	39.0	7.0	39.0		7.0	39.0	39.0	7.0	39.0	
90th %ile Term Code	Max	Coord	Coord	Max	Coord		Max	Hold	Hold	Max	Max	
70th %ile Green (s)	7.0	39.0	39.0	7.0	39.0		7.0	39.0	39.0	7.0	39.0	
70th %ile Term Code	Max	Coord	Coord	Max	Coord		Max	Hold	Hold	Max	Max	
50th %ile Green (s)	7.0	39.0	39.0	7.0	39.0		7.0	39.0	39.0	7.0	39.0	
50th %ile Term Code	Max	Coord	Coord	Max	Coord		Max	Hold	Hold	Max	Max	
30th %ile Green (s)	8.4	39.7	39.7	7.7	39.0		7.0	37.6	37.6	7.0	37.6	
30th %ile Term Code	Max	Coord	Coord	Gap	Coord		Max	Hold	Hold	Max	Gap	
10th %ile Green (s)	10.5	46.0	46.0	6.2	41.7		7.0	32.8	32.8	7.0	32.8	
10th %ile Term Code	Gap	Coord	Coord	Gap	Coord		Max	Hold	Hold	Max	Gap	
Queue Length 50th (ft)	106	205	0	38	184		~148	209	0	54	398	
Queue Length 95th (ft)	#201	264	33	70	242		#309	242	m0	m69	474	
Internal Link Dist (ft)		791			329			918			1475	
Turn Bay Length (ft)	100		125	75			180		35	125		
Base Capacity (vph)	322	1258	643	305	1209		175	1210	623	273	1194	
Starvation Cap Reductn	0	0	0	0	0		0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0		0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0		0	0	0	0	0	
Reduced v/c Ratio	0.74	0.53	0.18	0.30	0.52		1.26	0.56	0.10	0.42	0.86	

Intersection Summary

Area Type: Other



Lanes, Volumes, Timings  
4: Printers Pkwy & Pikes Peak Ave

2043 Background  
PM



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	20	550	200	30	475	30	165	10	55	10	5	13
Future Volume (vph)	20	550	200	30	475	30	165	10	55	10	5	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	80		0	120		0	0		195	0		0
Storage Lanes	1		1	1		0	1		1	1		1
Taper Length (ft)	60			90			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00
Frt			0.850		0.991				0.850			0.850
Flt Protected	0.950			0.950			0.950	0.957		0.950		
Satd. Flow (prot)	1770	3539	1583	1770	3507	0	1681	1694	1583	1770	1863	1583
Flt Permitted	0.417			0.395			0.950	0.957		0.950		
Satd. Flow (perm)	777	3539	1583	736	3507	0	1681	1694	1583	1770	1863	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			215		8				71			71
Link Speed (mph)		35			35			35				35
Link Distance (ft)		606			424			673				158
Travel Time (s)		11.8			8.3			13.1				3.1
Peak Hour Factor	0.93	0.93	0.93	0.92	0.92	0.92	0.87	0.87	0.87	0.78	0.78	0.78
Adj. Flow (vph)	22	591	215	33	516	33	190	11	63	13	6	17
Shared Lane Traffic (%)							47%					
Lane Group Flow (vph)	22	591	215	33	549	0	101	100	63	13	6	17
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	R NA	Left	Left	R NA	Left	Left	R NA	L NA	Left	R NA
Median Width(ft)		12			12			24				24
Link Offset(ft)		0			0			-10				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane		Yes			Yes							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		35	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100		20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0		0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0		0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20	20	6		20	6	20	20	6	20
Detector 1 Type	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex		CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+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	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	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	0.0
Detector 2 Position(ft)		94			94			94				94
Detector 2 Size(ft)		6			6			6				6
Detector 2 Type		CI+Ex			CI+Ex			CI+Ex				CI+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				0.0
Turn Type	Perm	NA	Perm	Perm	NA		Split	NA	Perm	Split	NA	Perm
Protected Phases		2			6		8	8		4	4	
Permitted Phases	2		2	6					8			4

Lanes, Volumes, Timings  
4: Printers Pkwy & Pikes Peak Ave

2043 Background  
PM



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	2	2	2	6	6		8	8	8	4	4	4
Switch Phase												
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	30.0	30.0	30.0	30.0	30.0		32.0	32.0	32.0	22.0	22.0	22.0
Total Split (s)	85.0	85.0	85.0	85.0	85.0		31.0	31.0	31.0	22.0	22.0	22.0
Total Split (%)	61.6%	61.6%	61.6%	61.6%	61.6%		22.5%	22.5%	22.5%	15.9%	15.9%	15.9%
Maximum Green (s)	79.0	79.0	79.0	79.0	79.0		25.0	25.0	25.0	16.0	16.0	16.0
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0		6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	C-Max	C-Max	C-Max	Max	Max		Max	Max	Max	Max	Max	Max
Walk Time (s)	7.0	7.0	7.0	7.0	7.0		7.0	7.0	7.0			
Flash Dont Walk (s)	17.0	17.0	17.0	17.0	17.0		19.0	19.0	19.0			
Pedestrian Calls (#/hr)	0	0	0	0	0		0	0	0			
Act Effect Green (s)	79.0	79.0	79.0	79.0	79.0		25.0	25.0	25.0	16.0	16.0	16.0
Actuated g/C Ratio	0.57	0.57	0.57	0.57	0.57		0.18	0.18	0.18	0.12	0.12	0.12
v/c Ratio	0.05	0.29	0.22	0.08	0.27		0.33	0.33	0.18	0.06	0.03	0.07
Control Delay	13.5	15.6	2.2	13.9	15.1		52.8	52.6	9.7	55.4	54.6	0.5
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	13.5	15.6	2.2	13.9	15.1		52.8	52.6	9.7	55.4	54.6	0.5
LOS	B	B	A	B	B		D	D	A	E	D	A
Approach Delay		12.1			15.1			42.5			29.4	
Approach LOS		B			B			D			C	
90th %ile Green (s)	79.0	79.0	79.0	79.0	79.0		25.0	25.0	25.0	16.0	16.0	16.0
90th %ile Term Code	Coord	Coord	Coord	Coord	Coord		Ped	Ped	Ped	MaxR	MaxR	MaxR
70th %ile Green (s)	79.0	79.0	79.0	79.0	79.0		25.0	25.0	25.0	16.0	16.0	16.0
70th %ile Term Code	Coord	Coord	Coord	Coord	Coord		Ped	Ped	Ped	MaxR	MaxR	MaxR
50th %ile Green (s)	79.0	79.0	79.0	79.0	79.0		25.0	25.0	25.0	16.0	16.0	16.0
50th %ile Term Code	Coord	Coord	Coord	Coord	Coord		Ped	Ped	Ped	MaxR	MaxR	MaxR
30th %ile Green (s)	79.0	79.0	79.0	79.0	79.0		25.0	25.0	25.0	16.0	16.0	16.0
30th %ile Term Code	Coord	Coord	Coord	Coord	Coord		Ped	Ped	Ped	MaxR	MaxR	MaxR
10th %ile Green (s)	79.0	79.0	79.0	79.0	79.0		25.0	25.0	25.0	16.0	16.0	16.0
10th %ile Term Code	Coord	Coord	Coord	Coord	Coord		Ped	Ped	Ped	MaxR	MaxR	MaxR
Queue Length 50th (ft)	8	137	0	13	124		84	83	0	11	5	0
Queue Length 95th (ft)	22	173	35	30	158		138	137	32	28	17	0
Internal Link Dist (ft)		526			344			593			78	
Turn Bay Length (ft)	80			120					195			
Base Capacity (vph)	444	2025	998	421	2011		304	306	344	205	216	246
Starvation Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.05	0.29	0.22	0.08	0.27		0.33	0.33	0.18	0.06	0.03	0.07

Intersection Summary

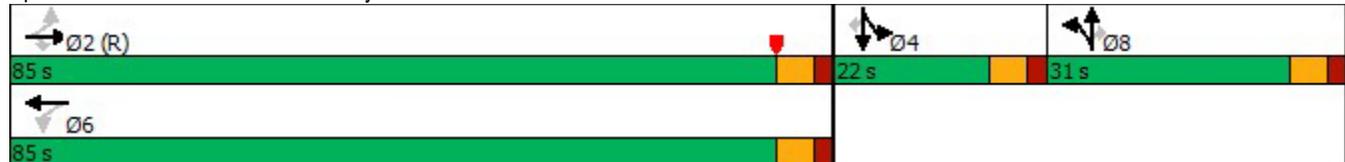
Area Type: Other

Lanes, Volumes, Timings  
 4: Printers Pkwy & Pikes Peak Ave

2043 Background  
 PM

Cycle Length: 138	
Actuated Cycle Length: 138	
Offset: 0 (0%), Referenced to phase 2:EBTL, Start of Yellow	
Natural Cycle: 85	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.33	
Intersection Signal Delay: 18.1	Intersection LOS: B
Intersection Capacity Utilization 45.0%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 4: Printers Pkwy & Pikes Peak Ave



Lanes, Volumes, Timings  
12: Union Blvd & Parkside Dr

2043 Background  
PM

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	115	280	615	35	40	905
Future Volume (vph)	115	280	615	35	40	905
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	60	0		0	135	
Storage Lanes	1	1		0	1	
Taper Length (ft)	55				90	
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	0.95
Frt		0.850	0.992			
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1593	1425	3160	0	1593	3185
Flt Permitted	0.950				0.343	
Satd. Flow (perm)	1593	1425	3160	0	575	3185
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		322	8			
Link Speed (mph)	30		35			35
Link Distance (ft)	566		648			477
Travel Time (s)	12.9		12.6			9.3
Peak Hour Factor	0.87	0.87	0.93	0.93	0.93	0.93
Adj. Flow (vph)	132	322	661	38	43	973
Shared Lane Traffic (%)						
Lane Group Flow (vph)	132	322	699	0	43	973
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		12			12
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane	Yes		Yes			Yes
Headway Factor	1.14	1.14	1.14	1.14	1.14	1.14
Turning Speed (mph)	15	9		9	15	
Number of Detectors	1	1	2		1	2
Detector Template	Left	Right	Thru		Left	Thru
Leading Detector (ft)	20	20	100		20	100
Trailing Detector (ft)	0	0	0		0	0
Detector 1 Position(ft)	0	0	0		0	0
Detector 1 Size(ft)	20	20	6		20	6
Detector 1 Type	CI+Ex	CI+Ex	CI+Ex		CI+Ex	CI+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0		0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0		0.0	0.0
Detector 1 Delay (s)	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			CI+Ex			CI+Ex
Detector 2 Channel						
Detector 2 Extend (s)			0.0			0.0
Turn Type	Prot	Perm	NA		pm+pt	NA
Protected Phases	8		2		1	6
Permitted Phases		8			6	

Lanes, Volumes, Timings  
12: Union Blvd & Parkside Dr

2043 Background  
PM



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Detector Phase	8	8	2		1	6
Switch Phase						
Minimum Initial (s)	8.0	8.0	20.0		4.0	20.0
Minimum Split (s)	28.0	28.0	27.0		9.5	25.0
Total Split (s)	29.0	29.0	66.0		19.0	85.0
Total Split (%)	25.4%	25.4%	57.9%		16.7%	74.6%
Maximum Green (s)	23.0	23.0	61.0		14.0	80.0
Yellow Time (s)	4.0	4.0	3.0		3.0	3.0
All-Red Time (s)	2.0	2.0	2.0		2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	6.0	6.0	5.0		5.0	5.0
Lead/Lag			Lag		Lead	
Lead-Lag Optimize?			Yes		Yes	
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Recall Mode	None	None	C-Max		None	C-Max
Walk Time (s)	7.0	7.0	7.0			
Flash Dont Walk (s)	15.0	15.0	15.0			
Pedestrian Calls (#/hr)	0	0	0			
Act Effect Green (s)	14.7	14.7	79.1		88.3	88.3
Actuated g/C Ratio	0.13	0.13	0.69		0.77	0.77
v/c Ratio	0.64	0.69	0.32		0.09	0.39
Control Delay	60.9	13.2	8.2		9.0	12.4
Queue Delay	0.0	0.0	0.0		0.0	0.0
Total Delay	60.9	13.2	8.2		9.0	12.4
LOS	E	B	A		A	B
Approach Delay	27.1		8.2			12.3
Approach LOS	C		A			B
90th %ile Green (s)	20.5	20.5	70.2		7.3	82.5
90th %ile Term Code	Gap	Gap	Coord		Gap	Coord
70th %ile Green (s)	17.1	17.1	74.3		6.6	85.9
70th %ile Term Code	Gap	Gap	Coord		Gap	Coord
50th %ile Green (s)	14.7	14.7	77.1		6.2	88.3
50th %ile Term Code	Gap	Gap	Coord		Gap	Coord
30th %ile Green (s)	12.3	12.3	79.9		5.8	90.7
30th %ile Term Code	Gap	Gap	Coord		Gap	Coord
10th %ile Green (s)	8.9	8.9	94.1		0.0	94.1
10th %ile Term Code	Gap	Gap	Coord		Skip	Coord
Queue Length 50th (ft)	93	0	100		15	212
Queue Length 95th (ft)	145	70	158		m24	290
Internal Link Dist (ft)	486		568			397
Turn Bay Length (ft)	60				135	
Base Capacity (vph)	321	544	2195		570	2466
Starvation Cap Reductn	0	0	0		0	0
Spillback Cap Reductn	0	0	0		0	0
Storage Cap Reductn	0	0	0		0	0
Reduced v/c Ratio	0.41	0.59	0.32		0.08	0.39

Intersection Summary

Area Type: CBD



Lanes, Volumes, Timings  
15: Union Blvd & Platte Ave

2043 Background  
PM



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	240	995	45	135	685	65	75	735	140	110	750	70
Future Volume (vph)	240	995	45	135	685	65	75	735	140	110	750	70
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	170		35	150		0	215		115	305		0
Storage Lanes	1		1	1		1	1		1	1		0
Taper Length (ft)	120			65			40			75		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.95
Frt			0.850			0.850			0.850		0.987	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	3539	1583	1770	3493	0
Flt Permitted	0.221			0.105			0.144			0.169		
Satd. Flow (perm)	412	3539	1583	196	3539	1583	268	3539	1583	315	3493	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			124			134			124			9
Link Speed (mph)		35			35			35			35	
Link Distance (ft)		452			419			1555			508	
Travel Time (s)		8.8			8.2			30.3			9.9	
Peak Hour Factor	0.95	0.95	0.95	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	253	1047	47	145	737	70	81	790	151	118	806	75
Shared Lane Traffic (%)												
Lane Group Flow (vph)	253	1047	47	145	737	70	81	790	151	118	881	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane								Yes			Yes	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	60		60	60		60	60		60	60		60
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0	0	
Detector 1 Size(ft)	20	6	20	20	6	20	20	6	20	20	6	
Detector 1 Type	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+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	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	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	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		CI+Ex			CI+Ex			CI+Ex			CI+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	Perm	pm+pt	NA	custom	pm+pt	NA	Perm	pm+pt	NA	
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2		2	6		1	4		4	8		

Lanes, Volumes, Timings  
15: Union Blvd & Platte Ave

2043 Background  
PM



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	5	2	2	1	6	1	7	4	4	3	8	
Switch Phase												
Minimum Initial (s)	4.0	6.0	6.0	4.0	6.0	4.0	4.0	4.0	4.0	4.0	4.0	
Minimum Split (s)	9.0	35.0	35.0	9.0	35.0	9.0	9.0	37.0	37.0	9.0	37.0	
Total Split (s)	12.0	45.0	45.0	12.0	45.0	12.0	12.0	45.0	45.0	12.0	45.0	
Total Split (%)	10.5%	39.5%	39.5%	10.5%	39.5%	10.5%	10.5%	39.5%	39.5%	10.5%	39.5%	
Maximum Green (s)	7.0	39.0	39.0	7.0	39.0	7.0	7.0	39.0	39.0	7.0	39.0	
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0	3.0	3.0	4.0	4.0	3.0	4.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.0	6.0	6.0	5.0	6.0	5.0	5.0	6.0	6.0	5.0	6.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes											
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	C-Max	C-Max	None	C-Max	None	None	None	None	None	None	
Act Effect Green (s)	53.4	42.0	42.0	49.8	40.0	8.7	42.0	34.2	34.2	43.2	36.6	
Actuated g/C Ratio	0.47	0.37	0.37	0.44	0.35	0.08	0.37	0.30	0.30	0.38	0.32	
v/c Ratio	0.79	0.80	0.07	0.70	0.59	0.29	0.43	0.74	0.27	0.57	0.78	
Control Delay	42.1	38.9	0.2	39.6	33.0	2.9	20.0	34.0	7.9	31.1	40.3	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	42.1	38.9	0.2	39.6	33.0	2.9	20.0	34.0	7.9	31.1	40.3	
LOS	D	D	A	D	C	A	B	C	A	C	D	
Approach Delay		38.1			31.8			29.1			39.2	
Approach LOS		D			C			C			D	
90th %ile Green (s)	7.0	39.0	39.0	7.0	39.0	7.0	7.0	39.0	39.0	7.0	39.0	
90th %ile Term Code	Max	Coord	Coord	Max	Coord	Max	Max	Max	Max	Max	Max	
70th %ile Green (s)	7.7	39.0	39.0	7.7	39.0	7.7	7.0	38.3	38.3	7.0	38.3	
70th %ile Term Code	Max	Coord	Coord	Max	Coord	Max	Max	Hold	Hold	Max	Gap	
50th %ile Green (s)	10.1	39.0	39.0	10.1	39.0	10.1	7.0	35.9	35.9	7.0	35.9	
50th %ile Term Code	Max	Coord	Coord	Max	Coord	Max	Max	Hold	Hold	Max	Gap	
30th %ile Green (s)	13.4	41.9	41.9	10.5	39.0	10.5	7.0	32.6	32.6	7.0	32.6	
30th %ile Term Code	Max	Coord	Coord	Gap	Coord	Gap	Max	Hold	Hold	Max	Gap	
10th %ile Green (s)	15.6	51.3	51.3	8.4	44.1	8.4	0.0	25.3	25.3	7.0	37.3	
10th %ile Term Code	Gap	Coord	Coord	Gap	Coord	Gap	Skip	Gap	Gap	Max	Hold	
Queue Length 50th (ft)	109	375	0	58	234	0	24	291	42	52	306	
Queue Length 95th (ft)	#272	#465	0	#163	299	0	m41	352	m75	86	370	
Internal Link Dist (ft)		372			339			1475			428	
Turn Bay Length (ft)	170		35	150			215		115	305		
Base Capacity (vph)	321	1304	662	206	1242	244	191	1210	623	208	1200	
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.79	0.80	0.07	0.70	0.59	0.29	0.42	0.65	0.24	0.57	0.73	

Intersection Summary

Area Type: Other  
 Cycle Length: 114  
 Actuated Cycle Length: 114  
 Offset: 12 (11%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green



Intersection						
Int Delay, s/veh	0.5					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	20	760	465	20	20	15
Future Vol, veh/h	20	760	465	20	20	15
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	120	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	93	93	92	92	78	78
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	22	817	505	22	26	19

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	527	0	-	0	969
Stage 1	-	-	-	-	516
Stage 2	-	-	-	-	453
Critical Hdwy	4.14	-	-	-	6.84
Critical Hdwy Stg 1	-	-	-	-	5.84
Critical Hdwy Stg 2	-	-	-	-	5.84
Follow-up Hdwy	2.22	-	-	-	3.52
Pot Cap-1 Maneuver	1036	-	-	-	*586
Stage 1	-	-	-	-	*564
Stage 2	-	-	-	-	*730
Platoon blocked, %		-	-	-	1
Mov Cap-1 Maneuver	1036	-	-	-	*573
Mov Cap-2 Maneuver	-	-	-	-	*501
Stage 1	-	-	-	-	*552
Stage 2	-	-	-	-	*730

Approach	EB	WB	SB
HCM Control Delay, s	0.2	0	11.7
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1036	-	-	-	580
HCM Lane V/C Ratio	0.021	-	-	-	0.077
HCM Control Delay (s)	8.5	-	-	-	11.7
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0.1	-	-	-	0.3

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

Intersection						
Int Delay, s/veh	0.5					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	20	750	640	20	25	15
Future Vol, veh/h	20	750	640	20	25	15
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	75	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	93	93	93	93	78	78
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	22	806	688	22	32	19

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	710	0	-	0	1146 355
Stage 1	-	-	-	-	699 -
Stage 2	-	-	-	-	447 -
Critical Hdwy	4.14	-	-	-	6.84 6.94
Critical Hdwy Stg 1	-	-	-	-	5.84 -
Critical Hdwy Stg 2	-	-	-	-	5.84 -
Follow-up Hdwy	2.22	-	-	-	3.52 3.32
Pot Cap-1 Maneuver	885	-	-	-	*402 641
Stage 1	-	-	-	-	*454 -
Stage 2	-	-	-	-	*735 -
Platoon blocked, %		-	-	-	1
Mov Cap-1 Maneuver	885	-	-	-	*392 641
Mov Cap-2 Maneuver	-	-	-	-	*398 -
Stage 1	-	-	-	-	*443 -
Stage 2	-	-	-	-	*735 -

Approach	EB	WB	SB
HCM Control Delay, s	0.2	0	13.7
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	885	-	-	-	464
HCM Lane V/C Ratio	0.024	-	-	-	0.111
HCM Control Delay (s)	9.2	-	-	-	13.7
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0.1	-	-	-	0.4

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

Intersection						
Int Delay, s/veh	0.9					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↘		↘	↑↑	↑↑	↘
Traffic Vol, veh/h	45	50	50	845	895	45
Future Vol, veh/h	45	50	50	845	895	45
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	60	-	-	175
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	83	83	93	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	54	60	54	909	962	48

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	1525	481	1010	0	-	0
Stage 1	962	-	-	-	-	-
Stage 2	563	-	-	-	-	-
Critical Hdwy	6.84	6.94	4.14	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.22	-	-	-
Pot Cap-1 Maneuver	*379	*725	1060	-	-	-
Stage 1	*685	-	-	-	-	-
Stage 2	*710	-	-	-	-	-
Platoon blocked, %	1	1	1	-	-	-
Mov Cap-1 Maneuver	*359	*725	1060	-	-	-
Mov Cap-2 Maneuver	*473	-	-	-	-	-
Stage 1	*650	-	-	-	-	-
Stage 2	*710	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	12.7	0.5	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1060	-	579	-	-
HCM Lane V/C Ratio	0.051	-	0.198	-	-
HCM Control Delay (s)	8.6	-	12.7	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	0.2	-	0.7	-	-

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

Lanes, Volumes, Timings  
1: Union Blvd & Pikes Peak Ave

2044 Background + Site

AM



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	140	603	189	70	609	175	192	608	171	215	594	225
Future Volume (vph)	140	603	189	70	609	175	192	608	171	215	594	225
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	300		125	150		0	500		35	125		0
Storage Lanes	1		1	1		0	1		1	1		0
Taper Length (ft)	50			50			90			90		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	0.95	1.00	0.95	1.00	1.00	0.95	0.95
Frt			0.850		0.967				0.850		0.959	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3539	1583	1770	3422	0	1770	3539	1583	1770	3394	0
Flt Permitted	0.139			0.321			0.136			0.267		
Satd. Flow (perm)	259	3539	1583	598	3422	0	253	3539	1583	497	3394	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			134		28				103		42	
Link Speed (mph)		35			35			35			35	
Link Distance (ft)		871			409			841			1555	
Travel Time (s)		17.0			8.0			16.4			30.3	
Peak Hour Factor	0.95	0.95	0.95	0.93	0.93	0.93	0.95	0.95	0.95	0.93	0.93	0.93
Adj. Flow (vph)	147	635	199	75	655	188	202	640	180	231	639	242
Shared Lane Traffic (%)												
Lane Group Flow (vph)	147	635	199	75	843	0	202	640	180	231	881	0
Enter Blocked Intersection	No	No	No	No								
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane		Yes			Yes						Yes	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	2	1	1	2	
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100	20	20	100		20	100	20	20	100	
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	6	20	20	6	
Detector 1 Type	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex		CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+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			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		CI+Ex			CI+Ex			CI+Ex			CI+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	custom	pm+pt	NA	
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2		2	6			4		2	8		

