

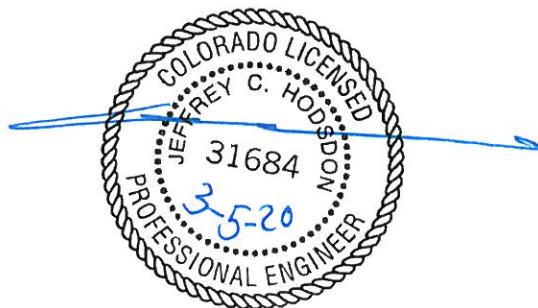


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Meadowlake Industrial Park Traffic Impact Study (LSC #195140) March 5, 2019

Traffic Engineer's Statement

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



Developer's Statement

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

Bill Munn FOR
ROI PROP. GROUP

03/06/2020
Date



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March 5, 2020

Mr. Bill Guman, RLA, ASLA
William Guman & Associates, Ltd.
731 North Weber Street, Suite 10
Colorado Springs, CO 80903

RE: Meadow Lake Industrial Park
El Paso County, CO
Traffic Impact Study
LSC #195140

Dear Mr. Guman,

LSC Transportation Consultants, Inc. has prepared this updated traffic impact study for the proposed Meadow Lake Industrial Park to be located in El Paso County, Colorado. Located at El Paso County IDs 4300000548, 4300000551, 4300000552, and 4300000553, the site is located northwest of the intersection of Falcon Highway/Curtis Road. Two total site access points are proposed (one each to Falcon Highway and Curtis Road). This report has been prepared for submittal to El Paso County.

REPORT CONTENTS

The preparation of this report included the following:

- An inventory of existing roadway and traffic conditions on major thoroughfares adjacent to the site, including surface conditions, functional classification, widths, pavement markings, traffic control signs, posted speed limits, intersection and access spacing, roadway and intersection alignments, roadway grades, and auxiliary turn lanes.
- Weekday peak-hour turning movement traffic counts at the following intersections:
 - Falcon Highway/Curtis Road
 - Curtis Road/Judge Orr Road
 - US Highway 24/Stapleton Road
- Estimated average weekday traffic (AWT) volumes adjacent to the proposed industrial park development on Falcon Highway, Curtis Road, Meridian Road, Judge Orr Road, and US 24.
- Projections of 20-year background traffic volumes on Falcon Highway, Curtis Road, Meridian Road, Judge Orr Road, and US 24.
- The proposed site land use and access plan.
- Estimates of average weekday and weekday peak-hour trip generation for the proposed industrial park and the estimated directional distribution of site-generated vehicle-trips on roadways and intersections adjacent to and in the vicinity of the site.

- Projected site-generated and resulting total peak-hour intersection traffic volumes at the following “study area” intersections:
 - Falcon Highway/Sharpstown Drive (proposed three-quarter site access)
 - Curtis Road/Sugarland Drive (north full-movement site access)
 - Curtis Road/Suncadia Drive (south full-movement site access)
 - Falcon Highway/Curtis Road
 - Curtis Road/Judge Orr Road
 - US Highway 24/Stapleton Road
- Projected total daily and peak-hour traffic volumes at the “study area” intersections.
- Intersection level of service analysis at the “study area” intersections.
- Queuing analysis at the proposed site access points and the “study area” intersections.
- Evaluation of existing and long-term projected intersection volumes to determine potential requirements for any auxiliary right-/left-turn lanes at the proposed site access points adjacent based on the criteria in El Paso County’s *Engineering Criteria Manual (ECM)*. Also included are potential long-term lane requirements.
- Completed deviation request forms based on ECM criteria.
- Findings and recommendations for submittal to El Paso County.

LIST OF OTHER TRAFFIC REPORTS USED IN THE PREPARATION OF THIS REPORT

Saddlehorn Ranch (dated July 11, 2019) was a previously-completed traffic reports in the vicinity of the proposed Meadow Lake Industrial Park. This report has been provided for reference and to provide context.

LAND USE AND ACCESS

Figure 1 shows the site location relative to the adjacent and nearby roadways. Located at El Paso County IDs 4300000548, 4300000551, 4300000552, and 4300000553, the site is located northwest of the intersection of Falcon Highway/Curtis Road. Meadow Lake Airport is located north and west of the site. Single-family homes currently exist south of Falcon Highway, while the parcel east of Curtis Road is currently vacant.

Assuming an estimated 16 percent floor area ratio, the proposed Meadow Lake Industrial Park could contain approximately:

- 1,158,069 square feet for industrial uses
- 177,934 square feet for commercial uses

Figure 1 shows the area circulation and access points to the adjacent public roads, while Figure 2 contains the proposed site plan showing the proposed land uses, on-site circulation, and proposed access points.

Two proposed, full-movement site access points to Curtis Road (Sugarland Drive and Suncadia Drive) would be located approximately 1/4-mile and 1/2-mile north of Falcon Highway.

Sharpstown Drive, a three-quarter movement (left-in/right-in/right-out only access, is also planned to Falcon Highway approximately one-quarter mile west of Curtis Road.

ROAD AND TRAFFIC CONDITIONS AND MTCP CLASSIFICATION

Figure 1 shows the roads adjacent to and in the vicinity of the site. Adjacent roads serving the site are identified below followed by a brief description of each:

US Highway (US) 24 is located about one mile north of the site (via Curtis Road) and about 1.5 miles west of the site (via Judge Orr Road). US Highway 24 is also accessible from the southwest corner of the site via Falcon Highway. The travel distance to/from the intersection of US Highway 24/Falcon Highway via Falcon Highway is about four miles.