Lanes, Volumes, Timings  
1: Union Blvd & Pikes Peak Ave

2044 Background + Site  
AM



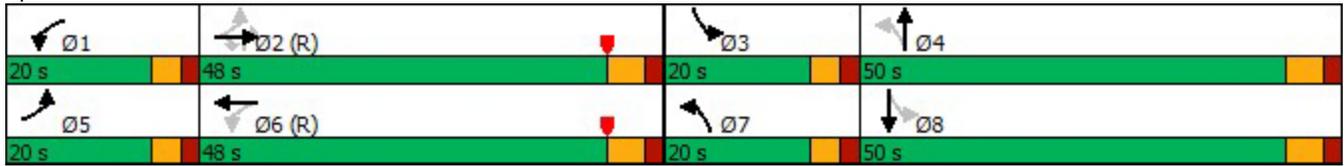
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	5	2	2	1	6		7	4	2	3	8	
Switch Phase												
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Minimum Split (s)	9.0	33.0	33.0	9.0	33.0		9.0	33.0	33.0	9.0	33.0	
Total Split (s)	20.0	48.0	48.0	20.0	48.0		20.0	50.0	48.0	20.0	50.0	
Total Split (%)	14.5%	34.8%	34.8%	14.5%	34.8%		14.5%	36.2%	34.8%	14.5%	36.2%	
Maximum Green (s)	15.0	42.0	42.0	15.0	42.0		15.0	44.0	42.0	15.0	44.0	
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0		3.0	4.0	4.0	3.0	4.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.0	6.0	6.0	5.0	6.0		5.0	6.0	6.0	5.0	6.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	C-Max	C-Max	None	C-Max		None	Max	C-Max	None	Max	
Walk Time (s)		7.0	7.0		7.0			7.0	7.0		7.0	
Flash Dont Walk (s)		20.0	20.0		20.0			20.0	20.0		20.0	
Pedestrian Calls (#/hr)		0	0		0			0	0		0	
Act Effect Green (s)	61.8	50.4	50.4	54.8	45.0		59.8	44.9	50.4	60.2	45.1	
Actuated g/C Ratio	0.45	0.37	0.37	0.40	0.33		0.43	0.33	0.37	0.44	0.33	
v/c Ratio	0.60	0.49	0.30	0.24	0.74		0.77	0.56	0.28	0.67	0.77	
Control Delay	32.7	36.4	12.8	32.1	55.5		45.4	40.8	15.5	32.8	45.5	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay	32.7	36.4	12.8	32.1	55.5		45.4	40.8	15.5	32.8	45.5	
LOS	C	D	B	C	E		D	D	B	C	D	
Approach Delay		31.1			53.6			37.3			42.9	
Approach LOS		C			D			D			D	
Queue Length 50th (ft)	77	236	40	38	399		106	251	47	124	363	
Queue Length 95th (ft)	123	306	105	69	475		#204	315	111	184	446	
Internal Link Dist (ft)		791			329			761			1475	
Turn Bay Length (ft)	300		125	150			500		35	125		
Base Capacity (vph)	281	1293	663	390	1134		276	1151	643	358	1138	
Starvation Cap Reductn	0	0	0	0	0		0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0		0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0		0	0	0	0	0	
Reduced v/c Ratio	0.52	0.49	0.30	0.19	0.74		0.73	0.56	0.28	0.65	0.77	

Intersection Summary

Area Type: Other  
 Cycle Length: 138  
 Actuated Cycle Length: 138  
 Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow, Master Intersection  
 Natural Cycle: 85  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.77  
 Intersection Signal Delay: 41.0 Intersection LOS: D  
 Intersection Capacity Utilization 82.8% ICU Level of Service E  
 Analysis Period (min) 15  
 # 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 1: Union Blvd & Pikes Peak Ave



Lanes, Volumes, Timings  
3: Iowa Ave & Pikes Peak Ave

2044 Background + Site  
AM



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	31	662	78	53	629	20	121	35	71	25	94	34
Future Volume (vph)	31	662	78	53	629	20	121	35	71	25	94	34
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	120		0	120		0	0		150	0		0
Storage Lanes	1		0	1		0	1		1	1		0
Taper Length (ft)	180			150			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frnt		0.984			0.995			0.899			0.960	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3483	0	1770	3522	0	1770	1675	0	1770	1788	0
Flt Permitted	0.303			0.241			0.534			0.679		
Satd. Flow (perm)	564	3483	0	449	3522	0	995	1675	0	1265	1788	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		12			3			72			12	
Link Speed (mph)		35			35			25			25	
Link Distance (ft)		802			606			553			364	
Travel Time (s)		15.6			11.8			15.1			9.9	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.87	0.87	0.87	0.87	0.87	0.87
Adj. Flow (vph)	33	712	84	57	676	22	139	40	82	29	108	39
Shared Lane Traffic (%)												
Lane Group Flow (vph)	33	796	0	57	698	0	139	122	0	29	147	0
Enter Blocked Intersection	No											
Lane Alignment	Left	Left	Right									
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane		Yes			Yes							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru										
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	CI+Ex	CI+Ex										
Detector 1 Channel												
Detector 1 Extend (s)	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	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		CI+Ex			CI+Ex			CI+Ex			CI+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA										
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2			6			4			8		

Lanes, Volumes, Timings  
3: Iowa Ave & Pikes Peak Ave

2044 Background + Site  
AM

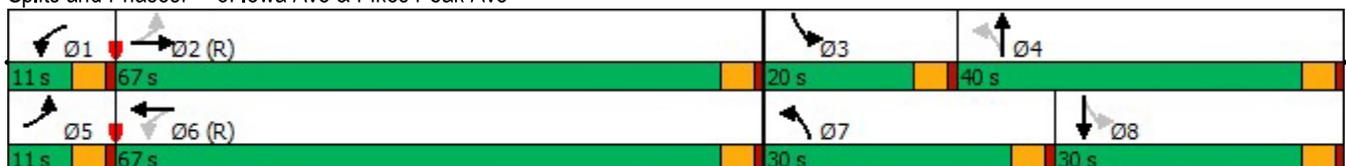


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	5	2		1	6		7	4		3	8	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	9.5	22.5		9.5	22.5		9.5	22.5		9.5	22.5	
Total Split (s)	11.0	67.0		11.0	67.0		30.0	40.0		20.0	30.0	
Total Split (%)	8.0%	48.6%		8.0%	48.6%		21.7%	29.0%		14.5%	21.7%	
Maximum Green (s)	6.5	62.5		6.5	62.5		25.5	35.5		15.5	25.5	
Yellow Time (s)	3.5	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	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.5	4.5		4.5	4.5		4.5	4.5		4.5	4.5	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		None	C-Max		None	Max		None	Max	
Act Effect Green (s)	69.8	64.7		70.8	66.9		55.5	48.2		45.3	38.4	
Actuated g/C Ratio	0.51	0.47		0.51	0.48		0.40	0.35		0.33	0.28	
v/c Ratio	0.10	0.49		0.20	0.41		0.30	0.19		0.07	0.29	
Control Delay	16.8	22.4		13.9	16.8		28.7	15.8		26.1	38.6	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	16.8	22.4		13.9	16.8		28.7	15.8		26.1	38.6	
LOS	B	C		B	B		C	B		C	D	
Approach Delay		22.1			16.6			22.7			36.5	
Approach LOS		C			B			C			D	
Queue Length 50th (ft)	11	162		19	120		80	32		16	95	
Queue Length 95th (ft)	m28	247		35	142		125	77		35	158	
Internal Link Dist (ft)		722			526			473			284	
Turn Bay Length (ft)	120			120								
Base Capacity (vph)	342	1639		292	1708		543	632		545	506	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.10	0.49		0.20	0.41		0.26	0.19		0.05	0.29	

Intersection Summary

Area Type: Other  
 Cycle Length: 138  
 Actuated Cycle Length: 138  
 Offset: 72 (52%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green  
 Natural Cycle: 65  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.49  
 Intersection Signal Delay: 21.4      Intersection LOS: C  
 Intersection Capacity Utilization 53.7%      ICU Level of Service A  
 Analysis Period (min) 15  
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 3: Iowa Ave & Pikes Peak Ave



Lanes, Volumes, Timings  
4: Printers Pkwy & Pikes Peak Ave

2044 Background + Site  
AM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	10	513	240	60	552	15	130	10	30	5	0	10
Future Volume (vph)	10	513	240	60	552	15	130	10	30	5	0	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	80		0	120		0	0		195	0		0
Storage Lanes	1		1	1		0	1		1	1		1
Taper Length (ft)	150			90			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00
Frt			0.850		0.996				0.850			0.850
Flt Protected	0.950			0.950			0.950	0.959		0.950		
Satd. Flow (prot)	1770	3539	1583	1770	3525	0	1681	1697	1583	1770	1863	1583
Flt Permitted	0.383			0.414			0.950	0.959		0.950		
Satd. Flow (perm)	713	3539	1583	771	3525	0	1681	1697	1583	1770	1863	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			258		3				71			307
Link Speed (mph)		35		35				35		35		35
Link Distance (ft)		606		540				416		158		158
Travel Time (s)		11.8		10.5				8.1		3.1		3.1
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.87	0.87	0.87	0.78	0.78	0.78
Adj. Flow (vph)	11	552	258	65	594	16	149	11	34	6	0	13
Shared Lane Traffic (%)							46%					
Lane Group Flow (vph)	11	552	258	65	610	0	80	80	34	6	0	13
Enter Blocked Intersection	No	No	No	No	No	No						
Lane Alignment	Left	Left	R NA	Left	Left	R NA	Left	Left	R NA	L NA	Left	R NA
Median Width(ft)		12		12				12		12		12
Link Offset(ft)		0		0				-10		0		0
Crosswalk Width(ft)		16		16				16		16		16
Two way Left Turn Lane		Yes		Yes								
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		35	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100		20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0		0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0		0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20	20	6		20	6	20	20	6	20
Detector 1 Type	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex		CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+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	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	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	0.0
Detector 2 Position(ft)		94		94				94		94		94
Detector 2 Size(ft)		6		6				6		6		6
Detector 2 Type		CI+Ex		CI+Ex				CI+Ex		CI+Ex		CI+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0		0.0				0.0		0.0		0.0
Turn Type	Perm	NA	Perm	Perm	NA		Split	NA	Perm	Split		Perm
Protected Phases		2		6			8	8		4	4	
Permitted Phases	2		2	6					8			4

Lanes, Volumes, Timings  
4: Printers Pkwy & Pikes Peak Ave

2044 Background + Site  
AM

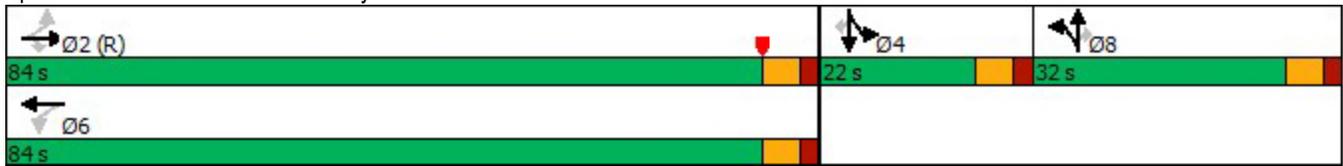


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	2	2	2	6	6		8	8	8	4	4	4
Switch Phase												
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	30.0	30.0	30.0	30.0	30.0		32.0	32.0	32.0	22.0	22.0	22.0
Total Split (s)	84.0	84.0	84.0	84.0	84.0		32.0	32.0	32.0	22.0	22.0	22.0
Total Split (%)	60.9%	60.9%	60.9%	60.9%	60.9%		23.2%	23.2%	23.2%	15.9%	15.9%	15.9%
Maximum Green (s)	78.0	78.0	78.0	78.0	78.0		26.0	26.0	26.0	16.0	16.0	16.0
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0		6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	C-Max	C-Max	C-Max	Max	Max		Max	Max	Max	Max	Max	Max
Walk Time (s)	7.0	7.0	7.0	7.0	7.0		7.0	7.0	7.0			
Flash Dont Walk (s)	17.0	17.0	17.0	17.0	17.0		19.0	19.0	19.0			
Pedestrian Calls (#/hr)	0	0	0	0	0		0	0	0			
Act Effect Green (s)	78.0	78.0	78.0	78.0	78.0		26.0	26.0	26.0	16.0		16.0
Actuated g/C Ratio	0.57	0.57	0.57	0.57	0.57		0.19	0.19	0.19	0.12		0.12
v/c Ratio	0.03	0.28	0.26	0.15	0.31		0.25	0.25	0.10	0.03		0.03
Control Delay	6.5	9.6	5.2	15.4	16.2		50.2	50.2	0.8	54.8		0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0		0.0
Total Delay	6.5	9.6	5.2	15.4	16.2		50.2	50.2	0.8	54.8		0.1
LOS	A	A	A	B	B		D	D	A	D		A
Approach Delay		8.2			16.1			41.6				17.4
Approach LOS		A			B			D				B
Queue Length 50th (ft)	4	120	68	27	144		65	65	0	5		0
Queue Length 95th (ft)	m8	176	130	53	182		113	113	1	17		0
Internal Link Dist (ft)		526			460			336				78
Turn Bay Length (ft)	80			120					195			
Base Capacity (vph)	403	2000	1006	435	1993		316	319	355	205		454
Starvation Cap Reductn	0	0	0	0	0		0	0	0	0		0
Spillback Cap Reductn	0	0	0	0	0		0	0	0	0		0
Storage Cap Reductn	0	0	0	0	0		0	0	0	0		0
Reduced v/c Ratio	0.03	0.28	0.26	0.15	0.31		0.25	0.25	0.10	0.03		0.03

Intersection Summary

Area Type:	Other
Cycle Length:	138
Actuated Cycle Length:	138
Offset:	43 (31%), Referenced to phase 2:EBTL, Start of Yellow
Natural Cycle:	85
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.31
Intersection Signal Delay:	15.2
Intersection LOS:	B
Intersection Capacity Utilization:	44.6%
ICU Level of Service:	A
Analysis Period (min):	15
m Volume for 95th percentile queue is metered by upstream signal.	

Splits and Phases: 4: Printers Pkwy & Pikes Peak Ave



Lanes, Volumes, Timings  
12: Union Blvd & Parkside Dr



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	45	70	756	180	250	508
Future Volume (vph)	45	70	756	180	250	508
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150	0		0	135	
Storage Lanes	1	1		0	1	
Taper Length (ft)	150				90	
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	0.95
Frt		0.850	0.971			
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1593	1425	3093	0	1593	3185
Flt Permitted	0.950				0.235	
Satd. Flow (perm)	1593	1425	3093	0	394	3185
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		76	39			
Link Speed (mph)	30		35			35
Link Distance (ft)	621		648			477
Travel Time (s)	14.1		12.6			9.3
Peak Hour Factor	0.83	0.92	0.93	0.93	0.93	0.93
Adj. Flow (vph)	54	76	813	194	269	546
Shared Lane Traffic (%)						
Lane Group Flow (vph)	54	76	1007	0	269	546
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		12			12
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane	Yes		Yes			Yes
Headway Factor	1.14	1.14	1.14	1.14	1.14	1.14
Turning Speed (mph)	15	9		9	15	
Number of Detectors	1	1	2		1	2
Detector Template	Left	Right	Thru		Left	Thru
Leading Detector (ft)	20	20	100		20	100
Trailing Detector (ft)	0	0	0		0	0
Detector 1 Position(ft)	0	0	0		0	0
Detector 1 Size(ft)	20	20	6		20	6
Detector 1 Type	CI+Ex	CI+Ex	CI+Ex		CI+Ex	CI+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0		0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0		0.0	0.0
Detector 1 Delay (s)	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			CI+Ex			CI+Ex
Detector 2 Channel						
Detector 2 Extend (s)			0.0			0.0
Turn Type	Prot	Perm	NA		pm+pt	NA
Protected Phases	8		2		1	6
Permitted Phases		8			6	

Lanes, Volumes, Timings  
12: Union Blvd & Parkside Dr

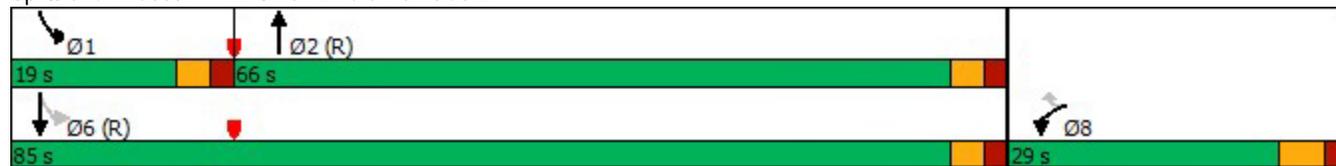


Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Detector Phase	8	8	2		1	6
Switch Phase						
Minimum Initial (s)	8.0	8.0	20.0		4.0	20.0
Minimum Split (s)	28.0	28.0	27.0		9.5	25.0
Total Split (s)	29.0	29.0	66.0		19.0	85.0
Total Split (%)	25.4%	25.4%	57.9%		16.7%	74.6%
Maximum Green (s)	23.0	23.0	61.0		14.0	80.0
Yellow Time (s)	4.0	4.0	3.0		3.0	3.0
All-Red Time (s)	2.0	2.0	2.0		2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	6.0	6.0	5.0		5.0	5.0
Lead/Lag			Lag		Lead	
Lead-Lag Optimize?			Yes		Yes	
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Recall Mode	None	None	C-Max		None	C-Max
Walk Time (s)	7.0	7.0	7.0			
Flash Dont Walk (s)	15.0	15.0	15.0			
Pedestrian Calls (#/hr)	0	0	0			
Act Effect Green (s)	9.8	9.8	80.2		96.0	97.0
Actuated g/C Ratio	0.09	0.09	0.70		0.84	0.85
v/c Ratio	0.40	0.40	0.46		0.60	0.20
Control Delay	57.3	17.1	9.4		8.3	2.4
Queue Delay	0.0	0.0	0.0		0.0	0.0
Total Delay	57.3	17.1	9.4		8.3	2.4
LOS	E	B	A		A	A
Approach Delay	33.8		9.4			4.3
Approach LOS	C		A			A
Queue Length 50th (ft)	38	0	150		32	34
Queue Length 95th (ft)	71	45	267		62	57
Internal Link Dist (ft)	541		568			397
Turn Bay Length (ft)	150				135	
Base Capacity (vph)	321	348	2188		486	2710
Starvation Cap Reductn	0	0	0		0	0
Spillback Cap Reductn	0	0	0		0	0
Storage Cap Reductn	0	0	0		0	0
Reduced v/c Ratio	0.17	0.22	0.46		0.55	0.20

Intersection Summary

Area Type:	CBD
Cycle Length:	114
Actuated Cycle Length:	114
Offset:	0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Green
Natural Cycle:	80
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.60
Intersection Signal Delay:	8.9
Intersection LOS:	A
Intersection Capacity Utilization:	65.0%
ICU Level of Service:	C
Analysis Period (min):	15

Splits and Phases: 12: Union Blvd & Parkside Dr



Lanes, Volumes, Timings  
15: Union Blvd & Platte Ave

2044 Background + Site  
AM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	100	500	55	182	1035	65	70	733	117	90	802	80
Future Volume (vph)	100	500	55	182	1035	65	70	733	117	90	802	80
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	170		35	150		0	215		115	305		0
Storage Lanes	1		1	1		1	1		1	1		0
Taper Length (ft)	120			65			200			75		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.95
Frt			0.850			0.850			0.850		0.986	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	3539	1583	1770	3490	0
Flt Permitted	0.099			0.359			0.119			0.179		
Satd. Flow (perm)	184	3539	1583	669	3539	1583	222	3539	1583	333	3490	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			124			124			124			10
Link Speed (mph)		35			35			35			35	
Link Distance (ft)		452			419			1555			508	
Travel Time (s)		8.8			8.2			30.3			9.9	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	108	538	59	196	1113	70	75	788	126	97	862	86
Shared Lane Traffic (%)												
Lane Group Flow (vph)	108	538	59	196	1113	70	75	788	126	97	948	0
Enter Blocked Intersection	No	No	No	No	No	No						
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane								Yes				
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	60		60	60		60	60		60	60		60
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0	0	
Detector 1 Size(ft)	20	6	20	20	6	20	20	6	20	20	6	
Detector 1 Type	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+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	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	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	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		CI+Ex			CI+Ex			CI+Ex			CI+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2		2	6		6	4		4	8		

Lanes, Volumes, Timings  
15: Union Blvd & Platte Ave

2044 Background + Site  
AM



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	5	2	2	1	6	6	7	4	4	3	8	
Switch Phase												
Minimum Initial (s)	4.0	6.0	6.0	4.0	6.0	6.0	4.0	4.0	4.0	4.0	4.0	
Minimum Split (s)	9.0	35.0	35.0	9.0	35.0	35.0	9.0	37.0	37.0	9.0	37.0	
Total Split (s)	12.0	45.0	45.0	12.0	45.0	45.0	12.0	45.0	45.0	12.0	45.0	
Total Split (%)	10.5%	39.5%	39.5%	10.5%	39.5%	39.5%	10.5%	39.5%	39.5%	10.5%	39.5%	
Maximum Green (s)	7.0	39.0	39.0	7.0	39.0	39.0	7.0	39.0	39.0	7.0	39.0	
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.0	6.0	6.0	5.0	6.0	6.0	5.0	6.0	6.0	5.0	6.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes											
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None	None	
Walk Time (s)		7.0	7.0		7.0	7.0		7.0	7.0		7.0	
Flash Dont Walk (s)		22.0	22.0		22.0	22.0		24.0	24.0		24.0	
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	
Act Effct Green (s)	50.0	41.6	41.6	51.7	42.5	42.5	43.0	35.2	35.2	44.2	37.6	
Actuated g/C Ratio	0.44	0.36	0.36	0.45	0.37	0.37	0.38	0.31	0.31	0.39	0.33	
v/c Ratio	0.59	0.42	0.09	0.51	0.84	0.10	0.43	0.72	0.22	0.45	0.82	
Control Delay	32.5	29.1	0.3	24.7	41.0	0.7	26.2	38.7	5.8	25.8	41.5	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	32.5	29.1	0.3	24.7	41.0	0.7	26.2	38.7	5.8	25.8	41.5	
LOS	C	C	A	C	D	A	C	D	A	C	D	
Approach Delay		27.2			36.7			33.6			40.1	
Approach LOS		C			D			C			D	
Queue Length 50th (ft)	44	160	0	84	410	0	31	260	1	41	330	
Queue Length 95th (ft)	#98	211	0	137	#542	4	59	324	42	73	406	
Internal Link Dist (ft)		372			339			1475			428	
Turn Bay Length (ft)	170		35	150			215		115	305		
Base Capacity (vph)	184	1291	656	383	1318	667	179	1210	623	217	1200	
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.59	0.42	0.09	0.51	0.84	0.10	0.42	0.65	0.20	0.45	0.79	

Intersection Summary

Area Type: Other  
 Cycle Length: 114  
 Actuated Cycle Length: 114  
 Offset: 12 (11%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green  
 Natural Cycle: 90  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.84  
 Intersection Signal Delay: 35.2  
 Intersection LOS: D  
 Intersection Capacity Utilization 81.1%  
 ICU Level of Service D  
 Analysis Period (min) 15  
 # 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 15: Union Blvd & Platte Ave



Lanes, Volumes, Timings  
2: Bonfoy Ave & Pikes Peak Ave

2044 Background + Site  
AM



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	10	694	270	79	703	10	117	2	67	15	6	15
Future Volume (vph)	10	694	270	79	703	10	117	2	67	15	6	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	50		0	120		0	0		150	0		0
Storage Lanes	1		0	1		0	0		1	0		0
Taper Length (ft)	50			140			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frts		0.958			0.998				0.850		0.944	
Flt Protected	0.950			0.950				0.953			0.980	
Satd. Flow (prot)	1770	3391	0	1770	3532	0	0	1775	1583	0	1723	0
Flt Permitted	0.950			0.950				0.953			0.980	
Satd. Flow (perm)	1770	3391	0	1770	3532	0	0	1775	1583	0	1723	0
Link Speed (mph)		35			35			25			25	
Link Distance (ft)		409			802			640			339	
Travel Time (s)		8.0			15.6			17.5			9.2	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.87	0.87	0.87	0.78	0.78	0.78
Adj. Flow (vph)	11	746	290	85	756	11	134	2	77	19	8	19
Shared Lane Traffic (%)												
Lane Group Flow (vph)	11	1036	0	85	767	0	0	136	77	0	46	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane		Yes			Yes							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	60		60	60		60	60		60	60		60
Sign Control		Free			Free			Stop			Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	55.4%
ICU Level of Service	B
Analysis Period (min)	15

Intersection						
Int Delay, s/veh	0.9					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	Y		Y	↑↑	↑↑	Y
Traffic Vol, veh/h	58	25	25	841	763	91
Future Vol, veh/h	58	25	25	841	763	91
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	60	-	-	175
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	83	83	93	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	70	30	27	904	820	98

Major/Minor	Minor2	Major1		Major2	
Conflicting Flow All	1326	410	918	0	0
Stage 1	820	-	-	-	-
Stage 2	506	-	-	-	-
Critical Hdwy	6.84	6.94	4.14	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.22	-	-
Pot Cap-1 Maneuver	*147	*765	1095	-	-
Stage 1	*722	-	-	-	-
Stage 2	*710	-	-	-	-
Platoon blocked, %		1	1	-	-
Mov Cap-1 Maneuver	*143	*765	1095	-	-
Mov Cap-2 Maneuver	*388	-	-	-	-
Stage 1	*704	-	-	-	-
Stage 2	*710	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	15.1	0.2	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1095	-	456	-	-
HCM Lane V/C Ratio	0.025	-	0.219	-	-
HCM Control Delay (s)	8.4	-	15.1	-	-
HCM Lane LOS	A	-	C	-	-
HCM 95th %tile Q(veh)	0.1	-	0.8	-	-

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

Intersection						
Int Delay, s/veh	1.3					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	46	107	853	46	54	804
Future Vol, veh/h	46	107	853	46	54	804
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	150	0	-	-	175	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	87	87	93	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	53	123	917	49	58	865

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	1491	483	0	0	966	0
Stage 1	942	-	-	-	-	-
Stage 2	549	-	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	4.14	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	2.22	-
Pot Cap-1 Maneuver	*114	*752	-	-	1060	-
Stage 1	*681	-	-	-	-	-
Stage 2	*722	-	-	-	-	-
Platoon blocked, %		1	-	-	1	-
Mov Cap-1 Maneuver	*108	*752	-	-	1060	-
Mov Cap-2 Maneuver	*360	-	-	-	-	-
Stage 1	*681	-	-	-	-	-
Stage 2	*682	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	12.5	0	0.5
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	360	752	1060
HCM Lane V/C Ratio	-	-	0.147	0.164	0.055
HCM Control Delay (s)	-	-	16.7	10.7	8.6
HCM Lane LOS	-	-	C	B	A
HCM 95th %tile Q(veh)	-	-	0.5	0.6	0.2

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

Lanes, Volumes, Timings  
1: Union Blvd & Pikes Peak Ave

2044 Background + Site  
PM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	220	734	158	128	627	198	218	690	126	166	771	220
Future Volume (vph)	220	734	158	128	627	198	218	690	126	166	771	220
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	300		125	150		0	500		35	125		0
Storage Lanes	1		1	1		0	1		1	1		0
Taper Length (ft)	50			50			90			90		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	0.95	1.00	0.95	1.00	1.00	0.95	0.95
Frt			0.850		0.964				0.850		0.967	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3539	1583	1770	3412	0	1770	3539	1583	1770	3422	0
Flt Permitted	0.103			0.206			0.087			0.232		
Satd. Flow (perm)	192	3539	1583	384	3412	0	162	3539	1583	432	3422	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			103		31				103		28	
Link Speed (mph)		35			35			35			35	
Link Distance (ft)		871			409			841			1555	
Travel Time (s)		17.0			8.0			16.4			30.3	
Peak Hour Factor	0.95	0.95	0.95	0.93	0.93	0.93	0.95	0.95	0.95	0.93	0.93	0.93
Adj. Flow (vph)	232	773	166	138	674	213	229	726	133	178	829	237
Shared Lane Traffic (%)												
Lane Group Flow (vph)	232	773	166	138	887	0	229	726	133	178	1066	0
Enter Blocked Intersection	No	No	No	No	No	No						
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane		Yes			Yes						Yes	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	2	1	1	2	
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100	20	20	100		20	100	20	20	100	
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	6	20	20	6	
Detector 1 Type	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex		CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+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			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		CI+Ex			CI+Ex			CI+Ex			CI+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2		2	6			4		4	8		

Lanes, Volumes, Timings  
1: Union Blvd & Pikes Peak Ave

2044 Background + Site  
PM



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	5	2	2	1	6		7	4	4	3	8	
Switch Phase												
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Minimum Split (s)	9.0	33.0	33.0	9.0	33.0		9.0	33.0	33.0	9.0	33.0	
Total Split (s)	20.0	48.0	48.0	20.0	48.0		20.0	50.0	50.0	20.0	50.0	
Total Split (%)	14.5%	34.8%	34.8%	14.5%	34.8%		14.5%	36.2%	36.2%	14.5%	36.2%	
Maximum Green (s)	15.0	42.0	42.0	15.0	42.0		15.0	44.0	44.0	15.0	44.0	
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0		3.0	4.0	4.0	3.0	4.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.0	6.0	6.0	5.0	6.0		5.0	6.0	6.0	5.0	6.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	C-Max	C-Max	None	C-Max		None	Max	Max	None	Max	
Walk Time (s)		7.0	7.0		7.0			7.0	7.0		7.0	
Flash Dont Walk (s)		20.0	20.0		20.0			20.0	20.0		20.0	
Pedestrian Calls (#/hr)		0	0		0			0	0		0	
Act Effect Green (s)	60.9	45.3	45.3	54.8	42.1		61.9	46.0	46.0	58.0	44.0	
Actuated g/C Ratio	0.44	0.33	0.33	0.40	0.31		0.45	0.33	0.33	0.42	0.32	
v/c Ratio	0.91	0.67	0.28	0.51	0.83		0.93	0.62	0.22	0.58	0.96	
Control Delay	71.2	43.7	15.3	29.4	34.7		78.2	41.6	10.8	40.1	59.1	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay	71.2	43.7	15.3	29.4	34.7		78.2	41.6	10.8	40.1	59.1	
LOS	E	D	B	C	C		E	D	B	D	E	
Approach Delay		45.1			34.0			45.6			56.4	
Approach LOS		D			C			D			E	
Queue Length 50th (ft)	146	313	40	52	203		154	288	18	91	294	
Queue Length 95th (ft)	#313	401	102	114	240		#319	363	68	m166	#607	
Internal Link Dist (ft)		791			329			761			1475	
Turn Bay Length (ft)	300		125	150			500		35	125		
Base Capacity (vph)	256	1161	588	312	1063		247	1180	596	333	1110	
Starvation Cap Reductn	0	0	0	0	0		0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0		0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0		0	0	0	0	0	
Reduced v/c Ratio	0.91	0.67	0.28	0.44	0.83		0.93	0.62	0.22	0.53	0.96	

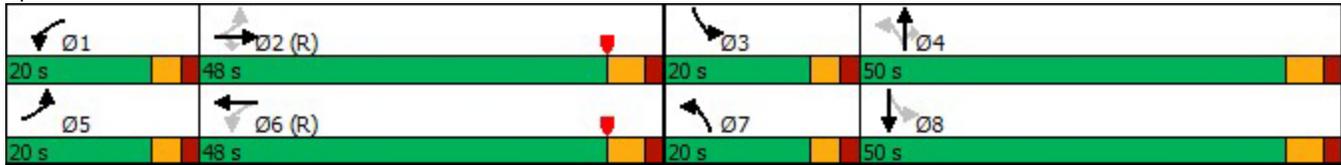
Intersection Summary

Area Type:	Other
Cycle Length:	138
Actuated Cycle Length:	138
Offset:	0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow, Master Intersection
Natural Cycle:	85
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.96
Intersection Signal Delay:	45.8
Intersection LOS:	D
Intersection Capacity Utilization:	94.6%
ICU Level of Service:	F
Analysis Period (min):	15
# 95th percentile volume exceeds capacity, queue may be longer.	

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: Union Blvd & Pikes Peak Ave



Lanes, Volumes, Timings  
3: Iowa Ave & Pikes Peak Ave

2044 Background + Site  
PM



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	34	758	72	51	639	20	131	81	96	25	92	34
Future Volume (vph)	34	758	72	51	639	20	131	81	96	25	92	34
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	120		0	120		0	0		150	0		0
Storage Lanes	1		0	1		0	1		1	1		0
Taper Length (ft)	180			150			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frnt		0.987			0.995			0.919			0.960	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3493	0	1770	3522	0	1770	1712	0	1770	1788	0
Flt Permitted	0.304			0.224			0.511			0.637		
Satd. Flow (perm)	566	3493	0	417	3522	0	952	1712	0	1187	1788	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		10			3			36			11	
Link Speed (mph)		35			35			25			25	
Link Distance (ft)		802			606			553			364	
Travel Time (s)		15.6			11.8			15.1			9.9	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.92	0.92	0.92	0.87	0.87	0.87
Adj. Flow (vph)	37	815	77	55	687	22	142	88	104	29	106	39
Shared Lane Traffic (%)												
Lane Group Flow (vph)	37	892	0	55	709	0	142	192	0	29	145	0
Enter Blocked Intersection	No											
Lane Alignment	Left	Left	Right									
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane		Yes			Yes							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru										
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	CI+Ex	CI+Ex										
Detector 1 Channel												
Detector 1 Extend (s)	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	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		CI+Ex			CI+Ex			CI+Ex			CI+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA										
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2			6			4			8		

Lanes, Volumes, Timings  
3: Iowa Ave & Pikes Peak Ave

2044 Background + Site  
PM

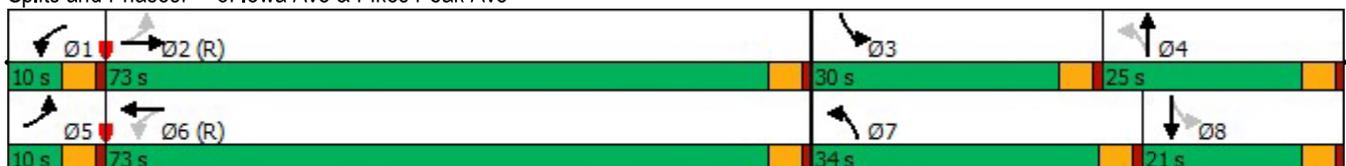


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	5	2		1	6		7	4		3	8	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	9.5	22.5		9.5	22.5		22.5	22.5		9.5	9.5	
Total Split (s)	10.0	73.0		10.0	73.0		34.0	25.0		30.0	21.0	
Total Split (%)	7.2%	52.9%		7.2%	52.9%		24.6%	18.1%		21.7%	15.2%	
Maximum Green (s)	5.5	68.5		5.5	68.5		29.5	20.5		25.5	16.5	
Yellow Time (s)	3.5	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	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.5	4.5		4.5	4.5		4.5	4.5		4.5	4.5	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		None	C-Max		None	Max		None	Max	
Act Effect Green (s)	74.9	70.5		74.9	70.5		50.5	43.2		39.8	32.8	
Actuated g/C Ratio	0.54	0.51		0.54	0.51		0.37	0.31		0.29	0.24	
v/c Ratio	0.10	0.50		0.20	0.39		0.33	0.34		0.08	0.33	
Control Delay	9.5	12.8		8.7	13.6		32.6	32.9		29.4	43.8	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	9.5	12.8		8.7	13.6		32.6	32.9		29.4	43.8	
LOS	A	B		A	B		C	C		C	D	
Approach Delay		12.6			13.3			32.8			41.4	
Approach LOS		B			B			C			D	
Queue Length 50th (ft)	8	131		15	122		87	112		17	100	
Queue Length 95th (ft)	m15	164		30	224		141	187		38	166	
Internal Link Dist (ft)		722			526			473			284	
Turn Bay Length (ft)	120			120								
Base Capacity (vph)	355	1789		280	1800		523	560		542	433	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.10	0.50		0.20	0.39		0.27	0.34		0.05	0.33	

Intersection Summary

Area Type: Other  
 Cycle Length: 138  
 Actuated Cycle Length: 138  
 Offset: 88 (64%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green  
 Natural Cycle: 70  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.50  
 Intersection Signal Delay: 18.2  
 Intersection LOS: B  
 Intersection Capacity Utilization 56.7%  
 ICU Level of Service B  
 Analysis Period (min) 15  
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 3: Iowa Ave & Pikes Peak Ave



Lanes, Volumes, Timings  
4: Printers Pkwy & Pikes Peak Ave

2044 Background + Site  
PM



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	20	644	200	30	525	30	165	10	55	10	5	13
Future Volume (vph)	20	644	200	30	525	30	165	10	55	10	5	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	80		0	120		0	0		195	0		0
Storage Lanes	1		1	1		0	1		1	1		1
Taper Length (ft)	150			90			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00
Frt			0.850		0.992				0.850			0.850
Flt Protected	0.950			0.950			0.950	0.957		0.950		
Satd. Flow (prot)	1770	3539	1583	1770	3511	0	1681	1694	1583	1770	1863	1583
Flt Permitted	0.385			0.341			0.950	0.957		0.950		
Satd. Flow (perm)	717	3539	1583	635	3511	0	1681	1694	1583	1770	1863	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			215		7				71			71
Link Speed (mph)		35			35			35				35
Link Distance (ft)		606			540			416				158
Travel Time (s)		11.8			10.5			8.1				3.1
Peak Hour Factor	0.93	0.93	0.93	0.92	0.92	0.92	0.87	0.87	0.87	0.78	0.78	0.78
Adj. Flow (vph)	22	692	215	33	571	33	190	11	63	13	6	17
Shared Lane Traffic (%)							47%					
Lane Group Flow (vph)	22	692	215	33	604	0	101	100	63	13	6	17
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	R NA	Left	Left	R NA	Left	Left	R NA	L NA	Left	R NA
Median Width(ft)		12			12			12				12
Link Offset(ft)		0			0			-10				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane		Yes			Yes							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		35	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100		20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0		0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0		0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20	20	6		20	6	20	20	6	20
Detector 1 Type	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex		CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+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	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	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	0.0
Detector 2 Position(ft)		94			94			94				94
Detector 2 Size(ft)		6			6			6				6
Detector 2 Type		CI+Ex			CI+Ex			CI+Ex				CI+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				0.0
Turn Type	Perm	NA	Perm	Perm	NA		Split	NA	Perm	Split	NA	Perm
Protected Phases		2			6		8	8		4	4	
Permitted Phases	2		2	6					8			4

Lanes, Volumes, Timings  
4: Printers Pkwy & Pikes Peak Ave

2044 Background + Site  
PM



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	2	2	2	6	6		8	8	8	4	4	4
Switch Phase												
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	30.0	30.0	30.0	30.0	30.0		31.0	31.0	31.0	22.0	22.0	22.0
Total Split (s)	83.0	83.0	83.0	83.0	83.0		32.0	32.0	32.0	23.0	23.0	23.0
Total Split (%)	60.1%	60.1%	60.1%	60.1%	60.1%		23.2%	23.2%	23.2%	16.7%	16.7%	16.7%
Maximum Green (s)	77.0	77.0	77.0	77.0	77.0		26.0	26.0	26.0	17.0	17.0	17.0
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0		6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	C-Max	C-Max	C-Max	C-Max	C-Max		Max	Max	Max	Max	Max	Max
Walk Time (s)	7.0	7.0	7.0	7.0	7.0		7.0	7.0	7.0			
Flash Dont Walk (s)	17.0	17.0	17.0	17.0	17.0		19.0	19.0	19.0			
Pedestrian Calls (#/hr)	0	0	0	0	0		0	0	0			
Act Effect Green (s)	77.0	77.0	77.0	77.0	77.0		26.0	26.0	26.0	17.0	17.0	17.0
Actuated g/C Ratio	0.56	0.56	0.56	0.56	0.56		0.19	0.19	0.19	0.12	0.12	0.12
v/c Ratio	0.06	0.35	0.22	0.09	0.31		0.32	0.31	0.18	0.06	0.03	0.07
Control Delay	11.2	10.4	1.6	15.2	16.6		51.6	51.5	9.5	54.4	53.8	0.5
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	11.2	10.4	1.6	15.2	16.6		51.6	51.5	9.5	54.4	53.8	0.5
LOS	B	B	A	B	B		D	D	A	D	D	A
Approach Delay		8.4			16.5			41.5			28.8	
Approach LOS		A			B			D			C	
Queue Length 50th (ft)	4	66	1	13	144		83	82	0	11	5	0
Queue Length 95th (ft)	m13	128	20	32	183		137	136	32	28	17	0
Internal Link Dist (ft)		526			460			336			78	
Turn Bay Length (ft)	80			120					195			
Base Capacity (vph)	400	1974	978	354	1962		316	319	355	218	229	257
Starvation Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.06	0.35	0.22	0.09	0.31		0.32	0.31	0.18	0.06	0.03	0.07

Intersection Summary

Area Type:	Other
Cycle Length:	138
Actuated Cycle Length:	138
Offset:	18 (13%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow
Natural Cycle:	85
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.35
Intersection Signal Delay:	16.3
Intersection LOS:	B
Intersection Capacity Utilization:	46.4%
ICU Level of Service:	A
Analysis Period (min):	15
m Volume for 95th percentile queue is metered by upstream signal.	

Lanes, Volumes, Timings  
 4: Printers Pkwy & Pikes Peak Ave

2044 Background + Site  
 PM

Splits and Phases: 4: Printers Pkwy & Pikes Peak Ave



Lanes, Volumes, Timings  
12: Union Blvd & Parkside Dr



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	115	280	692	35	40	1006
Future Volume (vph)	115	280	692	35	40	1006
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150	0		0	135	
Storage Lanes	1	1		0	1	
Taper Length (ft)	150				90	
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	0.95
Fr <sub>t</sub>		0.850	0.993			
Fl <sub>t</sub> Protected	0.950				0.950	
Satd. Flow (prot)	1593	1425	3163	0	1593	3185
Fl <sub>t</sub> Permitted	0.950				0.311	
Satd. Flow (perm)	1593	1425	3163	0	521	3185
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		304	7			
Link Speed (mph)	30		35			35
Link Distance (ft)	621		648			477
Travel Time (s)	14.1		12.6			9.3
Peak Hour Factor	0.92	0.92	0.93	0.93	0.93	0.93
Adj. Flow (vph)	125	304	744	38	43	1082
Shared Lane Traffic (%)						
Lane Group Flow (vph)	125	304	782	0	43	1082
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		12			12
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane	Yes		Yes			Yes
Headway Factor	1.14	1.14	1.14	1.14	1.14	1.14
Turning Speed (mph)	15	9		9	15	
Number of Detectors	1	1	2		1	2
Detector Template	Left	Right	Thru		Left	Thru
Leading Detector (ft)	20	20	100		20	100
Trailing Detector (ft)	0	0	0		0	0
Detector 1 Position(ft)	0	0	0		0	0
Detector 1 Size(ft)	20	20	6		20	6
Detector 1 Type	CI+Ex	CI+Ex	CI+Ex		CI+Ex	CI+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0		0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0		0.0	0.0
Detector 1 Delay (s)	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			CI+Ex			CI+Ex
Detector 2 Channel						
Detector 2 Extend (s)			0.0			0.0
Turn Type	Prot	Perm	NA		pm+pt	NA
Protected Phases	8		2		1	6
Permitted Phases		8			6	

Lanes, Volumes, Timings  
12: Union Blvd & Parkside Dr



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Detector Phase	8	8	2		1	6
Switch Phase						
Minimum Initial (s)	8.0	8.0	20.0		4.0	20.0
Minimum Split (s)	28.0	28.0	27.0		9.5	25.0
Total Split (s)	29.0	29.0	66.0		19.0	85.0
Total Split (%)	25.4%	25.4%	57.9%		16.7%	74.6%
Maximum Green (s)	23.0	23.0	61.0		14.0	80.0
Yellow Time (s)	4.0	4.0	3.0		3.0	3.0
All-Red Time (s)	2.0	2.0	2.0		2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	6.0	6.0	5.0		5.0	5.0
Lead/Lag			Lag		Lead	
Lead-Lag Optimize?			Yes		Yes	
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Recall Mode	None	None	Max		None	Max
Walk Time (s)	7.0	7.0	7.0			
Flash Dont Walk (s)	15.0	15.0	15.0			
Pedestrian Calls (#/hr)	0	0	0			
Act Effect Green (s)	13.4	13.4	73.3		80.1	80.1
Actuated g/C Ratio	0.13	0.13	0.70		0.77	0.77
v/c Ratio	0.61	0.68	0.35		0.09	0.44
Control Delay	56.0	13.1	8.0		4.0	5.4
Queue Delay	0.0	0.0	0.0		0.0	0.0
Total Delay	56.0	13.1	8.0		4.0	5.4
LOS	E	B	A		A	A
Approach Delay	25.6		8.0			5.3
Approach LOS	C		A			A
Queue Length 50th (ft)	80	0	110		6	110
Queue Length 95th (ft)	140	80	177		17	183
Internal Link Dist (ft)	541		568			397
Turn Bay Length (ft)	150				135	
Base Capacity (vph)	350	550	2219		542	2440
Starvation Cap Reductn	0	0	0		0	0
Spillback Cap Reductn	0	0	0		0	0
Storage Cap Reductn	0	0	0		0	0
Reduced v/c Ratio	0.36	0.55	0.35		0.08	0.44

Intersection Summary

Area Type:	CBD
Cycle Length:	114
Actuated Cycle Length:	104.5
Natural Cycle:	65
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	0.68
Intersection Signal Delay:	9.9
Intersection LOS:	A
Intersection Capacity Utilization:	50.9%
ICU Level of Service:	A
Analysis Period (min):	15

Splits and Phases: 12: Union Blvd & Parkside Dr



Lanes, Volumes, Timings  
15: Union Blvd & Platte Ave

2044 Background + Site  
PM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	240	995	45	140	685	65	115	862	149	114	823	70
Future Volume (vph)	240	995	45	140	685	65	115	862	149	114	823	70
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	170		35	150		0	215		115	305		0
Storage Lanes	1		1	1		1	1		1	1		0
Taper Length (ft)	120			65			200			75		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.95
Frt			0.850			0.850			0.850		0.988	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	3539	1583	1770	3497	0
Flt Permitted	0.181			0.091			0.119			0.143		
Satd. Flow (perm)	337	3539	1583	170	3539	1583	222	3539	1583	266	3497	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			83			83			83			7
Link Speed (mph)		35			35			35			35	
Link Distance (ft)		452			419			1555			508	
Travel Time (s)		8.8			8.2			30.3			9.9	
Peak Hour Factor	0.95	0.95	0.95	0.93	0.93	0.93	0.95	0.95	0.95	0.93	0.93	0.93
Adj. Flow (vph)	253	1047	47	151	737	70	121	907	157	123	885	75
Shared Lane Traffic (%)												
Lane Group Flow (vph)	253	1047	47	151	737	70	121	907	157	123	960	0
Enter Blocked Intersection	No	No	No	No	No	No						
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane								Yes				
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0	0	
Detector 1 Size(ft)	20	6	20	20	6	20	20	6	20	20	6	
Detector 1 Type	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+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	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	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	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		CI+Ex			CI+Ex			CI+Ex			CI+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2		2	6		6	4		4	8		



Splits and Phases: 15: Union Blvd & Platte Ave



Intersection												
Int Delay, s/veh	3.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↙	↕		↙	↕			↕	↗		↕	
Traffic Vol, veh/h	20	778	223	53	752	20	181	4	82	20	5	15
Future Vol, veh/h	20	778	223	53	752	20	181	4	82	20	5	15
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None									
Storage Length	50	-	-	120	-	-	-	-	150	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	93	93	93	92	92	92	78	78	78
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	22	837	240	57	809	22	197	4	89	26	6	19

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	831	0	0	1077	0	0	1523	1946	539	1399	2055	416
Stage 1	-	-	-	-	-	-	1001	1001	-	934	934	-
Stage 2	-	-	-	-	-	-	522	945	-	465	1121	-
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	1162	-	-	905	-	-	*443	187	*765	*443	134	*788
Stage 1	-	-	-	-	-	-	*575	534	-	*601	556	-
Stage 2	-	-	-	-	-	-	*742	548	-	*721	450	-
Platoon blocked, %	1	-	-	1	-	-	1	1	1	1	1	1
Mov Cap-1 Maneuver	1162	-	-	905	-	-	*389	171	*765	*360	123	*788
Mov Cap-2 Maneuver	-	-	-	-	-	-	*389	171	-	*360	123	-
Stage 1	-	-	-	-	-	-	*564	524	-	*590	521	-
Stage 2	-	-	-	-	-	-	*670	514	-	*620	442	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.2			0.6			20.3			17.2		
HCM LOS							C			C		

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	379	765	1162	-	-	905	-	-	347
HCM Lane V/C Ratio	0.531	0.117	0.019	-	-	0.063	-	-	0.148
HCM Control Delay (s)	24.7	10.3	8.2	-	-	9.2	-	-	17.2
HCM Lane LOS	C	B	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	3	0.4	0.1	-	-	0.2	-	-	0.5

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

Intersection						
Int Delay, s/veh	1.1					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	Y		Y	↑↑	↑↑	Y
Traffic Vol, veh/h	48	50	50	922	996	49
Future Vol, veh/h	48	50	50	922	996	49
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	60	-	-	175
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	83	83	95	95	93	93
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	58	60	53	971	1071	53

Major/Minor	Minor2	Major1		Major2	
Conflicting Flow All	1663	536	1124	0	0
Stage 1	1071	-	-	-	-
Stage 2	592	-	-	-	-
Critical Hdwy	6.84	6.94	4.14	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.22	-	-
Pot Cap-1 Maneuver	*185	*676	*1011	-	-
Stage 1	*638	-	-	-	-
Stage 2	*516	-	-	-	-
Platoon blocked, %	1	1	1	-	-
Mov Cap-1 Maneuver	*175	*676	*1011	-	-
Mov Cap-2 Maneuver	*333	-	-	-	-
Stage 1	*605	-	-	-	-
Stage 2	*516	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	15.9	0.5	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	*1011	-	449	-	-
HCM Lane V/C Ratio	0.052	-	0.263	-	-
HCM Control Delay (s)	8.8	-	15.9	-	-
HCM Lane LOS	A	-	C	-	-
HCM 95th %tile Q(veh)	0.2	-	1	-	-