This two-lane State Highway extends east/west across Colorado connecting the Buena Vista, Colorado Springs, and Limon areas. US 24 is planned to be widened to four lanes through the Falcon area and is classified as an Expressway by the Colorado Department of Transportation (CDOT) and the *El Paso County Major Transportation Corridors Plan (MTCP)*.

Judge Orr Road is a two-lane roadway that extends east from Eastonville Road across most of El Paso County. It is shown on the *El Paso County 2040 Major Transportation Corridors Plan* and the *Preserved Corridor Network Plan* as a four-lane Minor Arterial adjacent to the site (and west of Curtis Road). Posted speed limits adjacent to the site range from 45 to 55 mph. West of Curtis Road, the speed limit is 45 mph, while it generally increases to 55 mph east of Curtis Road. The intersection of US 24/Judge Orr is currently signalized. Due to the oblique angle of this intersection, the eastbound and westbound approaches are split-phased. The *US 24 Access Control Plan/PEL Study* shows future plans for realignment of Judge Orr at US Highway 24 to improve the intersection and provide an intersection angle closer to 90 degrees.

Curtis Road is a two-lane roadway that extends south from the intersection of US Highway 24/Stapleton Road intersection to Drennan Road. It is shown as a two-lane, rural Principal Arterial on El Paso County's *2040 Major Transportation Corridors Plan* and a four-lane Principal Arterial on the *Preserved Corridor Network Plan*. Adjacent to the site, the posted speed limit is 45 mph. Both intersections of Curtis Road/Judge Orr Road and Curtis Road/Falcon Highway are two-way, stop-sign controlled. The section north of Judge Orr was recently constructed to current ECM standards with paved shoulders, etc. Generally, Curtis Road is an "unimproved," two-lane paved road between Judge Orr and Falcon Highway.

Falcon Highway extends from US 24 to Ellicott Highway and is classified as a two-lane Minor Arterial on the 2040 El Paso County MTCP. Adjacent to the site, the posted speed limit is 55 mph. Currently, the intersection of Falcon Highway/Curtis Road has an auxiliary right-turn lane on the eastbound approach and auxiliary left-turn lanes on the northbound and southbound approaches. The westbound approach is currently a single lane at the two-way stop sign-controlled (TWSC) intersection of Falcon Highway/Curtis Road.

Meridian Road extends north from South Blaney Road to County Line Road. Meridian Road is shown as a four-lane Principal Arterial south of Rex Road, a four-lane Minor Arterial north of Rex Road, and a two-lane Minor Arterial north of Murphy Road on the County's MTCP.

Existing Traffic Volumes

Vehicular turning movement counts were conducted at the following intersections from 6:30-8:30 a.m. and from 4:00-6:00 p.m.:

- Falcon Highway/Curtis Road
 - AM peak – Tuesday, January 7, 2020
 - PM peak – Tuesday, January 7, 2020
- Curtis Road/Judge Orr Road
 - AM peak – Wednesday, January 8, 2020
 - PM peak – Wednesday, January 8, 2020
- US Highway 24/Stapleton Road
 - AM peak – Thursday, November 15, 2018
 - PM peak – Thursday, November 15, 2018

Figure 3 shows these turning movement volumes, as well as the average weekday traffic volumes (estimated based on factored peak-hour count data) on the study area roadways. Raw count data are attached.

PEDESTRIAN AND BICYCLE FACILITIES

The proposed subdivision roads are to be Non-Residential Collector roadways, and, as such, would not require sidewalks. The following roadway improvement projects have been identified as being needed by the year 2040 per Map 15 and Table 5 of El Paso County's 2016 MTCP:

- M4 – Falcon Highway from Meridian Road to South Peyton Highway
 - Bicycle and secondary regional trail improvements (6.95 miles)
- M7 – Elbert Road from US 24 to Judge Orr Road
 - Bicycle improvements (2.32 miles)
- M8 – Judge Orr Road from Eastonville Road to South Peyton Highway
 - Bicycle improvements (2.98 miles)
- M9 – Stapleton Road from Meridian Road to US 24
 - Bicycle improvements (2.56 miles)

TRIP GENERATION

Estimates of the vehicle-trips projected to be generated by the Belmont Park Apartments residential development have been made using the nationally published trip generation rates from *Trip Generation, 10th Edition, 2017* by the Institute of Transportation Engineers (ITE).

Corresponding trip generation rates from the following ITE Land Use Categories have been used to develop the trip generation estimates for site buildout:

- “110 – General Light Industrial”
- “820 – Shopping Center”

Table 1 below presents a summary of the estimated external site trip generation. A detailed trip generation estimate for the industrial park, including ITE rates for the proposed land uses, is presented in Table 6 (attached). Figure 2 shows the layout within the proposed industrial park.

Table 1: Estimated External Site Vehicle-Trip Generation

Analysis Period	Weekday		
	In	Out	Total
Morning Peak Hour	390	124	514
Evening Peak Hour	426	607	1,033
Daily/24-hour	6,672	6,672	13,343

The proposed Meadow Lake Industrial Park is projected to generate about 13,343 total vehicle-trips on the average weekday during a 24-hour period, with approximately half entering and half exiting the site. During the morning peak hour, approximately 390 entering vehicles and 124 exiting vehicles would be generated. Approximately 426 entering and 607 exiting vehicles would be generated by the site during the evening peak hour.

Pass-By and Diverted Trips

The total number of trips to be generated by the site has also been aggregated by trip type to account for pass-by and diverted trips. 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. That pass-by motorist would then continue on his or her way to a final destination in the original direction. Table 6 (attached) shows the percent of the trips generated that were assumed to be pass-by trips. Non-primary trip percentage has been based on data from the *Trip Generation Handbook - An ITE Proposed Recommended Practice, 3rd Edition, 2014* by ITE and adjustments by LSC for site-specific conditions.

The proposed Meadow Lake Industrial Park is projected to generate about 8,904 **primary** vehicle-trips on the average weekday during a 24-hour period, with approximately half entering and half exiting the site. Analysis accounts for pass-by and diverted trips from Stapleton Road, and Judge Orr Road, and US Highway 24. The ITE-average percent pass-by and percent diverted trips for shopping-related land uses were used for this study, as summarized in Table 6. The resulting primary and non-primary trips are shown in Table 6.

TRIP DISTRIBUTION AND ASSIGNMENT

Trip Directional Distribution

Estimating the directional distribution of site-generated vehicle-trips to the study area roads and intersections is a necessary component in determining the site's traffic impacts. Figure 4 shows the percentages of the site-generated vehicle-trips projected to be oriented to and from the site's major approaches. Estimates have been based on the following factors: the proposed new land use, the area roadway system serving the site, and the site's geographic location relative to the overall greater El Paso County/Colorado Springs area. Additionally, directional distribution splits from LSC's previously-conducted Saddlehorn Ranch traffic study (dated July 11, 2019) were used to estimate trip distributions and background volumes within the vicinity of the site.

Site-Generated Traffic

Site-generated traffic volumes have been estimated at the following intersections:

- Falcon Highway/Sharpstown Drive (proposed three-quarter site access)
- Curtis Road/Sugarland Drive (north full-movement site access)
- Curtis Road/Suncadia Drive (south full-movement site access)
- Falcon Highway/Curtis Road
- Curtis Road/Judge Orr Road
- US Highway 24/Stapleton Road

These volumes have been calculated by applying the directional distribution percentages estimated by LSC (from Figure 4) to the trip generation estimates (from Table 6). Figure 5 shows the projected site-generated traffic volumes for the weekday morning and evening peak hours. The figure also shows the estimated average daily traffic volumes (ADTs).

Existing-Plus-Site-Generated Traffic Volumes

Figure 6 shows the sum of the existing traffic volumes (from Figure 3) and site-generated peak-hour traffic volumes (shown in Figure 5). These volumes represent the projected short-term total traffic following site buildout. Laneage and traffic control at the study area intersections following site buildout are shown in Figure 6.

2040 Background Traffic Volumes

The 2040 background traffic volumes are generally based on the projections presented in the MTCP, but adjustments have been made to account for reduced trip generation from the former Santa Fe Springs development area. US Highway 24 volumes are estimates by LSC based on the Colorado Department of Transportation *US 24 Planning and Environmental Linkages Study Final Corridor Conditions Report* (dated December 2016). These volumes assume the 2040 roadway system including

the extension of Stapleton Road west to Briargate Parkway. Traffic from the proposed Meadow Lake Industrial Park is **not** included in the 2040 **background** traffic volumes.

2040 Total Traffic Volumes

Figure 8 shows the sum of 2040 background traffic volumes (from Figure 7) plus site-generated traffic volumes (from Figure 5).

LEVEL OF SERVICE 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.

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) ¹
A	≤ 10.0	≤ 10.0
B	10.1 – 20.0	10.1 – 15.0
C	20.1 – 35.0	15.1 – 25.0
D	35.1 – 55.0	25.1 – 35.0
E	55.1 – 80.0	35.1 – 50.0
F	≥ 80.1	≥ 50.1

¹ For unsignalized intersections, if V/C is > 1.00, then LOS is LOS F regardless of the projected average control delay per vehicle

LOS values have been included on each figure for each turning movement/approach during the weekday morning and evening peak hours for the proposed site access intersections and off-site intersections in the study area:

- Figure 3: 2019 Existing Traffic, Lane Geometry, Traffic Control, and LOS
- Figure 6: 2019 Existing + Site Traffic, Lane Geometry, Traffic Control, and LOS
- Figure 7: 2040 Background Traffic, Lane Geometry, Traffic Control, and LOS
- Figure 8: 2040 Background + Site Traffic, Lane Geometry, Traffic Control, and LOS

LOS calculations for long-term scenarios were based upon the recommended lane geometries and traffic controls outlined in the figures above (which were based on recommended improvements in the aforementioned Saddlehorn Ranch traffic study).

Falcon Highway/Sharpstown Drive (Proposed Three-Quarter Site Access)

All individual turning movements and approaches are projected to operate at LOS B or better through the 2040 horizon year. This analysis assumes that the southbound left turn movement would be prohibited (three-quarter-movement intersection configuration). Please refer to Figure 6 and Figure 8 for recommended lane configurations and LOS summaries at this intersection during the short- and long-term scenarios, respectively.

Curtis Road/Sugarland Drive (North Full-Movement Site Access)

Short-Term

All individual turning movements and approaches are projected to operate at LOS C or better during the short-term as a two-way stop sign-controlled intersection with the following auxiliary turn lanes: southbound right-turn deceleration lane, southbound right-turn acceleration lane, and northbound left-turn deceleration lane. Please refer to Figure 6 for recommended lane configurations and LOS summaries at this intersection during the short-term scenario.