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

Intersection						
Int Delay, s/veh	2.5					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	85	108	927	43	98	968
Future Vol, veh/h	85	108	927	43	98	968
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	150	0	-	-	175	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	87	87	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	98	124	976	45	103	1019

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	1715	511	0	0	1021
Stage 1	999	-	-	-	-
Stage 2	716	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	4.14
Critical Hdwy Stg 1	5.84	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	2.22
Pot Cap-1 Maneuver	*164	508	-	-	675
Stage 1	*317	-	-	-	-
Stage 2	*638	-	-	-	-
Platoon blocked, %	1	-	-	-	-
Mov Cap-1 Maneuver	*139	508	-	-	675
Mov Cap-2 Maneuver	*239	-	-	-	-
Stage 1	*317	-	-	-	-
Stage 2	*540	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	21.3	0	1
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	239	508	675
HCM Lane V/C Ratio	-	-	0.409	0.244	0.153
HCM Control Delay (s)	-	-	30.1	14.4	11.3
HCM Lane LOS	-	-	D	B	B
HCM 95th %tile Q(veh)	-	-	1.9	1	0.5

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

# Queuing Reports

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**Intersection: 1: Union Blvd & Pikes Peak Ave, Interval #1**

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB	NB	NB	SB
Directions Served	L	T	T	R	L	T	TR	L	T	T	R	L
Maximum Queue (ft)	104	231	287	225	198	318	316	131	258	303	80	206
Average Queue (ft)	69	146	184	91	81	233	258	85	164	196	68	152
95th Queue (ft)	119	234	283	214	201	329	341	145	280	326	100	236
Link Distance (ft)		825	825			324	324		748	748		
Upstream Blk Time (%)						1	1					
Queuing Penalty (veh)						2	4					
Storage Bay Dist (ft)	300			125	150			500			35	125
Storage Blk Time (%)			22	0	0	28			53	17		16
Queuing Penalty (veh)			38	1	0	16			77	48		42

**Intersection: 1: Union Blvd & Pikes Peak Ave, Interval #1**

Movement	SB	SB
Directions Served	T	TR
Maximum Queue (ft)	336	311
Average Queue (ft)	206	215
95th Queue (ft)	375	336
Link Distance (ft)	1451	1451
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)	15	
Queuing Penalty (veh)	29	

**Intersection: 1: Union Blvd & Pikes Peak Ave, Interval #2**

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB	NB	NB	SB
Directions Served	L	T	T	R	L	T	TR	L	T	T	R	L
Maximum Queue (ft)	110	212	280	225	138	286	314	153	263	308	80	214
Average Queue (ft)	62	145	190	71	56	211	233	85	157	192	64	141
95th Queue (ft)	108	223	275	169	152	305	330	152	265	314	101	243
Link Distance (ft)		825	825			324	324		748	748		
Upstream Blk Time (%)						0	1					
Queuing Penalty (veh)						1	3					
Storage Bay Dist (ft)	300			125	150			500			35	125
Storage Blk Time (%)			26	0		26				46	16	6
Queuing Penalty (veh)			44	1		15				67	44	16

**Intersection: 1: Union Blvd & Pikes Peak Ave, Interval #2**

Movement	SB	SB
Directions Served	T	TR
Maximum Queue (ft)	339	339
Average Queue (ft)	198	225
95th Queue (ft)	347	364
Link Distance (ft)	1451	1451
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)	27	
Queuing Penalty (veh)	52	

**Intersection: 1: Union Blvd & Pikes Peak Ave, Interval #3**

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB	NB	NB	SB
Directions Served	L	T	T	R	L	T	TR	L	T	T	R	L
Maximum Queue (ft)	130	238	307	225	178	324	330	155	309	342	80	214
Average Queue (ft)	82	170	217	107	89	235	253	96	215	244	69	150
95th Queue (ft)	149	260	316	247	204	336	350	163	336	376	99	254
Link Distance (ft)		825	825			324	324		748	748		
Upstream Blk Time (%)						2	3					
Queuing Penalty (veh)						7	11					
Storage Bay Dist (ft)	300			125	150			500			35	125
Storage Blk Time (%)			29	1	0	26			55	20		13
Queuing Penalty (veh)			54	2	0	17			89	62		38

**Intersection: 1: Union Blvd & Pikes Peak Ave, Interval #3**

Movement	SB	SB
Directions Served	T	TR
Maximum Queue (ft)	338	343
Average Queue (ft)	229	244
95th Queue (ft)	358	356
Link Distance (ft)	1451	1451
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)	37	
Queuing Penalty (veh)	79	

**Intersection: 1: Union Blvd & Pikes Peak Ave, Interval #4**

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB	NB	NB	SB
Directions Served	L	T	T	R	L	T	TR	L	T	T	R	L
Maximum Queue (ft)	121	242	290	195	173	280	309	179	284	286	80	214
Average Queue (ft)	74	152	189	80	53	215	230	104	179	206	66	156
95th Queue (ft)	128	263	303	194	134	303	329	211	292	309	100	251
Link Distance (ft)		825	825			324	324		748	748		
Upstream Blk Time (%)						0	1					
Queuing Penalty (veh)						0	3					
Storage Bay Dist (ft)	300			125	150			500			35	125
Storage Blk Time (%)		0	24	0		27			47	20		11
Queuing Penalty (veh)		0	42	0		16			69	57		29

**Intersection: 1: Union Blvd & Pikes Peak Ave, Interval #4**

Movement	SB	SB
Directions Served	T	TR
Maximum Queue (ft)	390	412
Average Queue (ft)	215	225
95th Queue (ft)	399	404
Link Distance (ft)	1451	1451
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)	25	
Queuing Penalty (veh)	49	

**Intersection: 1: Union Blvd & Pikes Peak Ave, All Intervals**

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB	NB	NB	SB
Directions Served	L	T	T	R	L	T	TR	L	T	T	R	L
Maximum Queue (ft)	150	273	324	225	200	326	338	200	337	375	80	215
Average Queue (ft)	72	153	195	87	70	223	243	93	179	209	67	150
95th Queue (ft)	128	247	297	209	177	320	340	171	299	336	100	247
Link Distance (ft)		825	825			324	324		748	748		
Upstream Blk Time (%)						1	1					
Queuing Penalty (veh)						3	5					
Storage Bay Dist (ft)	300			125	150			500			35	125
Storage Blk Time (%)		0	25	0	0	26			50	18	12	
Queuing Penalty (veh)		0	44	1	0	16			76	53	31	

**Intersection: 1: Union Blvd & Pikes Peak Ave, All Intervals**

Movement	SB	SB
Directions Served	T	TR
Maximum Queue (ft)	417	444
Average Queue (ft)	212	227
95th Queue (ft)	372	369
Link Distance (ft)	1451	1451
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)	26	
Queuing Penalty (veh)	52	

**Intersection: 3: Iowa Ave & Pikes Peak Ave, Interval #1**

Movement	EB	EB	EB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	TR	L	T	TR	L	TR	L	TR
Maximum Queue (ft)	34	170	251	55	163	155	101	55	39	116
Average Queue (ft)	15	114	187	26	105	85	63	32	6	61
95th Queue (ft)	40	177	269	60	168	155	117	58	28	121
Link Distance (ft)		725	725		519	519	493		316	316
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)	120			120				150		
Storage Blk Time (%)		5			7					
Queuing Penalty (veh)		1			4					

**Intersection: 3: Iowa Ave & Pikes Peak Ave, Interval #2**

Movement	EB	EB	EB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	TR	L	T	TR	L	TR	L	TR
Maximum Queue (ft)	34	211	261	82	147	142	121	106	38	130
Average Queue (ft)	12	126	191	37	104	84	58	45	12	75
95th Queue (ft)	37	224	290	82	151	155	117	94	44	133
Link Distance (ft)		725	725		519	519	493		316	316
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)	120			120				150		
Storage Blk Time (%)		6		0	4		0	1		
Queuing Penalty (veh)		1		0	2		0	1		

**Intersection: 3: Iowa Ave & Pikes Peak Ave, Interval #3**

Movement	EB	EB	EB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	TR	L	T	TR	L	TR	L	TR
Maximum Queue (ft)	32	218	299	62	199	178	156	131	35	164
Average Queue (ft)	13	129	192	31	124	99	90	60	12	103
95th Queue (ft)	37	234	310	66	207	188	179	131	37	197
Link Distance (ft)		725	725		519	519	493		316	316
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)	120			120				150		
Storage Blk Time (%)		5			13		2	0		
Queuing Penalty (veh)		1			7		2	0		

**Intersection: 3: Iowa Ave & Pikes Peak Ave, Interval #4**

Movement	EB	EB	EB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	TR	L	T	TR	L	TR	L	TR
Maximum Queue (ft)	29	229	307	72	152	130	119	92	24	156
Average Queue (ft)	13	137	198	32	107	89	67	46	5	87
95th Queue (ft)	36	233	322	71	163	142	125	92	24	165
Link Distance (ft)		725	725		519	519	493		316	316
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)	120			120				150		
Storage Blk Time (%)		6		0	6		0	0		
Queuing Penalty (veh)		1		1	3		0	0		

**Intersection: 3: Iowa Ave & Pikes Peak Ave, All Intervals**

Movement	EB	EB	EB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	TR	L	T	TR	L	TR	L	TR
Maximum Queue (ft)	34	257	319	95	199	184	175	142	48	198
Average Queue (ft)	13	126	192	32	110	89	70	46	9	81
95th Queue (ft)	38	219	299	70	175	162	139	99	34	160
Link Distance (ft)		725	725		519	519	493		316	316
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)	120			120				150		
Storage Blk Time (%)		6		0	8		1	0		
Queuing Penalty (veh)		1		0	4		1	0		

**Intersection: 4: Printers Pkwy & Pikes Peak Ave, Interval #1**

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB
Directions Served	L	T	T	L	T	TR	L	LT	R	R
Maximum Queue (ft)	21	141	164	49	90	71	114	76	27	30
Average Queue (ft)	4	74	87	17	42	24	60	23	14	7
95th Queue (ft)	21	167	182	52	96	69	117	61	35	27
Link Distance (ft)		519	519		490	490	356	356		107
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)	80			120					195	
Storage Blk Time (%)		3			0					
Queuing Penalty (veh)		0			0					

**Intersection: 4: Printers Pkwy & Pikes Peak Ave, Interval #2**

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB
Directions Served	L	T	T	L	T	TR	L	LT	R	R
Maximum Queue (ft)	21	123	153	47	85	50	99	32	28	30
Average Queue (ft)	4	59	71	23	40	19	60	14	17	8
95th Queue (ft)	19	132	163	54	88	58	111	36	38	29
Link Distance (ft)		519	519		490	490	356	356		107
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)	80			120					195	
Storage Blk Time (%)		2			0					
Queuing Penalty (veh)		0			0					

**Intersection: 4: Printers Pkwy & Pikes Peak Ave, Interval #3**

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB
Directions Served	L	T	T	L	T	TR	L	LT	R	R
Maximum Queue (ft)	22	122	150	56	84	52	124	81	43	24
Average Queue (ft)	5	61	73	20	44	22	75	26	22	6
95th Queue (ft)	24	128	162	55	90	56	129	75	47	24
Link Distance (ft)		519	519		490	490	356	356		107
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)	80			120					195	
Storage Blk Time (%)		3			0					
Queuing Penalty (veh)		0			0					

**Intersection: 4: Printers Pkwy & Pikes Peak Ave, Interval #4**

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB
Directions Served	L	T	T	L	T	TR	L	LT	R	L	R
Maximum Queue (ft)	13	129	143	39	91	60	124	70	32	12	29
Average Queue (ft)	3	59	69	16	43	18	65	23	14	2	7
95th Queue (ft)	13	129	146	43	95	60	124	66	38	14	28
Link Distance (ft)		519	519		490	490	356	356		107	107
Upstream Blk Time (%)											
Queuing Penalty (veh)											
Storage Bay Dist (ft)	80			120					195		
Storage Blk Time (%)		2			0						
Queuing Penalty (veh)		0			0						

**Intersection: 4: Printers Pkwy & Pikes Peak Ave, All Intervals**

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB
Directions Served	L	T	T	L	T	TR	L	LT	R	L	R
Maximum Queue (ft)	35	173	196	66	111	81	144	106	43	12	30
Average Queue (ft)	4	63	75	19	42	21	65	21	17	1	7
95th Queue (ft)	20	140	164	51	92	61	121	62	40	7	27
Link Distance (ft)		519	519		490	490	356	356		107	107
Upstream Blk Time (%)											
Queuing Penalty (veh)											
Storage Bay Dist (ft)	80			120					195		
Storage Blk Time (%)		3			0						
Queuing Penalty (veh)		0			0						

**Intersection: 12: Union Blvd & Parkside Dr, Interval #1**

Movement	WB	WB	NB	NB	SB	SB	SB
Directions Served	L	R	T	TR	L	T	T
Maximum Queue (ft)	58	54	156	161	170	82	86
Average Queue (ft)	31	30	53	66	91	15	25
95th Queue (ft)	66	56	147	162	163	89	81
Link Distance (ft)		574	615	615		418	418
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)	150				135		
Storage Blk Time (%)					2	0	
Queuing Penalty (veh)					5	0	

**Intersection: 12: Union Blvd & Parkside Dr, Interval #2**

Movement	WB	WB	NB	NB	SB	SB	SB
Directions Served	L	R	T	TR	L	T	T
Maximum Queue (ft)	65	54	151	152	140	61	82
Average Queue (ft)	35	29	61	65	72	13	21
95th Queue (ft)	72	56	149	147	123	52	72
Link Distance (ft)		574	615	615		418	418
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)	150				135		
Storage Blk Time (%)					0		
Queuing Penalty (veh)					1		

**Intersection: 12: Union Blvd & Parkside Dr, Interval #3**

Movement	WB	WB	NB	NB	SB	SB	SB
Directions Served	L	R	T	TR	L	T	T
Maximum Queue (ft)	66	60	160	179	199	108	87
Average Queue (ft)	31	30	91	102	120	25	25
95th Queue (ft)	72	63	194	196	204	108	80
Link Distance (ft)		574	615	615		418	418
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)	150				135		
Storage Blk Time (%)					9		
Queuing Penalty (veh)					25		

**Intersection: 12: Union Blvd & Parkside Dr, Interval #4**

Movement	WB	WB	NB	NB	SB	SB	SB
Directions Served	L	R	T	TR	L	T	T
Maximum Queue (ft)	50	48	160	152	171	123	63
Average Queue (ft)	19	29	72	60	88	21	16
95th Queue (ft)	51	55	173	164	175	114	58
Link Distance (ft)		574	615	615		418	418
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)	150				135		
Storage Blk Time (%)					3		
Queuing Penalty (veh)					8		

**Intersection: 12: Union Blvd & Parkside Dr, All Intervals**

Movement	WB	WB	NB	NB	SB	SB	SB
Directions Served	L	R	T	TR	L	T	T
Maximum Queue (ft)	75	66	213	220	219	222	120
Average Queue (ft)	29	30	70	73	93	19	22
95th Queue (ft)	67	58	169	172	173	94	73
Link Distance (ft)		574	615	615		418	418
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)	150				135		
Storage Blk Time (%)					4	0	
Queuing Penalty (veh)					10	0	

**Intersection: 15: Union Blvd & Platte Ave, Interval #1**

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	NB
Directions Served	L	T	T	R	L	T	T	R	L	T	T	R
Maximum Queue (ft)	92	216	208	63	214	376	293	40	83	299	323	195
Average Queue (ft)	56	164	120	17	139	287	217	19	42	185	206	78
95th Queue (ft)	95	237	222	57	270	419	323	45	90	312	349	218
Link Distance (ft)		406	406			361	361	361		1451	1451	
Upstream Blk Time (%)						3						
Queuing Penalty (veh)						0						
Storage Bay Dist (ft)	170			35	150				215			115
Storage Blk Time (%)		8	34	5	1	27				11	32	0
Queuing Penalty (veh)		8	17	12	6	47				7	35	1

**Intersection: 15: Union Blvd & Platte Ave, Interval #1**

Movement	SB	SB	SB
Directions Served	L	T	TR
Maximum Queue (ft)	169	385	341
Average Queue (ft)	57	266	234
95th Queue (ft)	169	394	349
Link Distance (ft)		450	450
Upstream Blk Time (%)		0	
Queuing Penalty (veh)		0	
Storage Bay Dist (ft)	305		
Storage Blk Time (%)		5	
Queuing Penalty (veh)		4	

**Intersection: 15: Union Blvd & Platte Ave, Interval #2**

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	NB
Directions Served	L	T	T	R	L	T	T	R	L	T	T	R
Maximum Queue (ft)	95	238	169	78	190	377	301	33	65	227	243	153
Average Queue (ft)	56	164	115	27	103	289	214	15	43	150	164	80
95th Queue (ft)	101	243	198	80	220	425	327	38	72	245	274	204
Link Distance (ft)		406	406			361	361	361		1451	1451	
Upstream Blk Time (%)						3	0					
Queuing Penalty (veh)						0	0					
Storage Bay Dist (ft)	170			35	150				215			115
Storage Blk Time (%)		4	34	6	0	29				2	20	0
Queuing Penalty (veh)		4	17	14	1	50				1	21	0

**Intersection: 15: Union Blvd & Platte Ave, Interval #2**

Movement	SB	SB	SB
Directions Served	L	T	TR
Maximum Queue (ft)	140	333	322
Average Queue (ft)	53	230	209
95th Queue (ft)	155	338	301
Link Distance (ft)		450	450
Upstream Blk Time (%)		0	
Queuing Penalty (veh)		0	
Storage Bay Dist (ft)	305		
Storage Blk Time (%)		2	
Queuing Penalty (veh)		2	

**Intersection: 15: Union Blvd & Platte Ave, Interval #3**

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	NB
Directions Served	L	T	T	R	L	T	T	R	L	T	T	R
Maximum Queue (ft)	124	221	199	75	214	376	344	104	86	282	282	195
Average Queue (ft)	62	176	135	34	150	335	273	38	48	158	173	86
95th Queue (ft)	124	238	221	73	265	420	376	170	88	290	297	224
Link Distance (ft)		406	406			361	361	361		1451	1451	
Upstream Blk Time (%)						7	1	0				
Queuing Penalty (veh)						0	0	0				
Storage Bay Dist (ft)	170			35	150				215			115
Storage Blk Time (%)	0	8	46	10	1	35				6	21	
Queuing Penalty (veh)	0	8	26	26	3	65				4	25	

**Intersection: 15: Union Blvd & Platte Ave, Interval #3**

Movement	SB	SB	SB
Directions Served	L	T	TR
Maximum Queue (ft)	183	398	335
Average Queue (ft)	60	271	226
95th Queue (ft)	191	417	357
Link Distance (ft)		450	450
Upstream Blk Time (%)		1	0
Queuing Penalty (veh)		0	0
Storage Bay Dist (ft)	305		
Storage Blk Time (%)		5	
Queuing Penalty (veh)		4	

**Intersection: 15: Union Blvd & Platte Ave, Interval #4**

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	NB
Directions Served	L	T	T	R	L	T	T	R	L	T	T	R
Maximum Queue (ft)	87	242	198	87	214	367	298	41	78	303	318	169
Average Queue (ft)	58	167	116	37	138	275	209	17	43	183	205	84
95th Queue (ft)	101	250	206	94	255	389	305	43	79	318	327	217
Link Distance (ft)		406	406			361	361	361		1451	1451	
Upstream Blk Time (%)						3	1					
Queuing Penalty (veh)						0	0					
Storage Bay Dist (ft)	170			35	150				215			115
Storage Blk Time (%)		6	36	7	2	29				9	28	
Queuing Penalty (veh)		6	18	17	8	50				6	30	

**Intersection: 15: Union Blvd & Platte Ave, Interval #4**

Movement	SB	SB	SB
Directions Served	L	T	TR
Maximum Queue (ft)	90	337	312
Average Queue (ft)	48	247	217
95th Queue (ft)	94	358	340
Link Distance (ft)		450	450
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)	305		
Storage Blk Time (%)		3	
Queuing Penalty (veh)		2	

**Intersection: 15: Union Blvd & Platte Ave, All Intervals**

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	NB
Directions Served	L	T	T	R	L	T	T	R	L	T	T	R
Maximum Queue (ft)	124	259	224	90	215	380	353	118	96	330	341	195
Average Queue (ft)	58	168	121	29	133	297	228	22	44	169	187	82
95th Queue (ft)	106	243	213	78	256	421	341	93	83	295	316	216
Link Distance (ft)		406	406			361	361	361		1451	1451	
Upstream Blk Time (%)						4	1	0				
Queuing Penalty (veh)						0	0	0				
Storage Bay Dist (ft)	170			35	150				215			115
Storage Blk Time (%)	0	7	37	7	1	30				7	25	0
Queuing Penalty (veh)	0	6	20	17	4	53				5	28	0

**Intersection: 15: Union Blvd & Platte Ave, All Intervals**

Movement	SB	SB	SB
Directions Served	L	T	TR
Maximum Queue (ft)	284	422	388
Average Queue (ft)	55	253	221
95th Queue (ft)	157	381	339
Link Distance (ft)		450	450
Upstream Blk Time (%)		0	0
Queuing Penalty (veh)		0	0
Storage Bay Dist (ft)	305		
Storage Blk Time (%)		4	
Queuing Penalty (veh)		3	

**Zone Summary**

Zone wide Queuing Penalty, Interval #1: 405
Zone wide Queuing Penalty, Interval #2: 359
Zone wide Queuing Penalty, Interval #3: 555
Zone wide Queuing Penalty, Interval #4: 418
Zone wide Queuing Penalty, All Intervals: 434

**Intersection: 2: Bonfoy Ave & Pikes Peak Ave, Interval #1**

Movement	EB	EB	WB	WB	WB	NB	NB	SB
Directions Served	L	TR	L	T	TR	LT	R	LTR
Maximum Queue (ft)	12	4	42	7	16	100	49	35
Average Queue (ft)	2	1	18	1	2	54	33	14
95th Queue (ft)	13	6	45	8	15	97	55	41
Link Distance (ft)		324		725	725	593		292
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)	50		120				150	
Storage Blk Time (%)								
Queuing Penalty (veh)								

**Intersection: 2: Bonfoy Ave & Pikes Peak Ave, Interval #2**

Movement	EB	WB	WB	NB	NB	SB
Directions Served	L	L	T	LT	R	LTR
Maximum Queue (ft)	18	39	4	104	53	34
Average Queue (ft)	2	25	1	58	31	12
95th Queue (ft)	13	51	7	109	57	38
Link Distance (ft)			725	593		292
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)	50	120			150	
Storage Blk Time (%)	0			0		
Queuing Penalty (veh)	0			0		

**Intersection: 2: Bonfoy Ave & Pikes Peak Ave, Interval #3**

Movement	EB	WB	WB	WB	NB	NB	SB
Directions Served	L	L	T	TR	LT	R	LTR
Maximum Queue (ft)	18	52	30	37	180	108	51
Average Queue (ft)	2	25	5	7	107	50	21
95th Queue (ft)	14	53	32	35	245	143	54
Link Distance (ft)			725	725	593		292
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)	50	120				150	
Storage Blk Time (%)	0				12		
Queuing Penalty (veh)	0				9		

**Intersection: 2: Bonfoy Ave & Pikes Peak Ave, Interval #4**

Movement	EB	WB	WB	NB	NB	SB
Directions Served	L	L	TR	LT	R	LTR
Maximum Queue (ft)	12	51	16	78	62	44
Average Queue (ft)	2	23	2	49	34	16
95th Queue (ft)	14	52	20	81	63	45
Link Distance (ft)			725	593		292
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)	50	120			150	
Storage Blk Time (%)	0					
Queuing Penalty (veh)	0					

**Intersection: 2: Bonfoy Ave & Pikes Peak Ave, All Intervals**

Movement	EB	EB	WB	WB	WB	NB	NB	SB
Directions Served	L	TR	L	T	TR	LT	R	LTR
Maximum Queue (ft)	31	4	68	34	49	197	121	56
Average Queue (ft)	2	0	23	2	3	67	37	16
95th Queue (ft)	13	3	51	16	21	154	90	45
Link Distance (ft)		324		725	725	593		292
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)	50		120				150	
Storage Blk Time (%)	0					3		
Queuing Penalty (veh)	0					2		

**Intersection: 13: Union Blvd & Memorial Dr, Interval #1**

Movement	EB	NB	SB	SB
Directions Served	LR	L	T	R
Maximum Queue (ft)	42	31	9	8
Average Queue (ft)	20	14	1	1
95th Queue (ft)	44	39	14	9
Link Distance (ft)	389		88	
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)		60		175
Storage Blk Time (%)				
Queuing Penalty (veh)				

**Intersection: 13: Union Blvd & Memorial Dr, Interval #2**

Movement	EB	NB	NB	SB
Directions Served	LR	L	T	R
Maximum Queue (ft)	54	25	20	8
Average Queue (ft)	26	10	3	1
95th Queue (ft)	56	34	31	12
Link Distance (ft)	389		418	
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)		60		175
Storage Blk Time (%)			0	
Queuing Penalty (veh)			0	

**Intersection: 13: Union Blvd & Memorial Dr, Interval #3**

Movement	EB	NB	SB	SB
Directions Served	LR	L	T	R
Maximum Queue (ft)	61	35	4	4
Average Queue (ft)	30	12	1	1
95th Queue (ft)	64	39	7	7
Link Distance (ft)	389		88	
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)		60		175
Storage Blk Time (%)		0		
Queuing Penalty (veh)		0		

**Intersection: 13: Union Blvd & Memorial Dr, Interval #4**

Movement	EB	NB	SB	SB
Directions Served	LR	L	T	R
Maximum Queue (ft)	51	35	22	26
Average Queue (ft)	23	12	3	5
95th Queue (ft)	52	38	20	29
Link Distance (ft)	389		88	
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)		60		175
Storage Blk Time (%)		0		
Queuing Penalty (veh)		0		

**Intersection: 13: Union Blvd & Memorial Dr, All Intervals**

Movement	EB	NB	NB	SB	SB	SB
Directions Served	LR	L	T	T	T	R
Maximum Queue (ft)	71	39	20	22	9	38
Average Queue (ft)	25	12	1	1	0	2
95th Queue (ft)	55	38	15	10	7	16
Link Distance (ft)	389		418	88	88	
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)		60				175
Storage Blk Time (%)		0	0			
Queuing Penalty (veh)		0	0			

**Intersection: 14: Union Blvd & W Site Access, Interval #1**

Movement	WB	WB	SB
Directions Served	L	R	L
Maximum Queue (ft)	68	59	58
Average Queue (ft)	33	38	31
95th Queue (ft)	70	60	66
Link Distance (ft)		327	
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)	150		175
Storage Blk Time (%)			
Queuing Penalty (veh)			

**Intersection: 14: Union Blvd & W Site Access, Interval #2**

Movement	WB	WB	SB
Directions Served	L	R	L
Maximum Queue (ft)	72	69	54
Average Queue (ft)	34	41	27
95th Queue (ft)	73	73	59
Link Distance (ft)		327	
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)	150		175
Storage Blk Time (%)			
Queuing Penalty (veh)			

**Intersection: 14: Union Blvd & W Site Access, Interval #3**

Movement	WB	WB	NB	NB	SB
Directions Served	L	R	T	TR	L
Maximum Queue (ft)	64	63	6	9	74
Average Queue (ft)	30	46	1	1	35
95th Queue (ft)	62	69	9	10	86
Link Distance (ft)		327	88	88	
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)	150				175
Storage Blk Time (%)	0				
Queuing Penalty (veh)	0				

**Intersection: 14: Union Blvd & W Site Access, Interval #4**

Movement	WB	WB	NB	SB
Directions Served	L	R	TR	L
Maximum Queue (ft)	68	63	9	72
Average Queue (ft)	34	41	1	31
95th Queue (ft)	71	63	7	70
Link Distance (ft)		327	88	
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)	150			175
Storage Blk Time (%)				
Queuing Penalty (veh)				

**Intersection: 14: Union Blvd & W Site Access, All Intervals**

Movement	WB	WB	NB	NB	SB
Directions Served	L	R	T	TR	L
Maximum Queue (ft)	95	86	6	13	104
Average Queue (ft)	33	41	0	0	31
95th Queue (ft)	69	67	4	6	71
Link Distance (ft)		327	88	88	
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)	150				175
Storage Blk Time (%)	0				
Queuing Penalty (veh)	0				

**Zone Summary**

Zone wide Queuing Penalty, Interval #1: 0
Zone wide Queuing Penalty, Interval #2: 0
Zone wide Queuing Penalty, Interval #3: 9
Zone wide Queuing Penalty, Interval #4: 0
Zone wide Queuing Penalty, All Intervals: 2

**Intersection: 1: Union Blvd & Pikes Peak Ave, Interval #1**

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB	NB	NB	SB
Directions Served	L	T	T	R	L	T	TR	L	T	T	R	L
Maximum Queue (ft)	246	297	378	225	182	273	274	224	267	294	80	215
Average Queue (ft)	155	182	223	74	80	172	191	144	185	212	55	147
95th Queue (ft)	251	292	364	200	174	267	280	249	268	310	93	260
Link Distance (ft)		825	825			324	324		748	748		
Upstream Blk Time (%)						0	0					
Queuing Penalty (veh)						1	0					
Storage Bay Dist (ft)	300			125	150			500			35	125
Storage Blk Time (%)		1	31		1	15			50	11		2
Queuing Penalty (veh)		2	43		3	18			59	33		6

**Intersection: 1: Union Blvd & Pikes Peak Ave, Interval #1**

Movement	SB	SB
Directions Served	T	TR
Maximum Queue (ft)	424	445
Average Queue (ft)	298	309
95th Queue (ft)	445	461
Link Distance (ft)	1451	1451
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)	39	
Queuing Penalty (veh)	57	

**Intersection: 1: Union Blvd & Pikes Peak Ave, Interval #2**

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB	NB	NB	SB
Directions Served	L	T	T	R	L	T	TR	L	T	T	R	L
Maximum Queue (ft)	156	278	331	156	128	220	240	197	272	306	80	215
Average Queue (ft)	96	199	225	85	65	145	164	119	179	216	63	149
95th Queue (ft)	161	299	353	222	131	223	239	204	288	306	100	274
Link Distance (ft)		825	825			324	324		748	748		
Upstream Blk Time (%)						0	0					
Queuing Penalty (veh)						1	1					
Storage Bay Dist (ft)	300			125	150			500			35	125
Storage Blk Time (%)		0	30	0	0	9			52	12	13	
Queuing Penalty (veh)		1	43	0	0	10			61	38	43	

**Intersection: 1: Union Blvd & Pikes Peak Ave, Interval #2**

Movement	SB	SB
Directions Served	T	TR
Maximum Queue (ft)	404	413
Average Queue (ft)	299	312
95th Queue (ft)	461	463
Link Distance (ft)	1451	1451
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)	39	
Queuing Penalty (veh)	57	

**Intersection: 1: Union Blvd & Pikes Peak Ave, Interval #3**

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB	NB	NB	SB
Directions Served	L	T	T	R	L	T	TR	L	T	T	R	L
Maximum Queue (ft)	249	333	386	225	163	244	271	262	305	310	80	215
Average Queue (ft)	158	230	250	143	72	164	195	184	195	214	55	141
95th Queue (ft)	282	335	389	291	151	254	297	294	310	324	89	263
Link Distance (ft)		825	825			324	324		748	748		
Upstream Blk Time (%)						0	0					
Queuing Penalty (veh)						0	1					
Storage Bay Dist (ft)	300			125	150			500			35	125
Storage Blk Time (%)	2	0	34			13			53	11	6	
Queuing Penalty (veh)	6	1	52			17			67	35	22	

**Intersection: 1: Union Blvd & Pikes Peak Ave, Interval #3**

Movement	SB	SB
Directions Served	T	TR
Maximum Queue (ft)	550	516
Average Queue (ft)	364	366
95th Queue (ft)	562	561
Link Distance (ft)	1451	1451
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)	44	
Queuing Penalty (veh)	72	

**Intersection: 1: Union Blvd & Pikes Peak Ave, Interval #4**

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB	NB	NB	SB
Directions Served	L	T	T	R	L	T	TR	L	T	T	R	L
Maximum Queue (ft)	206	342	369	225	174	254	250	216	251	270	80	214
Average Queue (ft)	111	205	239	136	87	172	188	123	184	209	67	151
95th Queue (ft)	214	337	392	286	174	266	263	218	277	303	102	263
Link Distance (ft)		825	825			324	324		748	748		
Upstream Blk Time (%)						0						
Queuing Penalty (veh)						0						
Storage Bay Dist (ft)	300			125	150			500			35	125
Storage Blk Time (%)	1	0	29	0	2	15				50	12	3
Queuing Penalty (veh)	2	0	41	0	4	17				59	35	11

**Intersection: 1: Union Blvd & Pikes Peak Ave, Interval #4**

Movement	SB	SB
Directions Served	T	TR
Maximum Queue (ft)	410	424
Average Queue (ft)	288	309
95th Queue (ft)	434	435
Link Distance (ft)	1451	1451
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)	41	
Queuing Penalty (veh)	61	

**Intersection: 1: Union Blvd & Pikes Peak Ave, All Intervals**

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB	NB	NB	SB
Directions Served	L	T	T	R	L	T	TR	L	T	T	R	L
Maximum Queue (ft)	283	384	435	225	200	304	308	266	319	334	80	215
Average Queue (ft)	130	204	234	109	76	163	184	143	186	213	60	147
95th Queue (ft)	239	320	376	259	159	254	273	251	287	311	97	265
Link Distance (ft)		825	825			324	324		748	748		
Upstream Blk Time (%)						0	0					
Queuing Penalty (veh)						1	0					
Storage Bay Dist (ft)	300			125	150			500			35	125
Storage Blk Time (%)	1	0	31	0	1	13				51	11	6
Queuing Penalty (veh)	2	1	45	0	2	16				62	35	21

**Intersection: 1: Union Blvd & Pikes Peak Ave, All Intervals**

Movement	SB	SB
Directions Served	T	TR
Maximum Queue (ft)	568	538
Average Queue (ft)	312	324
95th Queue (ft)	484	487
Link Distance (ft)	1451	1451
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)	41	
Queuing Penalty (veh)	62	

**Intersection: 3: Iowa Ave & Pikes Peak Ave, Interval #1**

Movement	EB	EB	EB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	TR	L	T	TR	L	TR	L	TR
Maximum Queue (ft)	33	132	176	53	106	118	178	145	61	146
Average Queue (ft)	12	79	118	25	62	61	90	79	20	83
95th Queue (ft)	36	131	187	65	118	117	187	141	63	152
Link Distance (ft)		725	725		519	519	493		316	316
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)	120			120				150		
Storage Blk Time (%)		1			1		0	2		
Queuing Penalty (veh)		0			0		0	3		

**Intersection: 3: Iowa Ave & Pikes Peak Ave, Interval #2**

Movement	EB	EB	EB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	TR	L	T	TR	L	TR	L	TR
Maximum Queue (ft)	33	130	172	64	122	111	174	164	39	151
Average Queue (ft)	15	80	108	28	81	68	78	88	18	75
95th Queue (ft)	39	128	176	63	130	128	182	161	46	150
Link Distance (ft)		725	725		519	519	493		316	316
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)	120			120					150	
Storage Blk Time (%)		2			2		1	3		
Queuing Penalty (veh)		1			1		1	4		

**Intersection: 3: Iowa Ave & Pikes Peak Ave, Interval #3**

Movement	EB	EB	EB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	TR	L	T	TR	L	TR	L	TR
Maximum Queue (ft)	29	169	191	85	111	128	164	169	48	169
Average Queue (ft)	12	92	117	36	74	74	81	98	18	95
95th Queue (ft)	35	162	188	77	124	132	183	177	53	179
Link Distance (ft)		725	725		519	519	493		316	316
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)	120			120					150	
Storage Blk Time (%)		5		0	0		0	3		
Queuing Penalty (veh)		2		1	0		0	5		

**Intersection: 3: Iowa Ave & Pikes Peak Ave, Interval #4**

Movement	EB	EB	EB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	TR	L	T	TR	L	TR	L	TR
Maximum Queue (ft)	38	141	184	60	137	130	143	148	36	152
Average Queue (ft)	18	77	114	30	86	78	77	77	15	83
95th Queue (ft)	47	144	193	66	144	137	136	149	40	155
Link Distance (ft)		725	725		519	519	493		316	316
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)	120			120					150	
Storage Blk Time (%)		3			2		1	1		
Queuing Penalty (veh)		1			1		1	1		

**Intersection: 3: Iowa Ave & Pikes Peak Ave, All Intervals**

Movement	EB	EB	EB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	TR	L	T	TR	L	TR	L	TR
Maximum Queue (ft)	43	186	220	94	155	142	282	177	70	177
Average Queue (ft)	14	82	114	30	76	70	82	85	18	84
95th Queue (ft)	40	143	186	68	131	130	174	158	52	160
Link Distance (ft)		725	725		519	519	493		316	316
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)	120			120				150		
Storage Blk Time (%)		3		0	1		0	2		
Queuing Penalty (veh)		1		0	1		1	3		

**Intersection: 4: Printers Pkwy & Pikes Peak Ave, Interval #1**

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	T	T	L	T	TR	L	LT	R	L	T	R
Maximum Queue (ft)	25	71	96	47	186	165	95	57	41	22	6	30
Average Queue (ft)	7	32	48	15	109	75	59	28	21	9	1	5
95th Queue (ft)	26	71	93	45	190	164	111	64	47	29	9	24
Link Distance (ft)		519	519		490	490	356	356		107	107	107
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	80			120					195			
Storage Blk Time (%)		0			7							
Queuing Penalty (veh)		0			2							

**Intersection: 4: Printers Pkwy & Pikes Peak Ave, Interval #2**

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	T	T	L	T	TR	L	LT	R	L	T	R
Maximum Queue (ft)	22	92	118	41	139	105	122	87	40	34	12	28
Average Queue (ft)	7	45	53	18	102	54	68	34	20	10	2	11
95th Queue (ft)	23	90	108	52	156	112	131	94	45	35	13	36
Link Distance (ft)		519	519		490	490	356	356		107	107	107
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	80			120					195			
Storage Blk Time (%)		2			5							
Queuing Penalty (veh)		0			1							

**Intersection: 4: Printers Pkwy & Pikes Peak Ave, Interval #3**

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB	
Directions Served	L	T	T	L	T	TR	L	LT	R	L	T	R	
Maximum Queue (ft)	17	102	135	48	150	110	137	106	42	23	18	30	
Average Queue (ft)	6	54	69	17	97	69	88	36	24	5	3	11	
95th Queue (ft)	21	101	128	53	162	119	146	101	48	23	17	34	
Link Distance (ft)		519	519		490	490	356	356		107	107	107	
Upstream Blk Time (%)													
Queuing Penalty (veh)													
Storage Bay Dist (ft)	80						120						195
Storage Blk Time (%)				4				5					
Queuing Penalty (veh)				1				1					

**Intersection: 4: Printers Pkwy & Pikes Peak Ave, Interval #4**

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB	
Directions Served	L	T	T	L	T	TR	L	LT	R	L	T	R	
Maximum Queue (ft)	16	90	102	39	171	128	132	69	39	28	24	30	
Average Queue (ft)	5	39	49	15	115	66	70	31	22	6	5	10	
95th Queue (ft)	22	83	102	42	183	125	135	71	46	27	22	33	
Link Distance (ft)		519	519		490	490	356	356		107	107	107	
Upstream Blk Time (%)													
Queuing Penalty (veh)													
Storage Bay Dist (ft)	80						120						195
Storage Blk Time (%)				4				7					
Queuing Penalty (veh)				1				2					

**Intersection: 4: Printers Pkwy & Pikes Peak Ave, All Intervals**

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB	
Directions Served	L	T	T	L	T	TR	L	LT	R	L	T	R	
Maximum Queue (ft)	30	110	138	60	197	172	158	127	50	42	30	34	
Average Queue (ft)	6	43	55	16	106	66	71	32	22	7	3	9	
95th Queue (ft)	23	88	110	48	174	133	133	84	47	29	16	32	
Link Distance (ft)		519	519		490	490	356	356		107	107	107	
Upstream Blk Time (%)													
Queuing Penalty (veh)													
Storage Bay Dist (ft)	80						120						195
Storage Blk Time (%)				3				6					
Queuing Penalty (veh)				0				1					

**Intersection: 12: Union Blvd & Parkside Dr, Interval #1**

Movement	WB	WB	NB	NB	SB	SB	SB
Directions Served	L	R	T	TR	L	T	T
Maximum Queue (ft)	116	115	112	97	40	161	176
Average Queue (ft)	62	72	64	44	21	61	74
95th Queue (ft)	119	120	122	100	51	144	166
Link Distance (ft)		574	615	615		418	418
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)	150				135		
Storage Blk Time (%)	0	0				1	
Queuing Penalty (veh)	1	0				1	

**Intersection: 12: Union Blvd & Parkside Dr, Interval #2**

Movement	WB	WB	NB	NB	SB	SB	SB
Directions Served	L	R	T	TR	L	T	T
Maximum Queue (ft)	119	101	130	100	35	152	169
Average Queue (ft)	67	67	70	46	23	62	73
95th Queue (ft)	124	105	134	96	46	148	166
Link Distance (ft)		574	615	615		418	418
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)	150				135		
Storage Blk Time (%)	1					1	
Queuing Penalty (veh)	2					0	

**Intersection: 12: Union Blvd & Parkside Dr, Interval #3**

Movement	WB	WB	NB	NB	SB	SB	SB
Directions Served	L	R	T	TR	L	T	T
Maximum Queue (ft)	121	139	157	131	48	137	157
Average Queue (ft)	74	82	94	63	28	66	74
95th Queue (ft)	122	139	174	141	56	143	160
Link Distance (ft)		574	615	615		418	418
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)	150				135		
Storage Blk Time (%)	0	1				1	
Queuing Penalty (veh)	0	1				0	

**Intersection: 12: Union Blvd & Parkside Dr, Interval #4**

Movement	WB	WB	NB	NB	SB	SB	SB
Directions Served	L	R	T	TR	L	T	T
Maximum Queue (ft)	100	96	150	117	39	156	178
Average Queue (ft)	56	63	69	43	22	59	83
95th Queue (ft)	119	98	149	114	47	165	190
Link Distance (ft)		574	615	615		418	418
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)	150				135		
Storage Blk Time (%)	1	0				1	
Queuing Penalty (veh)	3	0				1	

**Intersection: 12: Union Blvd & Parkside Dr, All Intervals**

Movement	WB	WB	NB	NB	SB	SB	SB
Directions Served	L	R	T	TR	L	T	T
Maximum Queue (ft)	153	149	174	146	52	198	210
Average Queue (ft)	65	71	74	49	24	62	76
95th Queue (ft)	122	118	148	115	50	151	171
Link Distance (ft)		574	615	615		418	418
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)	150				135		
Storage Blk Time (%)	1	0				1	
Queuing Penalty (veh)	2	0				0	

**Intersection: 15: Union Blvd & Platte Ave, Interval #1**

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	NB
Directions Served	L	T	T	R	L	T	T	R	L	T	T	R
Maximum Queue (ft)	289	409	348	77	214	301	236	47	96	322	366	195
Average Queue (ft)	208	315	263	18	135	222	164	22	49	193	213	98
95th Queue (ft)	332	432	350	70	247	327	255	51	92	321	354	230
Link Distance (ft)		406	406			361	361	361		1451	1451	
Upstream Blk Time (%)		2				0						
Queuing Penalty (veh)		0				0						
Storage Bay Dist (ft)	170			35	150				215			115
Storage Blk Time (%)	18	37	55	2	10	23				10	31	1
Queuing Penalty (veh)	84	84	22	12	32	31				7	44	3

**Intersection: 15: Union Blvd & Platte Ave, Interval #1**

Movement	SB	SB	SB
Directions Served	L	T	TR
Maximum Queue (ft)	131	313	291
Average Queue (ft)	62	216	191
95th Queue (ft)	136	328	302
Link Distance (ft)		450	450
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)	305		
Storage Blk Time (%)		1	
Queuing Penalty (veh)		1	

**Intersection: 15: Union Blvd & Platte Ave, Interval #2**

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	NB
Directions Served	L	T	T	R	L	T	T	R	L	T	T	R
Maximum Queue (ft)	289	418	384	60	214	316	238	41	76	324	338	195
Average Queue (ft)	215	323	266	22	97	207	155	18	42	223	235	96
95th Queue (ft)	348	463	420	79	196	301	243	45	78	355	376	229
Link Distance (ft)		406	406			361	361	361		1451	1451	
Upstream Blk Time (%)		10	5			0						
Queuing Penalty (veh)		0	0			0						
Storage Bay Dist (ft)	170			35	150				215			115
Storage Blk Time (%)	42	33	56	3	0	24				11	29	0
Queuing Penalty (veh)	200	75	22	13	1	32				8	41	0

**Intersection: 15: Union Blvd & Platte Ave, Interval #2**

Movement	SB	SB	SB
Directions Served	L	T	TR
Maximum Queue (ft)	90	320	287
Average Queue (ft)	54	250	212
95th Queue (ft)	99	346	311
Link Distance (ft)		450	450
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)	305		
Storage Blk Time (%)		2	
Queuing Penalty (veh)		2	

**Intersection: 15: Union Blvd & Platte Ave, Interval #3**

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	NB
Directions Served	L	T	T	R	L	T	T	R	L	T	T	R
Maximum Queue (ft)	290	433	409	71	189	322	242	49	103	294	335	195
Average Queue (ft)	245	364	322	22	106	214	153	21	47	216	238	122
95th Queue (ft)	343	484	448	74	210	326	258	53	94	334	362	253
Link Distance (ft)		406	406			361	361	361		1451	1451	
Upstream Blk Time (%)		21	3			0						
Queuing Penalty (veh)		0	0			0						
Storage Bay Dist (ft)	170			35	150				215			115
Storage Blk Time (%)	44	39	61	5		23				9	30	1
Queuing Penalty (veh)	227	96	26	24		34				7	46	3

**Intersection: 15: Union Blvd & Platte Ave, Interval #3**

Movement	SB	SB	SB
Directions Served	L	T	TR
Maximum Queue (ft)	99	380	352
Average Queue (ft)	55	277	254
95th Queue (ft)	106	403	379
Link Distance (ft)		450	450
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)	305		
Storage Blk Time (%)		5	
Queuing Penalty (veh)		6	

**Intersection: 15: Union Blvd & Platte Ave, Interval #4**

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	NB
Directions Served	L	T	T	R	L	T	T	R	L	T	T	R
Maximum Queue (ft)	290	436	380	90	198	312	220	47	143	336	364	195
Average Queue (ft)	237	356	295	29	109	205	158	21	63	230	250	115
95th Queue (ft)	360	491	446	88	220	306	229	50	169	383	411	239
Link Distance (ft)		406	406			361	361	361		1451	1451	
Upstream Blk Time (%)		33	3			0						
Queuing Penalty (veh)		0	0			0						
Storage Bay Dist (ft)	170			35	150				215			115
Storage Blk Time (%)	59	27	56	5	0	24				10	31	0
Queuing Penalty (veh)	285	62	23	23	0	31				7	44	1

**Intersection: 15: Union Blvd & Platte Ave, Interval #4**

Movement	SB	SB	SB
Directions Served	L	T	TR
Maximum Queue (ft)	137	305	272
Average Queue (ft)	72	234	191
95th Queue (ft)	150	325	305
Link Distance (ft)		450	450
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)	305		
Storage Blk Time (%)		1	
Queuing Penalty (veh)		1	

**Intersection: 15: Union Blvd & Platte Ave, All Intervals**

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	NB
Directions Served	L	T	T	R	L	T	T	R	L	T	T	R
Maximum Queue (ft)	290	438	426	90	215	360	261	75	160	365	418	195
Average Queue (ft)	226	339	286	23	112	212	157	21	50	215	234	108
95th Queue (ft)	349	472	425	78	221	316	247	50	116	351	378	239
Link Distance (ft)		406	406			361	361	361		1451	1451	
Upstream Blk Time (%)		16	3			0						
Queuing Penalty (veh)		0	0			0						
Storage Bay Dist (ft)	170			35	150				215			115
Storage Blk Time (%)	41	34	57	4	3	24				10	30	0
Queuing Penalty (veh)	199	79	23	18	8	32				7	44	2

**Intersection: 15: Union Blvd & Platte Ave, All Intervals**

Movement	SB	SB	SB
Directions Served	L	T	TR
Maximum Queue (ft)	166	399	364
Average Queue (ft)	61	244	212
95th Queue (ft)	126	358	332
Link Distance (ft)		450	450
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)	305		
Storage Blk Time (%)		2	
Queuing Penalty (veh)		2	

**Zone Summary**

Zone wide Queuing Penalty, Interval #1: 549
Zone wide Queuing Penalty, Interval #2: 661
Zone wide Queuing Penalty, Interval #3: 753
Zone wide Queuing Penalty, Interval #4: 719
Zone wide Queuing Penalty, All Intervals: 671