Long-Term

Please refer to Figure 8 for recommended lane configurations and LOS summaries at this intersection during the long-term scenario:

- The eastbound left-turning movements is projected to operate at LOS F during both long-term peak hours if the intersection were to operate as two-way stop sign-controlled
- If the intersection were to be converted to a roundabout, all individual approaches would operate at LOS B or better during the long-term
- If the intersection were to be converted to a channelized-T intersection, all individual turning movements would operate at LOS B or better during both peak hours

Curtis Road/Suncadia Drive (South Full-Movement Site Access)

Short-Term

All individual turning movements and approaches are projected to operate at LOS C or better during the short-term as a two-way stop sign-controlled intersection with the following auxiliary turn lanes: southbound right-turn deceleration lane, southbound right-turn acceleration lane, and northbound left-turn deceleration lane. Please refer to Figure 6 and Figure 8 for recommended lane configurations and LOS summaries at this intersection during the short- and long-term scenarios, respectively.

Long-Term

Please refer to Figure 8 for recommended lane configurations and LOS summaries at this intersection during the long-term scenario:

- The eastbound left-turning movements is projected to operate at LOS F during both long-term peak hours if the intersection were to operate as two-way stop sign-controlled
- If the intersection were to be converted to a roundabout, all individual approaches would operate at LOS B or better during the long-term
- If the intersection were to be converted to a channelized-T intersection, all individual turning movements would operate at LOS B or better during both peak hours

US Highway 24/Stapleton Road

Short-Term

Currently, the intersection of US 24/Stapleton is two-way stop sign-controlled. The following turning movements currently operate at LOS E or worse, with or without the addition of site-generated traffic: northwest-bound left, northwest-bound through, southeast-bound left, and southeast-bound through.

If signalized, all individual turning movements and the intersection overall currently operate at and are projected to operate at LOS C or better during both short-term peak hours, with or without the addition of site-generated traffic.

Long-Term

Based on the long-term scenario analyzed in this report, dual left-turn lanes are projected to be constructed to all approaches at the intersection of US 24/Stapleton Road. Additionally, all approaches on US Highway 24 and Stapleton Road would be improved to two through lanes in each direction. Assuming future traffic signal control, all individual turning movements and the intersection overall are projected to operate at LOS C or better during both long-term peak hours, with or without the addition of site-generated traffic. No auxiliary turn lane improvements at this intersection would be required as a result of additional traffic generated by this site. Please refer to Figure 7 and Figure 8 for projected lane geometry improvements and LOS at this intersection.

Judge Orr Road/Curtis Road

Short-Term

Currently, all individual approaches/turning movements at the intersection of Judge Orr/Curtis operate at LOS B or better during both peak hours. The northbound left-turn movement is projected to operate at LOS F during the short-term with the addition of site-generated traffic if

the intersection were to remain TWSC or have all-way stop sign control. If the intersection of Judge Orr/Curtis were to be converted a roundabout, all individual turning movements would operate at LOS C or better during the short-term buildout scenario.

Long-Term

If the intersection of Judge Orr/Curtis were to be converted from TWSC to a roundabout, all individual turning movements would operate at LOS C or better during both peak hours of the long-term buildout scenario. This intersection improvement was previously recommended in the Saddlehorn Ranch traffic study. Additionally, all approaches on Judge Orr Road and Curtis Road would be improved to two through lanes in each direction (per the 2040 MTCP).

Falcon Highway/Curtis Road

Short-Term

Currently, all individual approaches/turning movements at the intersection of Falcon Highway/Curtis Road operate at LOS D or better during both peak hours. The northbound left, southbound through, and southbound left-turn movements are projected to operate at LOS E or worse during the short-term with the addition of site-generated traffic. If the intersection of Falcon Highway/Curtis Road were to be converted from TWSC to a roundabout, all individual turning movements would operate at LOS C or better during the short-term buildout scenario.

Long-Term

If the intersection of Falcon Highway/Curtis Road were to be converted from TWSC to a roundabout, all individual turning movements would operate at LOS C or better during both peak hours of the long-term buildout scenario. This intersection improvement was previously recommended in the Saddlehorn Ranch traffic study. Additionally, all approaches at the Falcon Highway/Curtis Road intersection would be improved to two through lanes in each direction (per the 2040 MTCP).

AUXILIARY TURN LANE ANALYSIS, INTERSECTION CONFIGURATION, AND TRAFFIC CONTROL

Auxiliary Turn Lane Requirements

All auxiliary left- and right-turn lanes at this intersection would be required to meet the County's *Engineering Criteria Manual's* auxiliary turn lane length criteria for each roadway's respective posted/design speed limit, as summarized in Table 3 and Table 4.

According to criteria in El Paso County's *Engineering Criteria Manual*, deceleration turn lanes shall meet the following design criteria, as summarized in Table 3:

Table 3: ECM-Required Deceleration Lengths and Taper Lengths

Design Speed	Lane Length	Approach Taper	Total Length*
25 mph	115'	120'	235'
30 mph	115'	120'	235'
35 mph	135'	140'	275'
40 mph	155'	160'	315'
45 mph	195'	180'	375'
50 mph	235'	200'	435'
55 mph	260'	220'	480'
60 mph	290'	240'	530'
65 mph	320'	260'	580'
* Refer to the ECM for criteria on required storage lengths			

Table 4 summarizes the minimum acceleration lane and transition lengths required by the ECM based on the roadway's posted speed limit:

Table 4: ECM Design Criteria for Acceleration Lanes

Posted Speed	Lane Length	Transition Taper	Total Length
25 mph	-	90'	90'
30 mph	190'	96'	286'
35 mph	270'	120'	390'
40 mph	380'	144'	524'
45 mph	550'	162'	712'
50 mph	760'	180'	940'
55 mph	960'	222'	1,182'
60 mph	1,170'	300'	1,470'
65 mph	1,380'	300'	1,680'

Turn Lane Criteria

Table 5 summarizes peak-hour auxiliary left- and right-turn lane thresholds according to ECM criteria. Roadway classifications for key thoroughfares in the vicinity of the site include:

- Expressway – US Highway 24
- Principal Arterial – Curtis Road, Meridian Road
- Minor Arterial – Judge Orr Road, Falcon Highway
- Non-Residential Collector – all proposed site accesses

Table 5: ECM Auxiliary Turn Lane Thresholds by Functional Classification

Functional Classification	Deceleration Lanes		Acceleration Lanes	
	Left	Right	Left	Right
Expressway	10+ vph	10+ vph	*	10+ vph
Principal Arterial	10+ vph	25+ vph	*	50+ vph
Minor Arterial and Lower	25+ vph	50+ vph	*	Generally not required
* May be required if the design would benefit safety and roadway operations Note: vph = vehicles per hour				

Based on projected volumes and ECM criteria summarized in Table 5, auxiliary turn lanes would be required for the following turning movements at the following study area intersections:

Falcon Highway/Sharpstown Drive (Proposed Three-Quarter Site Access)

In order for this intersection to operate at an acceptable level of service, LSC recommends that the southbound left-turn movement would be prohibited (three-quarter-movement intersection configuration). The following auxiliary turn lanes would be required based on projected site-generated traffic volumes:

- Eastbound left-turn deceleration lane
 - 290-foot deceleration lane
 - 150-foot storage length
 - 240-foot approach taper
 - 55:1 redirect taper length
- Westbound right-turn deceleration lane
 - 290-foot deceleration lane
 - 240-foot approach taper
 - 55:1 redirect taper length
- Southbound right-turn acceleration lane
 - 960-foot acceleration lane
 - 222-foot transition taper
 - 18.5:1 transition taper ratio

Curtis Road/Sugarland Drive (North Full-Movement Site Access)

Short Term

The north site access on Curtis Road would operate at an acceptable LOS **in the short term** as a two-way stop sign-controlled intersection with the following auxiliary turn lanes:

- Southbound right-turn deceleration lane
 - 235-foot deceleration lane
 - 200-foot approach taper
 - 45:1 redirect taper length
- Eastbound right-turn acceleration lane
 - 550-foot acceleration lane
 - 13.5:1 transition taper ratio
- Northbound left-turn deceleration lane
 - 235-foot deceleration lane
 - 150-foot storage length
 - 200-foot approach taper
 - 45:1 redirect taper length

Long Term

The Curtis Road/Sugarland Drive site access would not operate at an acceptable LOS in the long term if it were to remain two-way stop sign-controlled. As such, LSC recommends that the site access be converted to a channelized-T intersection, which would require adding an eastbound left-turn acceleration lane:

- 550-foot acceleration lane
- 13.5:1 transition taper ratio

Note: if a roundabout is selected for traffic control, the above would not apply. Any auxiliary turn lanes would be identified as part of the roundabout design.

Curtis Road/Suncadia Drive (South Full-Movement Site Access)

Short Term

The south site access on Curtis Road would operate at an acceptable LOS **in the short term** as a two-way stop sign-controlled intersection with the following auxiliary turn lanes:

- Southbound right-turn deceleration lane
 - 235-foot deceleration lane
 - 200-foot approach taper
 - 45:1 redirect taper length
- Southbound right-turn acceleration lane
 - 550-foot acceleration lane
 - 13.5:1 transition taper ratio
- Northbound left-turn deceleration lane
 - 235-foot deceleration lane
 - 150-foot storage length
 - 200-foot approach taper
 - 45:1 redirect taper length

Long Term

The Curtis Road/Suncadia Drive site access would not operate at an acceptable LOS **in the long term** if it were to remain two-way stop sign-controlled. As such, LSC recommends that the site access be converted to a channelized-T intersection, which would require adding an eastbound left-turn acceleration lane:

- 550-foot acceleration lane
- 13.5:1 transition taper ratio

Note: if a roundabout is selected for traffic control, the above would not apply. Any auxiliary turn lanes would be identified as part of the roundabout design.

Judge Orr Road/Curtis Road

LSC recommends that this intersection be converted to a roundabout in the short term in order for all individual turning movements/approaches to operate at an acceptable level of service upon site buildout, as previously recommended in the Saddlehorn Ranch traffic study.

Note: The following auxiliary turn lane upgrades would not be required if a roundabout were to be constructed at the intersection of Falcon Highway/Curtis Road. However, these auxiliary turn lanes may be needed if two-way stop control or all-way stop sign control is used as an intermediate traffic condition:

- Eastbound right-turn deceleration lane
 - 290-foot acceleration lane
 - 240-foot approach taper
 - 55:1 redirect taper length

Falcon Highway/Curtis Road

LSC recommends that this intersection be converted to a roundabout in order for all individual turning movements/approaches to operate at an acceptable level of service upon site buildout, as previously recommended in the Saddlehorn Ranch traffic study.

Note: The following auxiliary turn lane upgrades would not be required if a roundabout were to be constructed at the intersection of Falcon Highway/Curtis Road. However, these auxiliary turn lanes may be needed if all-way stop sign control is used as an intermediate traffic condition:

- Southbound right-turn deceleration lane
 - 235-foot deceleration lane
 - 200-foot approach taper
 - 45:1 redirect taper length
- Eastbound left-turn deceleration lane
 - 290-foot acceleration lane

- 240-foot approach taper
- 55:1 redirect taper length
- Westbound right-turn deceleration lane
 - 290-foot deceleration lane
 - 240-foot approach taper
 - 55:1 redirect taper length

ROADWAY CLASSIFICATIONS

All internal streets within the site should be designed to meet Non-Residential Collector criteria prescribed in the ECM.