**Intersection: 2: Bonfoy Ave & Pikes Peak Ave, Interval #1**

Movement	EB	EB	EB	WB	WB	WB	NB	NB	SB
Directions Served	L	T	TR	L	T	TR	LT	R	LTR
Maximum Queue (ft)	34	11	42	60	5	2	305	157	52
Average Queue (ft)	15	2	9	28	0	0	179	80	23
95th Queue (ft)	40	17	46	67	0	3	413	200	58
Link Distance (ft)		324	324		725	725	593		292
Upstream Blk Time (%)							0		
Queuing Penalty (veh)							0		
Storage Bay Dist (ft)	50			120				150	
Storage Blk Time (%)	0	0					24		
Queuing Penalty (veh)	0	0					19		

**Intersection: 2: Bonfoy Ave & Pikes Peak Ave, Interval #2**

Movement	EB	EB	WB	WB	WB	NB	NB	SB
Directions Served	L	TR	L	T	TR	LT	R	LTR
Maximum Queue (ft)	30	32	74	4	6	169	78	42
Average Queue (ft)	10	6	37	1	1	95	33	23
95th Queue (ft)	34	31	76	6	6	149	52	53
Link Distance (ft)		324		725	725	593		292
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)	50		120				150	
Storage Blk Time (%)	0					2		
Queuing Penalty (veh)	0					2		

**Intersection: 2: Bonfoy Ave & Pikes Peak Ave, Interval #3**

Movement	EB	EB	EB	WB	WB	NB	NB	SB
Directions Served	L	T	TR	L	T	LT	R	LTR
Maximum Queue (ft)	35	8	23	71	4	189	77	51
Average Queue (ft)	12	0	3	40	1	103	45	21
95th Queue (ft)	37	0	20	73	6	191	119	53
Link Distance (ft)		324	324		725	593		292
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)	50			120			150	
Storage Blk Time (%)	0	0				7		
Queuing Penalty (veh)	0	0				7		

**Intersection: 2: Bonfoy Ave & Pikes Peak Ave, Interval #4**

Movement	EB	EB	EB	WB	NB	NB	SB
Directions Served	L	T	TR	L	LT	R	LTR
Maximum Queue (ft)	40	18	44	68	385	199	52
Average Queue (ft)	13	3	10	35	239	118	22
95th Queue (ft)	40	28	42	74	456	258	58
Link Distance (ft)		324	324		593		292
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)	50			120		150	
Storage Blk Time (%)	1				47	0	
Queuing Penalty (veh)	3				37	0	

**Intersection: 2: Bonfoy Ave & Pikes Peak Ave, All Intervals**

Movement	EB	EB	EB	WB	WB	WB	NB	NB	SB
Directions Served	L	T	TR	L	T	TR	LT	R	LTR
Maximum Queue (ft)	43	29	67	84	13	8	434	200	64
Average Queue (ft)	12	1	7	35	0	0	154	69	22
95th Queue (ft)	38	16	36	73	4	3	348	183	56
Link Distance (ft)		324	324		725	725	593		292
Upstream Blk Time (%)								0	
Queuing Penalty (veh)								0	
Storage Bay Dist (ft)	50			120				150	
Storage Blk Time (%)	0	0					20	0	
Queuing Penalty (veh)	1	0					16	0	

**Intersection: 13: Union Blvd & Memorial Dr, Interval #1**

Movement	EB	NB	SB
Directions Served	LR	L	T
Maximum Queue (ft)	50	44	5
Average Queue (ft)	26	21	1
95th Queue (ft)	49	49	7
Link Distance (ft)	389		88
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)		60	
Storage Blk Time (%)		0	
Queuing Penalty (veh)		1	

**Intersection: 13: Union Blvd & Memorial Dr, Interval #2**

Movement	EB	NB	SB
Directions Served	LR	L	R
Maximum Queue (ft)	88	65	13
Average Queue (ft)	29	29	0
95th Queue (ft)	65	67	0
Link Distance (ft)	389		
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)		60	175
Storage Blk Time (%)		2	
Queuing Penalty (veh)		10	

**Intersection: 13: Union Blvd & Memorial Dr, Interval #3**

Movement	EB	NB	NB	SB
Directions Served	LR	L	T	R
Maximum Queue (ft)	89	53	19	16
Average Queue (ft)	43	26	3	3
95th Queue (ft)	94	56	22	20
Link Distance (ft)	389		418	
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)		60		175
Storage Blk Time (%)		1	0	
Queuing Penalty (veh)		2	0	

**Intersection: 13: Union Blvd & Memorial Dr, Interval #4**

Movement	EB	NB
Directions Served	LR	L
Maximum Queue (ft)	72	50
Average Queue (ft)	34	26
95th Queue (ft)	75	56
Link Distance (ft)	389	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		60
Storage Blk Time (%)		1
Queuing Penalty (veh)		5

**Intersection: 13: Union Blvd & Memorial Dr, All Intervals**

Movement	EB	NB	NB	SB	SB
Directions Served	LR	L	T	T	R
Maximum Queue (ft)	95	69	19	5	28
Average Queue (ft)	33	26	1	0	1
95th Queue (ft)	73	58	10	3	10
Link Distance (ft)	389		418	88	
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)		60			175
Storage Blk Time (%)		1	0		
Queuing Penalty (veh)		5	0		

**Intersection: 14: Union Blvd & W Site Access, Interval #1**

Movement	WB	WB	NB	SB
Directions Served	L	R	T	L
Maximum Queue (ft)	102	58	18	96
Average Queue (ft)	50	39	3	49
95th Queue (ft)	100	62	27	101
Link Distance (ft)		327	88	
Upstream Blk Time (%)			0	
Queuing Penalty (veh)			0	
Storage Bay Dist (ft)	150			175
Storage Blk Time (%)	0			
Queuing Penalty (veh)	0			

**Intersection: 14: Union Blvd & W Site Access, Interval #2**

Movement	WB	WB	NB	SB
Directions Served	L	R	TR	L
Maximum Queue (ft)	116	57	4	60
Average Queue (ft)	66	38	1	38
95th Queue (ft)	119	57	7	73
Link Distance (ft)		327	88	
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)	150			175
Storage Blk Time (%)				
Queuing Penalty (veh)				

**Intersection: 14: Union Blvd & W Site Access, Interval #3**

Movement	WB	WB	SB
Directions Served	L	R	L
Maximum Queue (ft)	171	128	83
Average Queue (ft)	105	60	48
95th Queue (ft)	197	143	92
Link Distance (ft)		327	
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)	150		175
Storage Blk Time (%)	11	0	
Queuing Penalty (veh)	14	0	

**Intersection: 14: Union Blvd & W Site Access, Interval #4**

Movement	WB	WB	NB	SB
Directions Served	L	R	TR	L
Maximum Queue (ft)	111	98	13	78
Average Queue (ft)	62	46	2	46
95th Queue (ft)	128	107	14	84
Link Distance (ft)		327	88	
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)	150			175
Storage Blk Time (%)	1			
Queuing Penalty (veh)	1			

**Intersection: 14: Union Blvd & W Site Access, All Intervals**

Movement	WB	WB	NB	NB	SB
Directions Served	L	R	T	TR	L
Maximum Queue (ft)	171	128	18	17	108
Average Queue (ft)	71	46	1	1	45
95th Queue (ft)	146	101	13	7	88
Link Distance (ft)		327	88	88	
Upstream Blk Time (%)			0		
Queuing Penalty (veh)			0		
Storage Bay Dist (ft)	150				175
Storage Blk Time (%)	3	0			
Queuing Penalty (veh)	4	0			

**Zone Summary**

Zone wide Queuing Penalty, Interval #1: 20
Zone wide Queuing Penalty, Interval #2: 12
Zone wide Queuing Penalty, Interval #3: 24
Zone wide Queuing Penalty, Interval #4: 46
Zone wide Queuing Penalty, All Intervals: 26

**Intersection: 1: Union Blvd & Pikes Peak Ave, Interval #1**

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB	NB	NB	SB
Directions Served	L	T	T	R	L	T	TR	L	T	T	R	L
Maximum Queue (ft)	138	286	362	199	199	292	317	200	282	303	80	214
Average Queue (ft)	87	188	223	107	58	210	240	112	172	188	74	165
95th Queue (ft)	137	303	351	243	159	297	331	200	282	304	100	260
Link Distance (ft)		825	825			324	324		748	748		
Upstream Blk Time (%)						0	1					
Queuing Penalty (veh)						0	2					
Storage Bay Dist (ft)	300			125	150			500			35	125
Storage Blk Time (%)		0	30	0		27			49	24		17
Queuing Penalty (veh)		0	56	1		19			82	73		48

**Intersection: 1: Union Blvd & Pikes Peak Ave, Interval #1**

Movement	SB	SB
Directions Served	T	TR
Maximum Queue (ft)	361	358
Average Queue (ft)	263	280
95th Queue (ft)	390	402
Link Distance (ft)	1451	1451
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)	40	
Queuing Penalty (veh)	84	

**Intersection: 1: Union Blvd & Pikes Peak Ave, Interval #2**

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB	NB	NB	SB
Directions Served	L	T	T	R	L	T	TR	L	T	T	R	L
Maximum Queue (ft)	165	243	285	192	151	304	328	151	277	289	80	214
Average Queue (ft)	93	147	177	89	62	206	241	95	182	209	66	153
95th Queue (ft)	177	247	297	217	149	317	352	168	291	318	98	264
Link Distance (ft)		825	825			324	324		748	748		
Upstream Blk Time (%)						0	2					
Queuing Penalty (veh)						2	6					
Storage Bay Dist (ft)	300			125	150			500			35	125
Storage Blk Time (%)	0	0	21	0		28				47	22	19
Queuing Penalty (veh)	0	1	39	0		19				78	67	54

**Intersection: 1: Union Blvd & Pikes Peak Ave, Interval #2**

Movement	SB	SB
Directions Served	T	TR
Maximum Queue (ft)	389	374
Average Queue (ft)	264	252
95th Queue (ft)	427	392
Link Distance (ft)	1451	1451
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)	22	
Queuing Penalty (veh)	47	

**Intersection: 1: Union Blvd & Pikes Peak Ave, Interval #3**

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB	NB	NB	SB
Directions Served	L	T	T	R	L	T	TR	L	T	T	R	L
Maximum Queue (ft)	179	288	335	225	152	320	333	186	316	376	80	214
Average Queue (ft)	105	184	229	128	84	245	257	120	213	250	68	179
95th Queue (ft)	182	305	354	268	182	349	369	214	336	373	96	263
Link Distance (ft)		825	825			324	324		748	748		
Upstream Blk Time (%)						1	2					
Queuing Penalty (veh)						4	11					
Storage Bay Dist (ft)	300			125	150			500			35	125
Storage Blk Time (%)		1	29	0		33			56	30		22
Queuing Penalty (veh)		2	57	0		25			100	97		71

**Intersection: 1: Union Blvd & Pikes Peak Ave, Interval #3**

Movement	SB	SB
Directions Served	T	TR
Maximum Queue (ft)	362	381
Average Queue (ft)	266	268
95th Queue (ft)	412	401
Link Distance (ft)	1451	1451
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)	31	
Queuing Penalty (veh)	71	

**Intersection: 1: Union Blvd & Pikes Peak Ave, Interval #4**

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB	NB	NB	SB
Directions Served	L	T	T	R	L	T	TR	L	T	T	R	L
Maximum Queue (ft)	158	274	304	212	173	296	313	138	367	383	80	214
Average Queue (ft)	93	165	204	92	73	223	241	102	235	262	71	168
95th Queue (ft)	162	288	297	208	189	319	332	151	411	429	99	251
Link Distance (ft)		825	825			324	324		748	748		
Upstream Blk Time (%)						1	1					
Queuing Penalty (veh)						3	4					
Storage Bay Dist (ft)	300			125	150			500			35	125
Storage Blk Time (%)		0	30	1		31		0	48	31	18	
Queuing Penalty (veh)		0	55	2		21		0	80	92	51	

**Intersection: 1: Union Blvd & Pikes Peak Ave, Interval #4**

Movement	SB	SB
Directions Served	T	TR
Maximum Queue (ft)	396	412
Average Queue (ft)	269	279
95th Queue (ft)	420	426
Link Distance (ft)	1451	1451
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)	37	
Queuing Penalty (veh)	78	

**Intersection: 1: Union Blvd & Pikes Peak Ave, All Intervals**

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB	NB	NB	SB
Directions Served	L	T	T	R	L	T	TR	L	T	T	R	L
Maximum Queue (ft)	200	350	385	225	200	323	339	214	385	403	80	215
Average Queue (ft)	95	171	208	104	69	221	244	107	200	227	70	166
95th Queue (ft)	167	289	330	237	172	324	347	187	339	367	99	262
Link Distance (ft)		825	825			324	324		748	748		
Upstream Blk Time (%)						1	1					
Queuing Penalty (veh)						2	6					
Storage Bay Dist (ft)	300			125	150			500			35	125
Storage Blk Time (%)	0	1	27	0		30			0	50	27	19
Queuing Penalty (veh)	0	1	52	1		21			0	85	82	56

**Intersection: 1: Union Blvd & Pikes Peak Ave, All Intervals**

Movement	SB	SB
Directions Served	T	TR
Maximum Queue (ft)	438	432
Average Queue (ft)	266	270
95th Queue (ft)	413	407
Link Distance (ft)	1451	1451
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)	32	
Queuing Penalty (veh)	70	

**Intersection: 3: Iowa Ave & Pikes Peak Ave, Interval #1**

Movement	EB	EB	EB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	TR	L	T	TR	L	TR	L	TR
Maximum Queue (ft)	42	222	255	52	202	175	103	84	51	127
Average Queue (ft)	19	128	177	29	136	121	57	47	19	74
95th Queue (ft)	47	211	265	62	218	193	111	88	56	145
Link Distance (ft)		725	725		519	519	493		316	316
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)	120			120				150		
Storage Blk Time (%)		11			14					
Queuing Penalty (veh)		3			7					

**Intersection: 3: Iowa Ave & Pikes Peak Ave, Interval #2**

Movement	EB	EB	EB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	TR	L	T	TR	L	TR	L	TR
Maximum Queue (ft)	46	197	255	60	207	174	111	85	52	118
Average Queue (ft)	21	128	175	36	130	113	61	44	21	67
95th Queue (ft)	54	211	284	75	210	188	124	92	63	124
Link Distance (ft)		725	725		519	519	493		316	316
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)	120			120					150	
Storage Blk Time (%)		13			16		0	0		
Queuing Penalty (veh)		4			8		0	0		

**Intersection: 3: Iowa Ave & Pikes Peak Ave, Interval #3**

Movement	EB	EB	EB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	TR	L	T	TR	L	TR	L	TR
Maximum Queue (ft)	42	224	267	82	201	184	132	104	53	186
Average Queue (ft)	18	145	199	39	143	120	76	53	18	109
95th Queue (ft)	48	229	278	85	211	189	136	114	55	213
Link Distance (ft)		725	725		519	519	493		316	316
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)	120			120					150	
Storage Blk Time (%)		15		0	17		0	0		
Queuing Penalty (veh)		5		1	10		0	0		

**Intersection: 3: Iowa Ave & Pikes Peak Ave, Interval #4**

Movement	EB	EB	EB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	TR	L	T	TR	L	TR	L	TR
Maximum Queue (ft)	46	186	257	67	194	168	134	71	35	116
Average Queue (ft)	21	118	173	28	130	113	66	39	12	66
95th Queue (ft)	56	208	270	64	207	180	140	82	38	124
Link Distance (ft)		725	725		519	519	493		316	316
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)	120			120					150	
Storage Blk Time (%)		12			14		1			
Queuing Penalty (veh)		4			7		1			

**Intersection: 3: Iowa Ave & Pikes Peak Ave, All Intervals**

Movement	EB	EB	EB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	TR	L	T	TR	L	TR	L	TR
Maximum Queue (ft)	63	262	305	82	240	203	145	122	70	186
Average Queue (ft)	20	130	181	33	135	117	65	46	18	79
95th Queue (ft)	51	216	276	73	212	188	129	95	54	159
Link Distance (ft)		725	725		519	519	493		316	316
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)	120			120				150		
Storage Blk Time (%)		13		0	15		0	0		
Queuing Penalty (veh)		4		0	8		0	0		

**Intersection: 4: Printers Pkwy & Pikes Peak Ave, Interval #1**

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB
Directions Served	L	T	T	L	T	TR	L	LT	R	L	R
Maximum Queue (ft)	26	142	178	65	183	132	118	78	53	12	24
Average Queue (ft)	6	91	101	31	124	72	65	29	28	2	6
95th Queue (ft)	23	155	169	73	189	133	128	82	57	14	26
Link Distance (ft)		519	519		490	490	356	356		107	107
Upstream Blk Time (%)											
Queuing Penalty (veh)											
Storage Bay Dist (ft)	80			120					195		
Storage Blk Time (%)		6		0	9						
Queuing Penalty (veh)		1		0	5						

**Intersection: 4: Printers Pkwy & Pikes Peak Ave, Interval #2**

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB
Directions Served	L	T	T	L	T	TR	L	LT	R	L	R
Maximum Queue (ft)	22	126	126	93	196	192	138	102	27	16	30
Average Queue (ft)	6	73	87	37	129	106	80	31	11	3	9
95th Queue (ft)	22	142	147	93	220	202	143	95	32	20	32
Link Distance (ft)		519	519		490	490	356	356		107	107
Upstream Blk Time (%)											
Queuing Penalty (veh)											
Storage Bay Dist (ft)	80			120					195		
Storage Blk Time (%)		4			9						
Queuing Penalty (veh)		0			5						

**Intersection: 4: Printers Pkwy & Pikes Peak Ave, Interval #3**

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB
Directions Served	L	T	T	L	T	TR	L	LT	R	L	R
Maximum Queue (ft)	17	142	146	109	224	206	138	77	32	23	30
Average Queue (ft)	3	92	102	51	144	115	85	34	14	5	8
95th Queue (ft)	16	144	155	118	237	194	146	81	37	20	29
Link Distance (ft)		519	519		490	490	356	356		107	107
Upstream Blk Time (%)											
Queuing Penalty (veh)											
Storage Bay Dist (ft)	80			120					195		
Storage Blk Time (%)		5		0	14						
Queuing Penalty (veh)		1		1	9						

**Intersection: 4: Printers Pkwy & Pikes Peak Ave, Interval #4**

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB
Directions Served	L	T	T	L	T	TR	L	LT	R	L	R
Maximum Queue (ft)	17	124	148	68	184	163	101	62	53	34	18
Average Queue (ft)	5	74	87	38	127	90	57	28	23	10	3
95th Queue (ft)	22	133	156	81	193	170	109	70	53	33	19
Link Distance (ft)		519	519		490	490	356	356		107	107
Upstream Blk Time (%)											
Queuing Penalty (veh)											
Storage Bay Dist (ft)	80			120					195		
Storage Blk Time (%)		4			9						
Queuing Penalty (veh)		0			5						

**Intersection: 4: Printers Pkwy & Pikes Peak Ave, All Intervals**

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB
Directions Served	L	T	T	L	T	TR	L	LT	R	L	R
Maximum Queue (ft)	31	170	185	133	229	228	144	122	60	38	30
Average Queue (ft)	5	82	94	39	131	96	72	30	19	5	7
95th Queue (ft)	21	145	159	94	212	180	135	83	47	23	27
Link Distance (ft)		519	519		490	490	356	356		107	107
Upstream Blk Time (%)											
Queuing Penalty (veh)											
Storage Bay Dist (ft)	80			120					195		
Storage Blk Time (%)		5		0	10						
Queuing Penalty (veh)		0		0	6						

**Intersection: 12: Union Blvd & Parkside Dr, Interval #1**

Movement	WB	WB	NB	NB	SB	SB	SB
Directions Served	L	R	T	TR	L	T	T
Maximum Queue (ft)	78	65	201	180	150	85	94
Average Queue (ft)	41	33	81	78	89	19	28
95th Queue (ft)	85	65	193	184	158	77	88
Link Distance (ft)		574	615	615		418	418
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)	150				135		
Storage Blk Time (%)					3	0	
Queuing Penalty (veh)					7	0	

**Intersection: 12: Union Blvd & Parkside Dr, Interval #2**

Movement	WB	WB	NB	NB	SB	SB	SB
Directions Served	L	R	T	TR	L	T	T
Maximum Queue (ft)	76	58	146	182	140	56	87
Average Queue (ft)	38	34	86	102	88	13	26
95th Queue (ft)	82	64	199	207	152	51	85
Link Distance (ft)		574	615	615		418	418
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)	150				135		
Storage Blk Time (%)					1		
Queuing Penalty (veh)					3		

**Intersection: 12: Union Blvd & Parkside Dr, Interval #3**

Movement	WB	WB	NB	NB	SB	SB	SB
Directions Served	L	R	T	TR	L	T	T
Maximum Queue (ft)	94	63	204	203	176	69	87
Average Queue (ft)	41	34	106	111	107	17	32
95th Queue (ft)	88	71	216	210	179	66	90
Link Distance (ft)		574	615	615		418	418
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)	150				135		
Storage Blk Time (%)					4		
Queuing Penalty (veh)					12		

**Intersection: 12: Union Blvd & Parkside Dr, Interval #4**

Movement	WB	WB	NB	NB	SB	SB	SB
Directions Served	L	R	T	TR	L	T	T
Maximum Queue (ft)	85	65	207	216	204	109	91
Average Queue (ft)	38	34	96	102	111	24	33
95th Queue (ft)	86	63	202	214	199	104	92
Link Distance (ft)		574	615	615		418	418
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)	150				135		
Storage Blk Time (%)					7		
Queuing Penalty (veh)					16		

**Intersection: 12: Union Blvd & Parkside Dr, All Intervals**

Movement	WB	WB	NB	NB	SB	SB	SB
Directions Served	L	R	T	TR	L	T	T
Maximum Queue (ft)	103	78	235	243	204	141	123
Average Queue (ft)	40	34	93	98	99	18	30
95th Queue (ft)	85	66	204	206	175	77	89
Link Distance (ft)		574	615	615		418	418
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)	150				135		
Storage Blk Time (%)					4	0	
Queuing Penalty (veh)					10	0	

**Intersection: 15: Union Blvd & Platte Ave, Interval #1**

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	NB
Directions Served	L	T	T	R	L	T	T	R	L	T	T	R
Maximum Queue (ft)	91	240	192	81	214	376	357	37	81	285	305	169
Average Queue (ft)	60	172	124	30	140	322	257	18	38	164	182	69
95th Queue (ft)	96	247	201	77	259	430	379	38	74	305	321	195
Link Distance (ft)		406	406			361	361	361		1451	1451	
Upstream Blk Time (%)						7	2					
Queuing Penalty (veh)						0	0					
Storage Bay Dist (ft)	170			35	150				215			115
Storage Blk Time (%)		6	40	6	3	32				7	26	
Queuing Penalty (veh)		6	22	14	14	56				5	30	

**Intersection: 15: Union Blvd & Platte Ave, Interval #1**

Movement	SB	SB	SB
Directions Served	L	T	TR
Maximum Queue (ft)	160	360	327
Average Queue (ft)	63	246	218
95th Queue (ft)	166	362	335
Link Distance (ft)		450	450
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)	305		
Storage Blk Time (%)		4	
Queuing Penalty (veh)		3	

**Intersection: 15: Union Blvd & Platte Ave, Interval #2**

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	NB
Directions Served	L	T	T	R	L	T	T	R	L	T	T	R
Maximum Queue (ft)	106	227	174	69	214	375	356	28	69	318	337	195
Average Queue (ft)	66	165	113	29	133	324	267	12	34	196	216	94
95th Queue (ft)	108	224	196	70	255	421	379	31	71	345	359	231
Link Distance (ft)		406	406			361	361	361		1451	1451	
Upstream Blk Time (%)						7	1					
Queuing Penalty (veh)						0	0					
Storage Bay Dist (ft)	170			35	150				215			115
Storage Blk Time (%)		5	34	8	1	36				11	28	
Queuing Penalty (veh)		4	18	19	4	63				8	32	

**Intersection: 15: Union Blvd & Platte Ave, Interval #2**

Movement	SB	SB	SB
Directions Served	L	T	TR
Maximum Queue (ft)	149	333	319
Average Queue (ft)	56	225	208
95th Queue (ft)	158	343	320
Link Distance (ft)		450	450
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)	305		
Storage Blk Time (%)		2	
Queuing Penalty (veh)		2	

**Intersection: 15: Union Blvd & Platte Ave, Interval #3**

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	NB
Directions Served	L	T	T	R	L	T	T	R	L	T	T	R
Maximum Queue (ft)	103	267	243	82	214	384	364	184	80	308	318	195
Average Queue (ft)	68	180	148	38	133	345	287	54	38	174	193	69
95th Queue (ft)	106	270	243	91	249	432	423	211	83	320	329	193
Link Distance (ft)		406	406			361	361	361		1451	1451	
Upstream Blk Time (%)						16	7	0				
Queuing Penalty (veh)						0	0	0				
Storage Bay Dist (ft)	170			35	150				215			115
Storage Blk Time (%)		10	43	9	0	42				8	24	
Queuing Penalty (veh)		11	25	25	0	82				6	30	

**Intersection: 15: Union Blvd & Platte Ave, Interval #3**

Movement	SB	SB	SB
Directions Served	L	T	TR
Maximum Queue (ft)	76	329	280
Average Queue (ft)	50	237	204
95th Queue (ft)	90	338	294
Link Distance (ft)		450	450
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)	305		
Storage Blk Time (%)		1	
Queuing Penalty (veh)		1	

**Intersection: 15: Union Blvd & Platte Ave, Interval #4**

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	NB
Directions Served	L	T	T	R	L	T	T	R	L	T	T	R
Maximum Queue (ft)	91	231	192	90	214	376	328	59	79	293	328	195
Average Queue (ft)	58	168	123	42	156	297	225	25	49	185	203	76
95th Queue (ft)	112	244	227	92	279	404	334	63	89	328	359	204
Link Distance (ft)		406	406			361	361	361		1451	1451	
Upstream Blk Time (%)						5	1					
Queuing Penalty (veh)						0	0					
Storage Bay Dist (ft)	170			35	150				215			115
Storage Blk Time (%)	0	6	32	9	1	37				7	30	0
Queuing Penalty (veh)	0	6	17	22	6	65				5	34	0

**Intersection: 15: Union Blvd & Platte Ave, Interval #4**

Movement	SB	SB	SB
Directions Served	L	T	TR
Maximum Queue (ft)	101	306	293
Average Queue (ft)	55	235	209
95th Queue (ft)	110	328	307
Link Distance (ft)		450	450
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)	305		
Storage Blk Time (%)		1	
Queuing Penalty (veh)		1	

**Intersection: 15: Union Blvd & Platte Ave, All Intervals**

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	NB
Directions Served	L	T	T	R	L	T	T	R	L	T	T	R
Maximum Queue (ft)	132	278	247	90	215	389	380	188	94	354	367	195
Average Queue (ft)	63	171	127	35	140	322	259	27	40	180	198	77
95th Queue (ft)	107	248	220	83	262	426	385	114	80	326	343	207
Link Distance (ft)		406	406			361	361	361		1451	1451	
Upstream Blk Time (%)						9	3	0				
Queuing Penalty (veh)						0	0	0				
Storage Bay Dist (ft)	170			35	150				215			115
Storage Blk Time (%)	0	7	37	8	1	37				8	27	0
Queuing Penalty (veh)	0	7	21	20	6	67				6	31	0

**Intersection: 15: Union Blvd & Platte Ave, All Intervals**

Movement	SB	SB	SB
Directions Served	L	T	TR
Maximum Queue (ft)	221	378	344
Average Queue (ft)	56	236	210
95th Queue (ft)	136	344	315
Link Distance (ft)		450	450
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)	305		
Storage Blk Time (%)		2	
Queuing Penalty (veh)		2	

**Zone Summary**

Zone wide Queuing Penalty, Interval #1: 540
Zone wide Queuing Penalty, Interval #2: 484
Zone wide Queuing Penalty, Interval #3: 658
Zone wide Queuing Penalty, Interval #4: 576
Zone wide Queuing Penalty, All Intervals: 565

**Intersection: 2: Bonfoy Ave & Pikes Peak Ave, Interval #1**

Movement	EB	EB	WB	WB	NB	NB	SB
Directions Served	L	TR	L	TR	LT	R	LTR
Maximum Queue (ft)	34	14	69	17	109	58	48
Average Queue (ft)	11	2	26	2	69	31	26
95th Queue (ft)	37	17	62	17	121	57	57
Link Distance (ft)		324		725	593		292
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)	50		120			150	
Storage Blk Time (%)	0				1		
Queuing Penalty (veh)	1				0		

**Intersection: 2: Bonfoy Ave & Pikes Peak Ave, Interval #2**

Movement	EB	EB	WB	WB	WB	NB	NB	SB
Directions Served	L	TR	L	T	TR	LT	R	LTR
Maximum Queue (ft)	34	4	73	22	58	123	89	49
Average Queue (ft)	8	1	31	6	11	68	39	26
95th Queue (ft)	31	7	78	34	53	142	89	56
Link Distance (ft)		324		725	725	593		292
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)	50		120				150	
Storage Blk Time (%)	0		1			2		
Queuing Penalty (veh)	0		2			1		

**Intersection: 2: Bonfoy Ave & Pikes Peak Ave, Interval #3**

Movement	EB	EB	WB	WB	WB	NB	NB	SB
Directions Served	L	TR	L	T	TR	LT	R	LTR
Maximum Queue (ft)	25	10	77	43	92	154	116	65
Average Queue (ft)	6	1	40	7	20	90	45	30
95th Queue (ft)	26	15	76	47	80	166	111	70
Link Distance (ft)		324		725	725	593		292
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)	50		120				150	
Storage Blk Time (%)	0			0		4		
Queuing Penalty (veh)	0			0		3		

**Intersection: 2: Bonfoy Ave & Pikes Peak Ave, Interval #4**

Movement	EB	EB	WB	WB	WB	NB	NB	SB
Directions Served	L	T	L	T	TR	LT	R	LTR
Maximum Queue (ft)	19	4	72	25	38	107	40	53
Average Queue (ft)	4	1	37	6	6	60	32	26
95th Queue (ft)	22	7	86	37	54	106	46	55
Link Distance (ft)		324		725	725	593		292
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)	50		120				150	
Storage Blk Time (%)	0		1	0		0		
Queuing Penalty (veh)	0		2	0		0		

**Intersection: 2: Bonfoy Ave & Pikes Peak Ave, All Intervals**

Movement	EB	EB	EB	WB	WB	WB	NB	NB	SB
Directions Served	L	T	TR	L	T	TR	LT	R	LTR
Maximum Queue (ft)	38	4	24	103	68	106	166	122	86
Average Queue (ft)	7	0	1	34	5	10	72	37	27
95th Queue (ft)	30	3	12	77	34	55	138	82	60
Link Distance (ft)		324	324		725	725	593		292
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)	50			120				150	
Storage Blk Time (%)	0			0	0		2		
Queuing Penalty (veh)	0			1	0		1		

**Intersection: 13: Union Blvd & Memorial Dr, Interval #1**

Movement	EB	NB	SB
Directions Served	LR	L	R
Maximum Queue (ft)	84	24	13
Average Queue (ft)	40	8	2
95th Queue (ft)	91	30	19
Link Distance (ft)	389		
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)		60	175
Storage Blk Time (%)			
Queuing Penalty (veh)			

**Intersection: 13: Union Blvd & Memorial Dr, Interval #2**

Movement	EB	NB	SB
Directions Served	LR	L	T
Maximum Queue (ft)	60	25	6
Average Queue (ft)	28	11	1
95th Queue (ft)	55	35	9
Link Distance (ft)	389		88
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)		60	
Storage Blk Time (%)			
Queuing Penalty (veh)			

**Intersection: 13: Union Blvd & Memorial Dr, Interval #3**

Movement	EB	NB	SB
Directions Served	LR	L	R
Maximum Queue (ft)	105	38	13
Average Queue (ft)	53	17	2
95th Queue (ft)	111	44	13
Link Distance (ft)	389		
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)		60	175
Storage Blk Time (%)		0	
Queuing Penalty (veh)		0	

**Intersection: 13: Union Blvd & Memorial Dr, Interval #4**

Movement	EB	NB	SB
Directions Served	LR	L	R
Maximum Queue (ft)	70	31	13
Average Queue (ft)	37	11	0
95th Queue (ft)	74	35	0
Link Distance (ft)	389		
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)		60	175
Storage Blk Time (%)			
Queuing Penalty (veh)			

**Intersection: 13: Union Blvd & Memorial Dr, All Intervals**

Movement	EB	NB	SB	SB
Directions Served	LR	L	T	R
Maximum Queue (ft)	118	38	6	26
Average Queue (ft)	40	12	0	1
95th Queue (ft)	87	36	4	12
Link Distance (ft)	389		88	
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)		60		175
Storage Blk Time (%)		0		
Queuing Penalty (veh)		0		

**Intersection: 14: Union Blvd & W Site Access, Interval #1**

Movement	WB	WB	NB	SB
Directions Served	L	R	TR	L
Maximum Queue (ft)	61	69	15	52
Average Queue (ft)	29	39	2	24
95th Queue (ft)	60	68	18	57
Link Distance (ft)		327	88	
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)	150			175
Storage Blk Time (%)				
Queuing Penalty (veh)				

**Intersection: 14: Union Blvd & W Site Access, Interval #2**

Movement	WB	WB	SB
Directions Served	L	R	L
Maximum Queue (ft)	64	57	52
Average Queue (ft)	29	39	30
95th Queue (ft)	66	58	54
Link Distance (ft)		327	
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)	150		175
Storage Blk Time (%)			
Queuing Penalty (veh)			

**Intersection: 14: Union Blvd & W Site Access, Interval #3**

Movement	WB	WB	NB	NB	SB
Directions Served	L	R	T	TR	L
Maximum Queue (ft)	88	70	7	13	48
Average Queue (ft)	40	42	1	2	24
95th Queue (ft)	85	67	11	12	54
Link Distance (ft)		327	88	88	
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)	150				175
Storage Blk Time (%)					
Queuing Penalty (veh)					

**Intersection: 14: Union Blvd & W Site Access, Interval #4**

Movement	WB	WB	NB	SB
Directions Served	L	R	TR	L
Maximum Queue (ft)	94	56	4	48
Average Queue (ft)	50	37	0	20
95th Queue (ft)	103	60	0	46
Link Distance (ft)		327	88	
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)	150			175
Storage Blk Time (%)	0			
Queuing Penalty (veh)	0			

**Intersection: 14: Union Blvd & W Site Access, All Intervals**

Movement	WB	WB	NB	NB	SB
Directions Served	L	R	T	TR	L
Maximum Queue (ft)	106	78	7	24	58
Average Queue (ft)	37	39	0	1	24
95th Queue (ft)	82	64	5	11	53
Link Distance (ft)		327	88	88	
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)	150				175
Storage Blk Time (%)	0				
Queuing Penalty (veh)	0				

**Zone Summary**

Zone wide Queuing Penalty, Interval #1: 1
Zone wide Queuing Penalty, Interval #2: 3
Zone wide Queuing Penalty, Interval #3: 3
Zone wide Queuing Penalty, Interval #4: 2
Zone wide Queuing Penalty, All Intervals: 2

**Intersection: 1: Union Blvd & Pikes Peak Ave, Interval #1**

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB	NB	NB	SB
Directions Served	L	T	T	R	L	T	TR	L	T	T	R	L
Maximum Queue (ft)	267	411	441	225	135	261	274	228	279	300	80	214
Average Queue (ft)	197	272	292	130	71	177	199	150	203	222	47	166
95th Queue (ft)	353	476	468	283	136	282	302	272	290	303	101	274
Link Distance (ft)		825	825			324	324		748	748		
Upstream Blk Time (%)						1	1					
Queuing Penalty (veh)						5	4					
Storage Bay Dist (ft)	300			125	150			500			35	125
Storage Blk Time (%)	12	2	38		1	18				51	7	9
Queuing Penalty (veh)	44	4	59		2	23				63	24	32

**Intersection: 1: Union Blvd & Pikes Peak Ave, Interval #1**

Movement	SB	SB
Directions Served	T	TR
Maximum Queue (ft)	421	432
Average Queue (ft)	327	338
95th Queue (ft)	431	445
Link Distance (ft)	1451	1451
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)	59	
Queuing Penalty (veh)	96	

**Intersection: 1: Union Blvd & Pikes Peak Ave, Interval #2**

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB	NB	NB	SB
Directions Served	L	T	T	R	L	T	TR	L	T	T	R	L
Maximum Queue (ft)	252	338	399	225	199	275	291	220	258	292	80	215
Average Queue (ft)	173	224	246	120	91	201	223	148	191	232	41	174
95th Queue (ft)	305	349	388	263	176	305	313	243	273	318	99	263
Link Distance (ft)		825	825			324	324		748	748		
Upstream Blk Time (%)							0					
Queuing Penalty (veh)							0					
Storage Bay Dist (ft)	300			125	150			500			35	125
Storage Blk Time (%)	3	1	34		0	21				50	4	9
Queuing Penalty (veh)	10	2	52		0	26				62	13	35

**Intersection: 1: Union Blvd & Pikes Peak Ave, Interval #2**

Movement	SB	SB
Directions Served	T	TR
Maximum Queue (ft)	526	520
Average Queue (ft)	416	421
95th Queue (ft)	594	593
Link Distance (ft)	1451	1451
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)	61	
Queuing Penalty (veh)	98	

**Intersection: 1: Union Blvd & Pikes Peak Ave, Interval #3**

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB	NB	NB	SB
Directions Served	L	T	T	R	L	T	TR	L	T	T	R	L
Maximum Queue (ft)	260	308	371	224	199	296	298	237	316	338	72	215
Average Queue (ft)	181	229	267	96	81	204	213	157	227	252	35	174
95th Queue (ft)	286	302	385	232	176	312	321	254	346	359	88	261
Link Distance (ft)		825	825			324	324		748	748		
Upstream Blk Time (%)						0	1					
Queuing Penalty (veh)						1	3					
Storage Bay Dist (ft)	300			125	150			500			35	125
Storage Blk Time (%)	0	0	41	0	1	23				54	3	14
Queuing Penalty (veh)	2	1	69	0	3	32				72	13	60

**Intersection: 1: Union Blvd & Pikes Peak Ave, Interval #3**

Movement	SB	SB
Directions Served	T	TR
Maximum Queue (ft)	655	661
Average Queue (ft)	538	543
95th Queue (ft)	755	759
Link Distance (ft)	1451	1451
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)	64	
Queuing Penalty (veh)	114	

**Intersection: 1: Union Blvd & Pikes Peak Ave, Interval #4**

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB	NB	NB	SB
Directions Served	L	T	T	R	L	T	TR	L	T	T	R	L
Maximum Queue (ft)	260	301	345	225	199	300	297	295	308	330	80	214
Average Queue (ft)	164	223	255	148	114	233	233	237	214	241	39	158
95th Queue (ft)	274	328	379	289	223	323	318	382	302	332	92	261
Link Distance (ft)		825	825			324	324		748	748		
Upstream Blk Time (%)						1	0					
Queuing Penalty (veh)						3	2					
Storage Bay Dist (ft)	300			125	150			500			35	125
Storage Blk Time (%)	1	1	38	0	0	27				52	5	13
Queuing Penalty (veh)	2	1	60	1	1	34				65	18	50

**Intersection: 1: Union Blvd & Pikes Peak Ave, Interval #4**

Movement	SB	SB
Directions Served	T	TR
Maximum Queue (ft)	582	604
Average Queue (ft)	395	398
95th Queue (ft)	595	603
Link Distance (ft)	1451	1451
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)	59	
Queuing Penalty (veh)	96	

**Intersection: 1: Union Blvd & Pikes Peak Ave, All Intervals**

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB	NB	NB	SB
Directions Served	L	T	T	R	L	T	TR	L	T	T	R	L
Maximum Queue (ft)	298	430	488	225	200	318	322	329	343	368	80	215
Average Queue (ft)	179	237	265	123	89	204	217	173	209	237	40	168
95th Queue (ft)	308	376	410	270	183	311	316	305	306	330	95	266
Link Distance (ft)		825	825			324	324		748	748		
Upstream Blk Time (%)						0	1					
Queuing Penalty (veh)						2	2					
Storage Bay Dist (ft)	300			125	150			500			35	125
Storage Blk Time (%)	4	1	38	0	0	22				52	5	11
Queuing Penalty (veh)	14	2	60	0	2	29				65	17	44

**Intersection: 1: Union Blvd & Pikes Peak Ave, All Intervals**

Movement	SB	SB
Directions Served	T	TR
Maximum Queue (ft)	676	692
Average Queue (ft)	419	425
95th Queue (ft)	639	643
Link Distance (ft)	1451	1451
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)	61	
Queuing Penalty (veh)	101	

**Intersection: 3: Iowa Ave & Pikes Peak Ave, Interval #1**

Movement	EB	EB	EB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	TR	L	T	TR	L	TR	L	TR
Maximum Queue (ft)	38	162	238	45	128	121	130	152	44	125
Average Queue (ft)	10	94	137	28	78	73	60	96	19	64
95th Queue (ft)	37	181	244	56	128	129	137	171	48	125
Link Distance (ft)		725	725		519	519	493		316	316
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)	120			120				150		
Storage Blk Time (%)		7			1		0	2		
Queuing Penalty (veh)		2			0		0	3		

**Intersection: 3: Iowa Ave & Pikes Peak Ave, Interval #2**

Movement	EB	EB	EB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	TR	L	T	TR	L	TR	L	TR
Maximum Queue (ft)	45	141	183	55	112	133	122	136	57	163
Average Queue (ft)	19	89	124	29	79	88	76	79	30	75
95th Queue (ft)	50	153	195	61	122	137	154	155	64	167
Link Distance (ft)		725	725		519	519	493		316	316
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)	120			120					150	
Storage Blk Time (%)		3			1		0	2		
Queuing Penalty (veh)		1			1		0	3		

**Intersection: 3: Iowa Ave & Pikes Peak Ave, Interval #3**

Movement	EB	EB	EB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	TR	L	T	TR	L	TR	L	TR
Maximum Queue (ft)	46	169	220	54	152	153	175	147	56	161
Average Queue (ft)	21	102	136	24	92	94	81	86	24	101
95th Queue (ft)	50	176	219	56	154	162	160	152	61	185
Link Distance (ft)		725	725		519	519	493		316	316
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)	120			120					150	
Storage Blk Time (%)		7			3		1	1		
Queuing Penalty (veh)		3			1		3	2		

**Intersection: 3: Iowa Ave & Pikes Peak Ave, Interval #4**

Movement	EB	EB	EB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	TR	L	T	TR	L	TR	L	TR
Maximum Queue (ft)	37	169	204	61	144	129	134	143	52	141
Average Queue (ft)	15	100	138	30	82	79	69	88	24	82
95th Queue (ft)	41	180	208	65	148	142	147	158	54	144
Link Distance (ft)		725	725		519	519	493		316	316
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)	120			120					150	
Storage Blk Time (%)		6			2		1	1		
Queuing Penalty (veh)		2			1		1	1		

**Intersection: 3: Iowa Ave & Pikes Peak Ave, All Intervals**

Movement	EB	EB	EB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	TR	L	T	TR	L	TR	L	TR
Maximum Queue (ft)	59	189	261	70	163	155	200	171	57	195
Average Queue (ft)	17	96	134	28	83	84	72	88	24	80
95th Queue (ft)	45	173	219	60	140	144	151	160	58	160
Link Distance (ft)		725	725		519	519	493		316	316
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)	120			120				150		
Storage Blk Time (%)		6			2		1	2		
Queuing Penalty (veh)		2			1		1	2		

**Intersection: 4: Printers Pkwy & Pikes Peak Ave, Interval #1**

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	T	T	L	T	TR	L	LT	R	L	T	R
Maximum Queue (ft)	28	97	106	48	175	165	109	74	50	33	24	24
Average Queue (ft)	9	53	70	26	122	90	65	29	27	9	7	6
95th Queue (ft)	29	105	117	55	184	167	114	72	53	32	26	26
Link Distance (ft)		519	519		490	490	356	356		107	107	107
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	80			120					195			
Storage Blk Time (%)		5			10							
Queuing Penalty (veh)		1			3							

**Intersection: 4: Printers Pkwy & Pikes Peak Ave, Interval #2**

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	T	T	L	T	TR	L	LT	R	L	T	R
Maximum Queue (ft)	30	108	121	66	209	153	128	76	37	48	18	30
Average Queue (ft)	10	56	66	25	127	79	74	31	24	13	2	7
95th Queue (ft)	31	116	129	74	216	156	142	75	46	46	14	27
Link Distance (ft)		519	519		490	490	356	356		107	107	107
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	80			120					195			
Storage Blk Time (%)		5			8							
Queuing Penalty (veh)		1			2							

**Intersection: 4: Printers Pkwy & Pikes Peak Ave, Interval #3**

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	T	T	L	T	TR	L	LT	R	L	T	R
Maximum Queue (ft)	22	93	114	56	222	165	153	118	58	30	24	30
Average Queue (ft)	8	56	71	24	135	89	88	60	29	10	5	9
95th Queue (ft)	25	107	120	63	220	168	159	129	57	31	21	31
Link Distance (ft)		519	519		490	490	356	356		107	107	107
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	80			120					195			
Storage Blk Time (%)		5			11							
Queuing Penalty (veh)		1			4							

**Intersection: 4: Printers Pkwy & Pikes Peak Ave, Interval #4**

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	T	T	L	T	TR	L	LT	R	L	T	R
Maximum Queue (ft)	26	94	107	44	165	141	134	110	39	34	18	30
Average Queue (ft)	9	46	61	25	120	67	71	28	26	12	5	10
95th Queue (ft)	30	94	115	52	187	137	135	80	48	36	22	33
Link Distance (ft)		519	519		490	490	356	356		107	107	107
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	80			120					195			
Storage Blk Time (%)		1			9							
Queuing Penalty (veh)		0			3							

**Intersection: 4: Printers Pkwy & Pikes Peak Ave, All Intervals**

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	T	T	L	T	TR	L	LT	R	L	T	R
Maximum Queue (ft)	31	123	139	74	230	188	155	119	58	49	30	30
Average Queue (ft)	9	53	67	25	126	81	74	37	26	11	5	8
95th Queue (ft)	29	106	121	62	203	159	139	94	51	37	21	30
Link Distance (ft)		519	519		490	490	356	356		107	107	107
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	80			120					195			
Storage Blk Time (%)		4			9							
Queuing Penalty (veh)		1			3							

**Intersection: 12: Union Blvd & Parkside Dr, Interval #1**

Movement	WB	WB	NB	NB	SB	SB	SB
Directions Served	L	R	T	TR	L	T	T
Maximum Queue (ft)	127	122	124	65	48	199	217
Average Queue (ft)	70	75	70	32	23	71	87
95th Queue (ft)	129	125	137	79	51	185	209
Link Distance (ft)		574	615	615		418	418
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)	150				135		
Storage Blk Time (%)	0	0				2	
Queuing Penalty (veh)	0	0				1	

**Intersection: 12: Union Blvd & Parkside Dr, Interval #2**

Movement	WB	WB	NB	NB	SB	SB	SB
Directions Served	L	R	T	TR	L	T	T
Maximum Queue (ft)	105	97	125	94	40	153	164
Average Queue (ft)	72	65	63	42	20	69	91
95th Queue (ft)	117	101	121	102	48	165	186
Link Distance (ft)		574	615	615		418	418
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)	150				135		
Storage Blk Time (%)						1	
Queuing Penalty (veh)						0	

**Intersection: 12: Union Blvd & Parkside Dr, Interval #3**

Movement	WB	WB	NB	NB	SB	SB	SB
Directions Served	L	R	T	TR	L	T	T
Maximum Queue (ft)	129	143	162	112	49	137	164
Average Queue (ft)	84	86	83	55	21	64	84
95th Queue (ft)	135	156	157	115	51	137	169
Link Distance (ft)		574	615	615		418	418
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)	150				135		
Storage Blk Time (%)	0	1				1	
Queuing Penalty (veh)	1	2				0	

**Intersection: 12: Union Blvd & Parkside Dr, Interval #4**

Movement	WB	WB	NB	NB	SB	SB	SB
Directions Served	L	R	T	TR	L	T	T
Maximum Queue (ft)	114	118	126	96	40	149	170
Average Queue (ft)	68	79	74	39	19	67	88
95th Queue (ft)	116	119	130	94	48	151	181
Link Distance (ft)		574	615	615		418	418
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)	150				135		
Storage Blk Time (%)	0	0				1	
Queuing Penalty (veh)	0	0				0	

**Intersection: 12: Union Blvd & Parkside Dr, All Intervals**

Movement	WB	WB	NB	NB	SB	SB	SB
Directions Served	L	R	T	TR	L	T	T
Maximum Queue (ft)	136	165	195	128	58	202	225
Average Queue (ft)	74	76	73	42	21	68	87
95th Queue (ft)	126	129	138	99	50	161	187
Link Distance (ft)		574	615	615		418	418
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)	150				135		
Storage Blk Time (%)	0	0				1	
Queuing Penalty (veh)	0	0				0	

**Intersection: 15: Union Blvd & Platte Ave, Interval #1**

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	NB
Directions Served	L	T	T	R	L	T	T	R	L	T	T	R
Maximum Queue (ft)	290	436	417	78	214	339	277	37	153	301	332	195
Average Queue (ft)	222	365	321	25	119	264	205	17	79	236	259	131
95th Queue (ft)	343	490	455	83	224	367	279	40	156	338	357	261
Link Distance (ft)		406	406			361	361	361		1451	1451	
Upstream Blk Time (%)		10	4			2						
Queuing Penalty (veh)		0	0			0						
Storage Bay Dist (ft)	170			35	150				215			115
Storage Blk Time (%)	11	40	59	4	2	34				17	47	0
Queuing Penalty (veh)	52	95	26	19	8	46				19	69	0