ROADWAY SEGMENT IMPROVEMENTS

A previously-conducted traffic impact study (Saddlehorn Ranch, Filing 1 – submitted December 3, 2019) requested a deviation from ECM criteria for a Rural Minor Arterial cross-section, which requires a 12-foot travel lane and an 8-foot paved shoulder. This deviation requested that the paved shoulder width be reduced from 8 feet to 2 feet, as this is the maximum that can fit inside the existing western right-of-way on Curtis Road. Once the required right-of-way can be obtained, Curtis Road would be built-out to the full Rural Minor Arterial cross-section criteria.

LIST OF DEVIATIONS REQUESTED

A deviation would be required for the 805-foot spacing on Falcon Highway between the proposed south access and McCandish Road (existing). The ECM requires a minimum of 1/4-mile spacing (1,320 feet) between accesses on Rural Minor Arterials.

COUNTY ROAD IMPROVEMENT FEE PROGRAM

Transportation Impact Fees

Per ECM Appendix B: *State what the current applicable Transportation Impact Fees are and what option the developer will be selecting for payment.*

The applicant will be required to participate in this program. The PID option will be identified with a future Preliminary Plan/Plat submittal.

Reimbursable Improvements

The following roadway improvement projects have been identified as being needed by the year 2040 per Map 13 and Table 4 of El Paso County's 2016 MTCP:

- U1 – Curtis Road from Judge Orr Road to State Highway 94 (\$35,549,000)
 - Existing conditions – 2-lane Rural Unimproved County Road
 - Future conditions – 2-lane Principal Arterial
- U5 – Falcon Highway from US 24 to 1 mile east of Curtis Road (\$16,509,000)
 - Existing conditions – 2-lane Rural Unimproved County Road
 - Future conditions – 2-lane Minor Arterial
- C12 – Stapleton Road from Towner Road to Judge Orr Road (\$41,076,000)
 - Existing conditions – 2-lane Principal Arterial
 - Future conditions – 4-lane Principal Arterial
- C14 – Judge Orr Road from Eastonville Road to Peyton Highway (38,248,000)
 - Existing conditions – 2-lane Minor Arterial
 - Future conditions – 4-lane Minor Arterial

Although these are identified as "eligible improvements (eligible for Fee Program credit if completed)," **it is our understanding that the applicant will not be responsible for completing improvements to these roadways.**

MULTI-MODAL TRANSPORTATION AND TDM OPPORTUNITIES

The following roadway improvement projects have been identified as being needed by the year 2040 per Map 15 and Table 5 of El Paso County's 2016 MTCP:

- M4 – Falcon Highway from Meridian Road to South Peyton Highway
 - Bicycle and secondary regional trail improvements (6.95 miles)
- M7 – Elbert Road from US 24 to Judge Orr Road
 - Bicycle improvements (2.32 miles)
- M8 – Judge Orr Road from Eastonville Road to South Peyton Highway
 - Bicycle improvements (2.98 miles)
- M9 – Stapleton Road from Meridian Road to US 24
 - Bicycle improvements (2.56 miles)

IMPROVEMENTS SUMMARY TABLE

Please refer to Table 7, which presents a summary of improvements.

FINDINGS AND CONCLUSIONS

- The site is projected to generate about 13,343 new driveway vehicle-trips on the average weekday.
- During the weekday morning peak hour of adjacent street traffic, 390 vehicles would enter the site while 124 vehicles would exit.

- During the weekday evening peak hour of adjacent street traffic, 426 vehicles would enter the site while 607 vehicles would exit.
- In order for both intersections to operate at acceptable levels of service, LSC recommended that the intersections of Curtis Road/Falcon Highway and Curtis Road/Judge Orr Road be converted to roundabouts in the short-term.
- As a TWSC intersection, the eastbound left-turning movement at both proposed site accesses on Curtis Road (Sugarland Drive and Suncadia Drive) would operate at LOS C or better during the short-term but LOS F during the long-term. All approaches at both site accesses on Curtis Road are projected to operate at LOS B during the long-term scenario if both were converted to roundabouts.
- Please refer to the “Auxiliary Turn Lane Analysis” section above for recommended intersection improvements with and without the addition of site-generated traffic.
- All internal streets within the site should be designed to meet Non-Residential Collector criteria prescribed in the ECM.

* * * * *

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

Enclosures: Table 6
Table 7
Figure 1 - Figure 8
Traffic Count Reports
Synchro LOS Reports

Table 6: Detailed Trip Generation Estimate

ITE		Value	Units	Floor Area Ratio	Value	Units ¹	Trip Generation Rates ²				Total Trips Generated						% Trips Primary	% Trips Pass-by	% Trips Diverted	Primary Trips Generated				
							Average Weekday	A.M.		P.M.		Average Weekday	A.M.		P.M.					Average Weekday	A.M.		P.M.	
Code	Description							In	Out	In	Out		In	Out	In	Out				Average Weekday	In	Out	In	Out
110	General Light Industrial	166.160	Acres	16%	1158.069	KSF	3.84	0.21	0.03	0.02	0.15	4447	240	33	26	174	100%	0%	0%	4447	240	33	26	174
820	Shopping Center	25.530	Acres	16%	177.934	KSF	50.00	0.84	0.51	2.25	2.43	8896	149	91	400	433	41%	34%	25%	3647	61	38	164	177
											Total	13343	390	124	426	607				8094	302	70	190	351
¹ KSF = 1,000 square feet of gross floor area																								
² Source: <i>Trip Generation</i> , 10th Edition, 2017, by the Institute of Transportation Engineers (ITE)																								

Table 7: Roadway Improvements for Meadow Lake Industrial Park			
Off-Site Intersections			
Item #	Improvement	Timing	Responsibility
US Highway 24/Stapleton Intersection			
1.1	Signalize the intersection	Once warrants are met	CDOT is collecting escrow from area developments impacting this intersection with each subdivision filing
Adjacent County Arterial Roadway ROW Requirements			
2.1	<u>Curtis Road</u> 2-Lane Rural Principal Arterial 130' to 150' estimated ROW dedication (Note: 4-lane Rural Principal is 180')	Shown in 2040 MTCP	Applicant (west side)
2.2	<u>Curtis Road</u> 4-Lane Rural Principal Arterial 180' right-of-way preservation	Shown in 2060 Corridor Preservation Plan	Applicant (west side)
Roadway Segment Improvements			
3.1	<u>Curtis Road (Short-Term)</u> Improve adjacent Curtis Road to 2-ft paved shoulders (not 8-ft paved shoulders, as required by the ECM for Rural Minor Arterial cross-sections)	Outlined in the Saddlehorn Ranch deviation (dated 12/03/2019 by JR Engineering)	Details TBD Applicant or property on the east side of Curtis Road will pay fee program traffic impact fees
3.2	<u>Curtis Road (Long-Term)</u> Upgrade to 4-Lane Rural Principal Arterial	Shown in 2040 MTCP (Project U1)	Details TBD Applicant will pay fee program traffic impact fees
3.3	<u>Falcon Highway</u> Upgrade to 2-Lane Rural Minor Arterial	Shown in 2040 MTCP (Project U5)	Details TBD Applicant will pay fee program traffic impact fees
3.4	<u>Stapleton Road</u> Widen to 4-Lane Rural Principal Arterial	Shown in 2040 MTCP (Project C12)	Details TBD Applicant will pay fee program traffic impact fees
3.5	<u>Judge Orr Road</u> Widen to 4-Lane Rural Minor Arterial	Shown in 2040 MTCP (Project C14)	Details TBD Applicant will pay fee program traffic impact fees
Internal Subdivision Roadways			
4.1	Construct internal streets to County Urban Non-Residential Collector Standards	As development occurs and as needed for access	Applicant
Judge Orr/Curtis Road Intersection			
5.1	<u>Short Term</u> Eastbound right-turn deceleration lane	Currently warranted by ECM	Escrow for improvement or construction at the time of development (fee program credit per fee program provisions)
5.2	<u>Short Term</u> Potentially sign for all way stop-sign control	Once warrants for AWSC are met	El Paso County
5.3	<u>Long Term</u> Reconstruct intersection as a modern roundabout (or signalize the intersection)	Once LOS of AWSC drops below acceptable levels (roundabout); or once signal warrants are met (for conversion to a signal or roundabout)	<u>El Paso County</u> This intersection will be fee-program eligible for a signal/roundabout and applicant will pay fee program traffic impact fees
5.4	<u>Long Term (if signalized in the future)</u> Lengthen northbound left-turn deceleration lane	As needed based on future speed limit and turning volume/stacking length criteria	Escrow for improvement or construction if warranted at the time of development (fee program credit per fee program provisions)
Adjacent Intersection and Access Intersections			
Item #	Improvement	Timing	Responsibility
Curtis Road/Falcon Highway			
6.1	<u>Short Term</u> Potentially sign for all way stop-sign control	Once warrants for AWSC are met	El Paso County
6.2	<u>Short Term (if signalized in the future)</u> Construct SB right-turn deceleration lane on Curtis Road approaching Falcon Highway	With site development, per ECM turning volume thresholds	Escrow for pro-rata share of improvement or construction if warranted at the time of development (fee program credit per fee program provisions)
6.3	<u>Short Term (if signalized in the future)</u> Construct EB left-turn deceleration lane on Curtis Road approaching Falcon Highway	With site development, per ECM turning volume thresholds	Escrow for pro-rata share of improvement or construction if warranted at the time of development (fee program credit per fee program provisions)
6.4	<u>Short Term (if signalized in the future)</u> Construct WB right-turn deceleration lane on Curtis Road approaching Falcon Highway	With site development, per ECM turning volume thresholds	Escrow for pro-rata share of improvement or construction if warranted at the time of development (fee program credit per fee program provisions)
6.5	<u>Long Term</u> Reconstruct intersection as a modern roundabout (or signalize the intersection)	Once LOS of AWSC drops below acceptable levels (roundabout); or once signal warrants are met (for conversion to a signal or roundabout)	El Paso County -- This intersection will be fee-program eligible for a signal/roundabout and applicant will pay fee program traffic impact fees.
6.6	<u>Long Term (if signalized in the future)</u> Lengthen northbound left-turn deceleration lane	As needed based on future speed limit and turning volume/stacking length criteria	Escrow for improvement or construction if warranted at the time of development (fee program credit per fee program provisions)
Falcon Highway/Sharpstown Drive (Site Access)			
7.1	<u>Short Term</u> Westbound right-turn deceleration lane	With site development, per ECM turning volume thresholds	Applicant
7..2	<u>Short Term</u> Eastbound left-turn deceleration lane and standard 3/4-movement intersection design	With site development	Applicant
7.3	<u>Short Term</u> Southbound right-turn acceleration lane	With site development, per ECM turning volume thresholds	Applicant
Curtis Road/Sugarland Drive (North Site Access)			
8.1	<u>Short Term</u> Southbound right-turn deceleration lane on Curtis Rd approaching the site access	With site development, per ECM turning volume thresholds	Applicant
8.2	<u>Short Term</u> Northbound left-turn deceleration lane on Curtis Rd approaching the site access	With site development, per ECM turning volume thresholds	Applicant
8.3	<u>Short Term</u> Eastbound right-turn acceleration lane on Curtis Rd upon exiting the site access	With site development, per ECM turning volume thresholds	Applicant
8.4	<u>Long Term</u> Reconstruct intersection as a channelized-T intersection (or as a modern roundabout)	With site development, as necessary to maintain acceptable intersection operations	Applicant
8.5	<u>Long Term</u> Northbound left-turn acceleration lane on Curtis Rd upon exiting the site access (to accompany channelized-T reconstruction)	With site development -- with future channelized-T (if implemented)	Applicant
Curtis Road/Suncadia Drive (South Site Access)			
9.1	<u>Short Term</u> Southbound right-turn deceleration lane on Curtis Rd approaching the site access	With site development, per ECM turning volume thresholds	Applicant
9.2	<u>Short Term</u> Northbound left-turn deceleration lane on Curtis Rd approaching the site access	With site development, per ECM turning volume thresholds	Applicant
9.3	<u>Short Term</u> Eastbound right-turn acceleration lane on Curtis Rd upon exiting the site access	With site development, per ECM turning volume thresholds	Applicant
9.4	<u>Long Term</u> Reconstruct intersection as a channelized-T intersection (or as a modern roundabout)	With site development, as necessary to maintain acceptable intersection operations	Applicant
9.5	<u>Long Term</u> Northbound right-turn acceleration lane on Curtis Rd upon exiting the site access to accompany channelized-T reconstruction	With site development -- with future channelized-T (if implemented)	Applicant
Source: LSC Transportation Consultants, Inc.			