**Intersection: 15: Union Blvd & Platte Ave, Interval #1**

Movement	SB	SB	SB
Directions Served	L	T	TR
Maximum Queue (ft)	207	394	359
Average Queue (ft)	85	274	263
95th Queue (ft)	201	422	373
Link Distance (ft)		450	450
Upstream Blk Time (%)		0	
Queuing Penalty (veh)		0	
Storage Bay Dist (ft)	305		
Storage Blk Time (%)		6	
Queuing Penalty (veh)		7	

**Intersection: 15: Union Blvd & Platte Ave, Interval #2**

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	NB
Directions Served	L	T	T	R	L	T	T	R	L	T	T	R
Maximum Queue (ft)	290	423	420	78	214	374	323	37	208	352	350	195
Average Queue (ft)	239	366	321	25	146	282	223	16	95	249	260	124
95th Queue (ft)	359	471	442	82	253	406	325	40	218	354	367	253
Link Distance (ft)		406	406			361	361	361		1451	1451	
Upstream Blk Time (%)		8	2			2	0					
Queuing Penalty (veh)		0	0			0	0					
Storage Bay Dist (ft)	170			35	150				215			115
Storage Blk Time (%)	16	37	61	3	1	33			0	21	47	1
Queuing Penalty (veh)	77	86	27	15	2	45			0	24	68	3

**Intersection: 15: Union Blvd & Platte Ave, Interval #2**

Movement	SB	SB	SB
Directions Served	L	T	TR
Maximum Queue (ft)	201	434	370
Average Queue (ft)	74	290	261
95th Queue (ft)	193	428	366
Link Distance (ft)		450	450
Upstream Blk Time (%)		1	
Queuing Penalty (veh)		0	
Storage Bay Dist (ft)	305		
Storage Blk Time (%)	0	7	
Queuing Penalty (veh)	0	7	

**Intersection: 15: Union Blvd & Platte Ave, Interval #3**

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	NB
Directions Served	L	T	T	R	L	T	T	R	L	T	T	R
Maximum Queue (ft)	290	436	430	78	214	367	299	40	184	387	420	195
Average Queue (ft)	251	401	369	25	143	294	230	20	82	268	296	106
95th Queue (ft)	359	483	479	80	256	406	328	43	191	395	427	237
Link Distance (ft)		406	406			361	361	361		1451	1451	
Upstream Blk Time (%)		27	21			3						
Queuing Penalty (veh)		0	0			0						
Storage Bay Dist (ft)	170			35	150				215			115
Storage Blk Time (%)	37	53	61	3	4	38				22	53	2
Queuing Penalty (veh)	193	133	29	17	14	58				26	83	7

**Intersection: 15: Union Blvd & Platte Ave, Interval #3**

Movement	SB	SB	SB
Directions Served	L	T	TR
Maximum Queue (ft)	218	426	391
Average Queue (ft)	94	305	291
95th Queue (ft)	244	436	415
Link Distance (ft)		450	450
Upstream Blk Time (%)		0	
Queuing Penalty (veh)		0	
Storage Bay Dist (ft)	305		
Storage Blk Time (%)	0	8	
Queuing Penalty (veh)	0	10	

**Intersection: 15: Union Blvd & Platte Ave, Interval #4**

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	NB
Directions Served	L	T	T	R	L	T	T	R	L	T	T	R
Maximum Queue (ft)	290	434	428	72	214	362	316	32	170	337	342	195
Average Queue (ft)	245	401	370	11	132	274	211	16	99	244	267	134
95th Queue (ft)	366	476	468	58	247	397	325	39	182	338	355	263
Link Distance (ft)		406	406			361	361	361		1451	1451	
Upstream Blk Time (%)		18	10			3	0					
Queuing Penalty (veh)		0	0			0	0					
Storage Bay Dist (ft)	170			35	150				215			115
Storage Blk Time (%)	23	46	63	1	7	33			0	17	49	2
Queuing Penalty (veh)	115	108	28	5	24	45			0	20	72	9

**Intersection: 15: Union Blvd & Platte Ave, Interval #4**

Movement	SB	SB	SB
Directions Served	L	T	TR
Maximum Queue (ft)	200	373	325
Average Queue (ft)	88	270	246
95th Queue (ft)	204	385	345
Link Distance (ft)		450	450
Upstream Blk Time (%)		0	
Queuing Penalty (veh)		0	
Storage Bay Dist (ft)	305		
Storage Blk Time (%)		7	
Queuing Penalty (veh)		8	

**Intersection: 15: Union Blvd & Platte Ave, All Intervals**

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	NB
Directions Served	L	T	T	R	L	T	T	R	L	T	T	R
Maximum Queue (ft)	290	448	432	90	214	383	349	55	290	412	420	195
Average Queue (ft)	239	383	345	22	135	278	217	17	89	249	271	124
95th Queue (ft)	358	486	469	77	246	396	317	41	190	359	381	255
Link Distance (ft)		406	406			361	361	361		1451	1451	
Upstream Blk Time (%)		16	9			3	0					
Queuing Penalty (veh)		0	0			0	0					
Storage Bay Dist (ft)	170			35	150				215			115
Storage Blk Time (%)	22	44	61	3	3	35			0	19	49	1
Queuing Penalty (veh)	109	106	27	14	12	48			0	22	73	5

**Intersection: 15: Union Blvd & Platte Ave, All Intervals**

Movement	SB	SB	SB
Directions Served	L	T	TR
Maximum Queue (ft)	297	457	408
Average Queue (ft)	85	285	265
95th Queue (ft)	212	420	378
Link Distance (ft)		450	450
Upstream Blk Time (%)		0	
Queuing Penalty (veh)		0	
Storage Bay Dist (ft)	305		
Storage Blk Time (%)	0	7	
Queuing Penalty (veh)	0	8	

**Zone Summary**

Zone wide Queuing Penalty, Interval #1: 708
Zone wide Queuing Penalty, Interval #2: 662
Zone wide Queuing Penalty, Interval #3: 953
Zone wide Queuing Penalty, Interval #4: 773
Zone wide Queuing Penalty, All Intervals: 774

**Intersection: 2: Bonfoy Ave & Pikes Peak Ave, Interval #1**

Movement	EB	EB	EB	WB	WB	WB	NB	NB	SB
Directions Served	L	T	TR	L	T	TR	LT	R	LTR
Maximum Queue (ft)	28	11	13	55	17	30	262	112	55
Average Queue (ft)	10	2	2	28	3	5	171	52	32
95th Queue (ft)	35	17	12	61	27	35	320	175	64
Link Distance (ft)		324	324		725	725	593		292
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)	50			120				200	
Storage Blk Time (%)	0	0					5		
Queuing Penalty (veh)	1	0					4		

**Intersection: 2: Bonfoy Ave & Pikes Peak Ave, Interval #2**

Movement	EB	EB	EB	WB	WB	WB	NB	NB	SB
Directions Served	L	T	TR	L	T	TR	LT	R	LTR
Maximum Queue (ft)	38	11	28	62	5	21	202	115	48
Average Queue (ft)	12	2	5	26	1	3	127	43	25
95th Queue (ft)	39	16	26	60	10	27	238	132	52
Link Distance (ft)		324	324		725	725	593		292
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)	50			120				200	
Storage Blk Time (%)	0	0					2		
Queuing Penalty (veh)	1	0					1		

**Intersection: 2: Bonfoy Ave & Pikes Peak Ave, Interval #3**

Movement	EB	EB	EB	WB	WB	WB	NB	NB	SB
Directions Served	L	T	TR	L	T	TR	LT	R	LTR
Maximum Queue (ft)	43	5	28	54	18	34	378	183	60
Average Queue (ft)	15	0	6	32	1	7	192	46	29
95th Queue (ft)	48	0	29	65	10	37	359	138	66
Link Distance (ft)		324	324		725	725	593		292
Upstream Blk Time (%)							1		
Queuing Penalty (veh)							0		
Storage Bay Dist (ft)	50			120				200	
Storage Blk Time (%)	2						8		
Queuing Penalty (veh)	7						7		

**Intersection: 2: Bonfoy Ave & Pikes Peak Ave, Interval #4**

Movement	EB	EB	EB	WB	WB	WB	NB	NB	SB
Directions Served	L	T	TR	L	T	TR	LT	R	LTR
Maximum Queue (ft)	39	7	20	58	18	56	459	291	62
Average Queue (ft)	16	1	5	28	4	11	350	130	29
95th Queue (ft)	44	10	23	56	27	61	667	377	66
Link Distance (ft)		324	324		725	725	593		292
Upstream Blk Time (%)							22		
Queuing Penalty (veh)							0		
Storage Bay Dist (ft)	50			120				200	
Storage Blk Time (%)	1						37		
Queuing Penalty (veh)	2						30		

**Intersection: 2: Bonfoy Ave & Pikes Peak Ave, All Intervals**

Movement	EB	EB	EB	WB	WB	WB	NB	NB	SB
Directions Served	L	T	TR	L	T	TR	LT	R	LTR
Maximum Queue (ft)	57	29	40	78	31	82	472	291	78
Average Queue (ft)	13	1	4	28	2	7	210	68	28
95th Queue (ft)	42	13	23	61	20	42	455	231	63
Link Distance (ft)		324	324		725	725	593		292
Upstream Blk Time (%)							6		
Queuing Penalty (veh)							0		
Storage Bay Dist (ft)	50			120				200	
Storage Blk Time (%)	1	0					13		
Queuing Penalty (veh)	3	0					11		

**Intersection: 2: Bonfoy Ave & Pikes Peak Ave, Interval #1**

Movement	EB	EB	EB	WB	WB	WB	NB	NB	SB
Directions Served	L	T	TR	L	T	TR	LT	R	LTR
Maximum Queue (ft)	39	11	13	54	20	9	206	53	57
Average Queue (ft)	9	0	3	28	3	1	125	35	29
95th Queue (ft)	35	0	16	57	30	13	225	55	62
Link Distance (ft)		324	324		725	725	769		292
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)	50			120				250	
Storage Blk Time (%)	0						1		
Queuing Penalty (veh)	1						1		

**Intersection: 2: Bonfoy Ave & Pikes Peak Ave, Interval #2**

Movement	EB	EB	WB	WB	WB	NB	NB	SB	
Directions Served	L	TR	L	T	TR	LT	R	LTR	
Maximum Queue (ft)	41	23	59	14	21	207	60	57	
Average Queue (ft)	11	5	29	2	4	121	38	29	
95th Queue (ft)	37	25	66	21	24	229	61	61	
Link Distance (ft)		324		725	725	769		292	
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)	50		120				250		
Storage Blk Time (%)	1					0			
Queuing Penalty (veh)	3					0			

**Intersection: 2: Bonfoy Ave & Pikes Peak Ave, Interval #3**

Movement	EB	EB	EB	WB	WB	WB	NB	NB	SB
Directions Served	L	T	TR	L	T	TR	LT	R	LTR
Maximum Queue (ft)	30	4	26	70	9	24	267	102	69
Average Queue (ft)	12	1	6	37	1	8	187	62	37
95th Queue (ft)	37	6	24	71	13	43	383	205	65
Link Distance (ft)		324	324		725	725	769		292
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)	50			120				250	
Storage Blk Time (%)	0						13	0	
Queuing Penalty (veh)	2						11	0	

**Intersection: 2: Bonfoy Ave & Pikes Peak Ave, Interval #4**

Movement	EB	EB	EB	WB	WB	NB	NB	SB
Directions Served	L	T	TR	L	TR	LT	R	LTR
Maximum Queue (ft)	28	8	13	38	16	252	112	52
Average Queue (ft)	14	1	2	23	2	166	41	27
95th Queue (ft)	39	12	12	41	16	284	121	56
Link Distance (ft)		324	324		725	769		292
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)	50			120			250	
Storage Blk Time (%)	0	0				3		
Queuing Penalty (veh)	0	0				3		

**Intersection: 2: Bonfoy Ave & Pikes Peak Ave, All Intervals**

Movement	EB	EB	EB	WB	WB	WB	NB	NB	SB
Directions Served	L	T	TR	L	T	TR	LT	R	LTR
Maximum Queue (ft)	54	23	37	75	34	37	320	156	70
Average Queue (ft)	11	0	4	29	2	4	150	44	30
95th Queue (ft)	37	7	20	61	19	26	293	129	62
Link Distance (ft)		324	324		725	725	769		292
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)	50			120				250	
Storage Blk Time (%)	0	0					4	0	
Queuing Penalty (veh)	2	0					4	0	

**Intersection: 13: Union Blvd & Memorial Dr, Interval #1**

Movement	EB	NB	NB	SB
Directions Served	LR	L	T	R
Maximum Queue (ft)	87	52	17	4
Average Queue (ft)	41	24	0	0
95th Queue (ft)	94	53	0	0
Link Distance (ft)	389		418	
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)		60		175
Storage Blk Time (%)		1		
Queuing Penalty (veh)		4		

**Intersection: 13: Union Blvd & Memorial Dr, Interval #2**

Movement	EB	NB
Directions Served	LR	L
Maximum Queue (ft)	125	53
Average Queue (ft)	72	23
95th Queue (ft)	192	57
Link Distance (ft)	389	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)	60	
Storage Blk Time (%)	1	
Queuing Penalty (veh)	4	

**Intersection: 13: Union Blvd & Memorial Dr, Interval #3**

Movement	EB	NB	SB
Directions Served	LR	L	T
Maximum Queue (ft)	107	39	6
Average Queue (ft)	45	25	1
95th Queue (ft)	85	47	9
Link Distance (ft)	389	88	
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)	60		
Storage Blk Time (%)	0		
Queuing Penalty (veh)	0		

**Intersection: 13: Union Blvd & Memorial Dr, Interval #4**

Movement	EB	NB	SB
Directions Served	LR	L	R
Maximum Queue (ft)	105	57	9
Average Queue (ft)	53	26	1
95th Queue (ft)	115	64	10
Link Distance (ft)	389		
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)	60	175	
Storage Blk Time (%)	1		
Queuing Penalty (veh)	5		

**Intersection: 13: Union Blvd & Memorial Dr, All Intervals**

Movement	EB	NB	NB	SB	SB
Directions Served	LR	L	T	T	R
Maximum Queue (ft)	154	72	17	6	13
Average Queue (ft)	53	25	0	0	0
95th Queue (ft)	131	56	0	4	5
Link Distance (ft)	389		418	88	
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)		60		175	
Storage Blk Time (%)		1			
Queuing Penalty (veh)		3			

**Intersection: 14: Union Blvd & W Site Access, Interval #1**

Movement	WB	WB	NB	SB
Directions Served	L	R	TR	L
Maximum Queue (ft)	98	68	6	62
Average Queue (ft)	51	43	1	37
95th Queue (ft)	93	70	9	66
Link Distance (ft)		327	88	
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)	150		175	
Storage Blk Time (%)				
Queuing Penalty (veh)				

**Intersection: 14: Union Blvd & W Site Access, Interval #2**

Movement	WB	WB	NB	SB
Directions Served	L	R	TR	L
Maximum Queue (ft)	97	57	14	74
Average Queue (ft)	62	41	3	41
95th Queue (ft)	104	63	18	91
Link Distance (ft)		327	88	
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)	150		175	
Storage Blk Time (%)				
Queuing Penalty (veh)				

**Intersection: 14: Union Blvd & W Site Access, Interval #3**

Movement	WB	WB	NB	SB
Directions Served	L	R	TR	L
Maximum Queue (ft)	166	166	4	83
Average Queue (ft)	110	72	1	47
95th Queue (ft)	193	195	7	87
Link Distance (ft)		327	88	
Upstream Blk Time (%)		3		
Queuing Penalty (veh)		0		
Storage Bay Dist (ft)	150			175
Storage Blk Time (%)	12			
Queuing Penalty (veh)	15			

**Intersection: 14: Union Blvd & W Site Access, Interval #4**

Movement	WB	WB	NB	NB	SB
Directions Served	L	R	T	TR	L
Maximum Queue (ft)	143	146	6	9	84
Average Queue (ft)	104	93	1	2	49
95th Queue (ft)	195	260	8	12	86
Link Distance (ft)		327	88	88	
Upstream Blk Time (%)		3			
Queuing Penalty (veh)		0			
Storage Bay Dist (ft)	150				175
Storage Blk Time (%)	15	0			
Queuing Penalty (veh)	16	0			

**Intersection: 14: Union Blvd & W Site Access, All Intervals**

Movement	WB	WB	NB	NB	SB
Directions Served	L	R	T	TR	L
Maximum Queue (ft)	166	187	6	29	104
Average Queue (ft)	82	62	0	2	43
95th Queue (ft)	162	173	4	12	84
Link Distance (ft)		327	88	88	
Upstream Blk Time (%)		1			
Queuing Penalty (veh)		0			
Storage Bay Dist (ft)	150				175
Storage Blk Time (%)	7	0			
Queuing Penalty (veh)	8	0			

**Zone Summary**

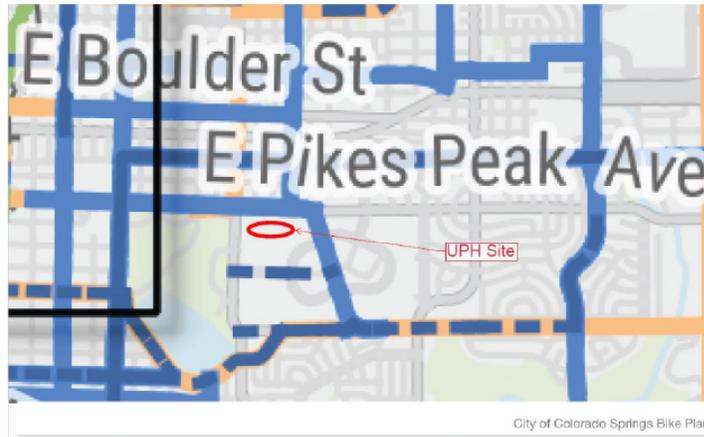
Zone wide Queuing Penalty, Interval #1: 11
Zone wide Queuing Penalty, Interval #2: 25
Zone wide Queuing Penalty, Interval #3: 53
Zone wide Queuing Penalty, Interval #4: 60
Zone wide Queuing Penalty, All Intervals: 37

# Appendix A – Bike Vision Network

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**Appendix \_\_:**  
**Implementation**  
**of the Bike**  
**Vision Network**  
**on Pikes Peak**  
**Avenue.**



### Vision Network

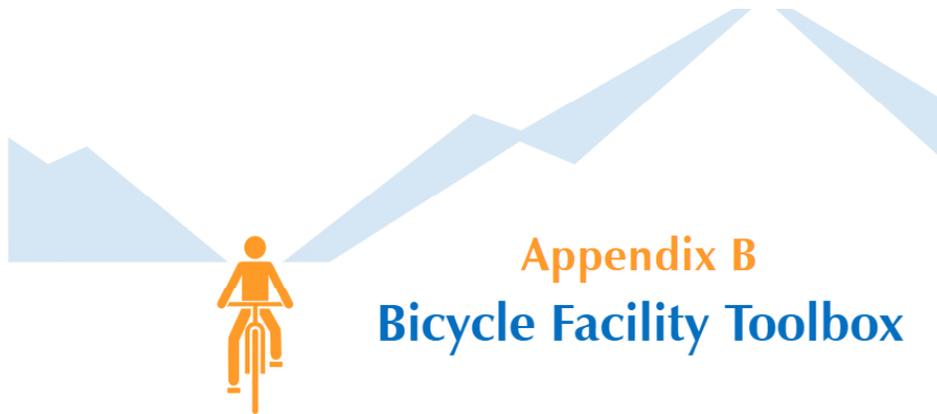
The bicycle Vision Network—a selection of streets in Colorado Springs on which to implement appropriate bicycle infrastructure—will improve connectivity and access to destinations across the city. Building upon existing trail and on-street facilities, the 379-mile Vision Network comprises 157 miles of recommended corridors identified as part of the 2015 PPACG Regional Non-motorized Plan, 19 miles of recommended facilities from the 2016 Experience Downtown Master Plan, and 203 new miles of recommended corridors from the COS Bikes! process.

This Plan does not make specific bicycle facility recommendations, but instead allows the City implementation flexibility as it completes COS Bikes! and builds out the bikeway network. The Bicycle Facility Toolbox provided in Appendix B should be used to make appropriate facility selection and design decisions for individual segments within the Vision Network.

### Vision Network Map

- Planned**
  - COS Bikes! Vision Network
  - Regional Non-Motorized Corridors
  - Experience Downtown Network
  - Trails
- Existing**
  - On-street Bike Facilities
  - Trails

From:

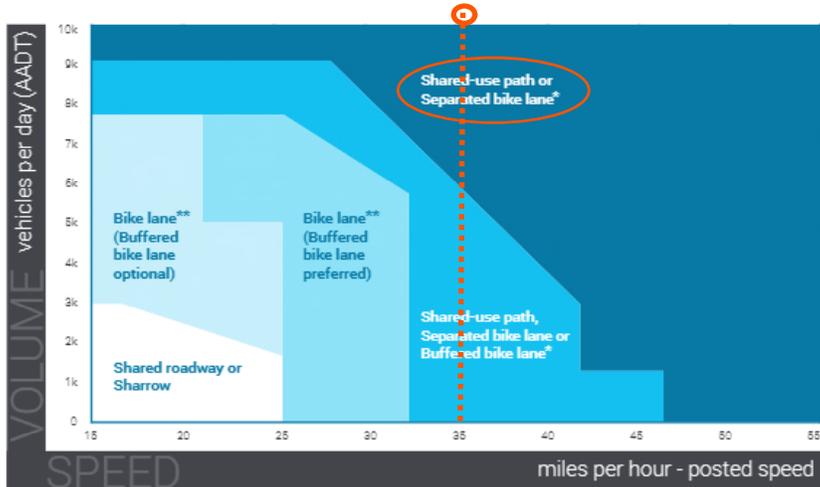


See Next Page:

# Pikes Peak Avenue East of Union Boulevard

## Designing for "Interested but Concerned" and "Enthusied and Confident" Bicyclists

"Interested but concerned" bicyclists prefer physical separation as traffic volumes and speeds increase. The bikeway facility selection chart below identifies bikeway facilities that improve operating environment for this bicyclist type at different roadway speeds and traffic volumes. The "enthusied and confident" bicyclist will also prefer bikeway treatments noted in this chart. Selecting facility types based on this chart is recommended in order to serve the largest share of the population and increase bicycling in Colorado Springs.

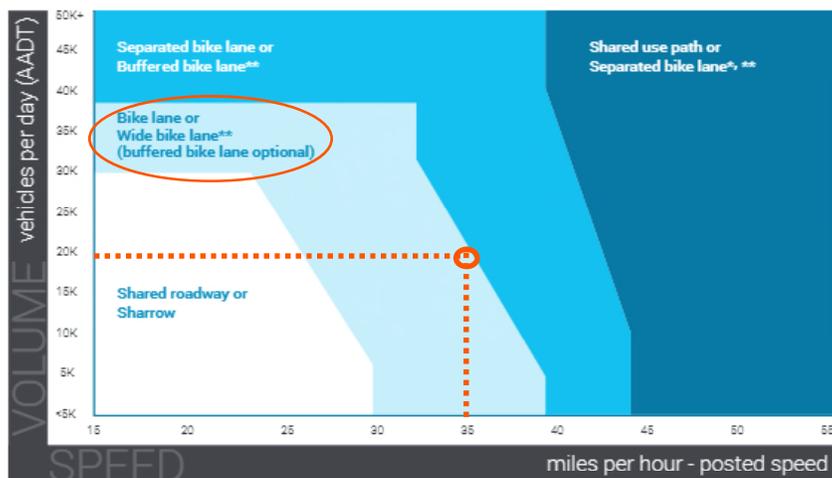


\* To determine whether to provide a shared-use path, separated bike lane, or buffered bike lane, consider pedestrian and bicycle volumes or, in the absence of volume, consider land use.

\*\* Can use a shoulder bikeway as necessary

## Designing for "Strong and Fearless" Bicyclists

"Strong and fearless" bicyclists have a greater tolerance and willingness to operate with higher motor vehicle traffic volumes and speeds. The bikeway facility selection chart below identifies bikeway facilities that improve the operating environment for this bicyclist type at different roadway speeds and traffic volumes. The "enthusied and confident" bicyclist may tolerate bikeway treatments based on this chart for limited distances, while "interested but concerned" bicyclists may not.



\* To determine whether to provide a shared-use path, separated bike lane, or buffered bike lane, consider pedestrian and bicycle volumes or, in the absence of volume, consider land use.

\*\* Can use a shoulder bikeway as necessary