Approximate Scale
Scale: 1"= 3,000'

Figure 1

Vicinity Map

Meadowlake Industrial Park (LSC #195140)

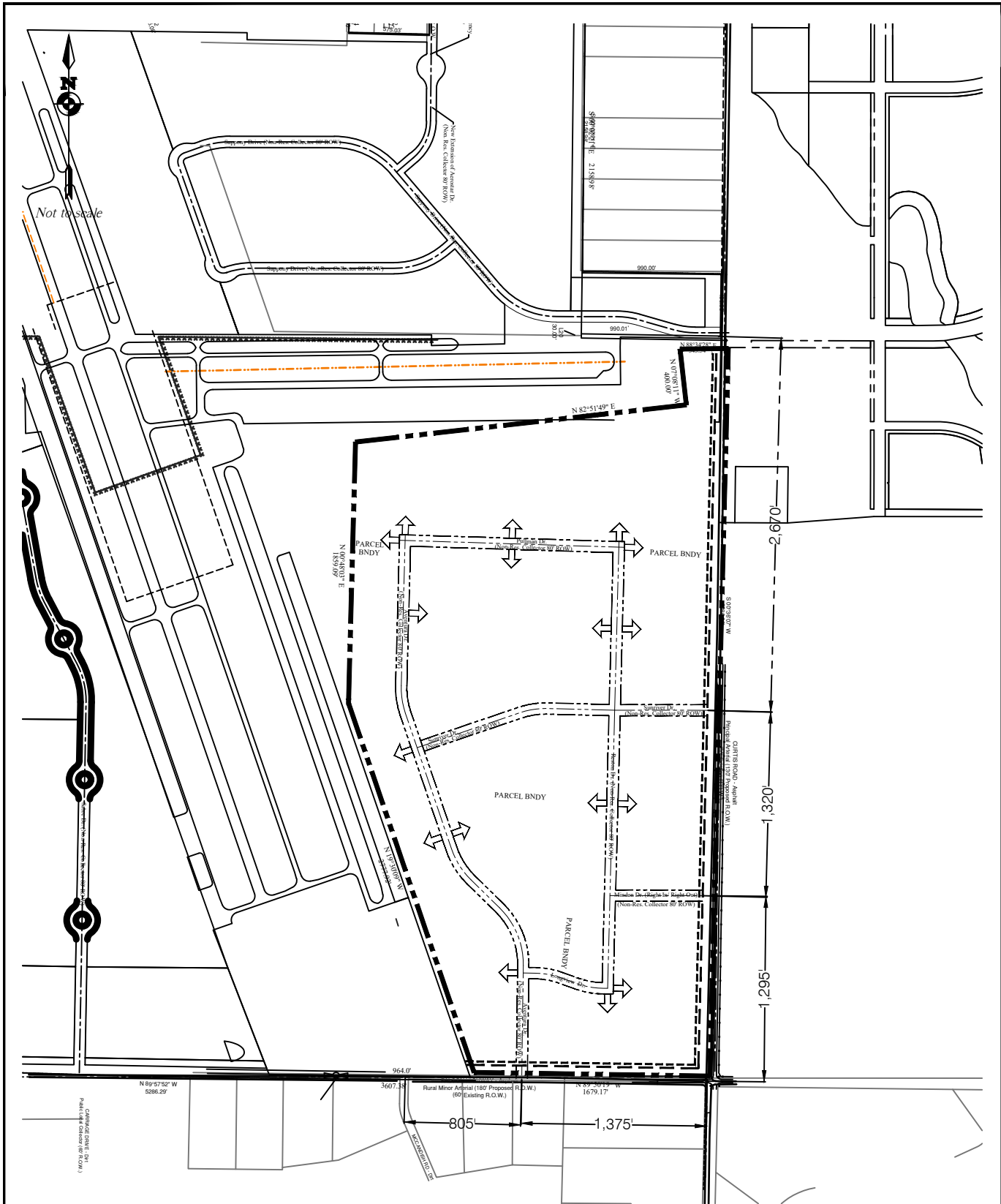
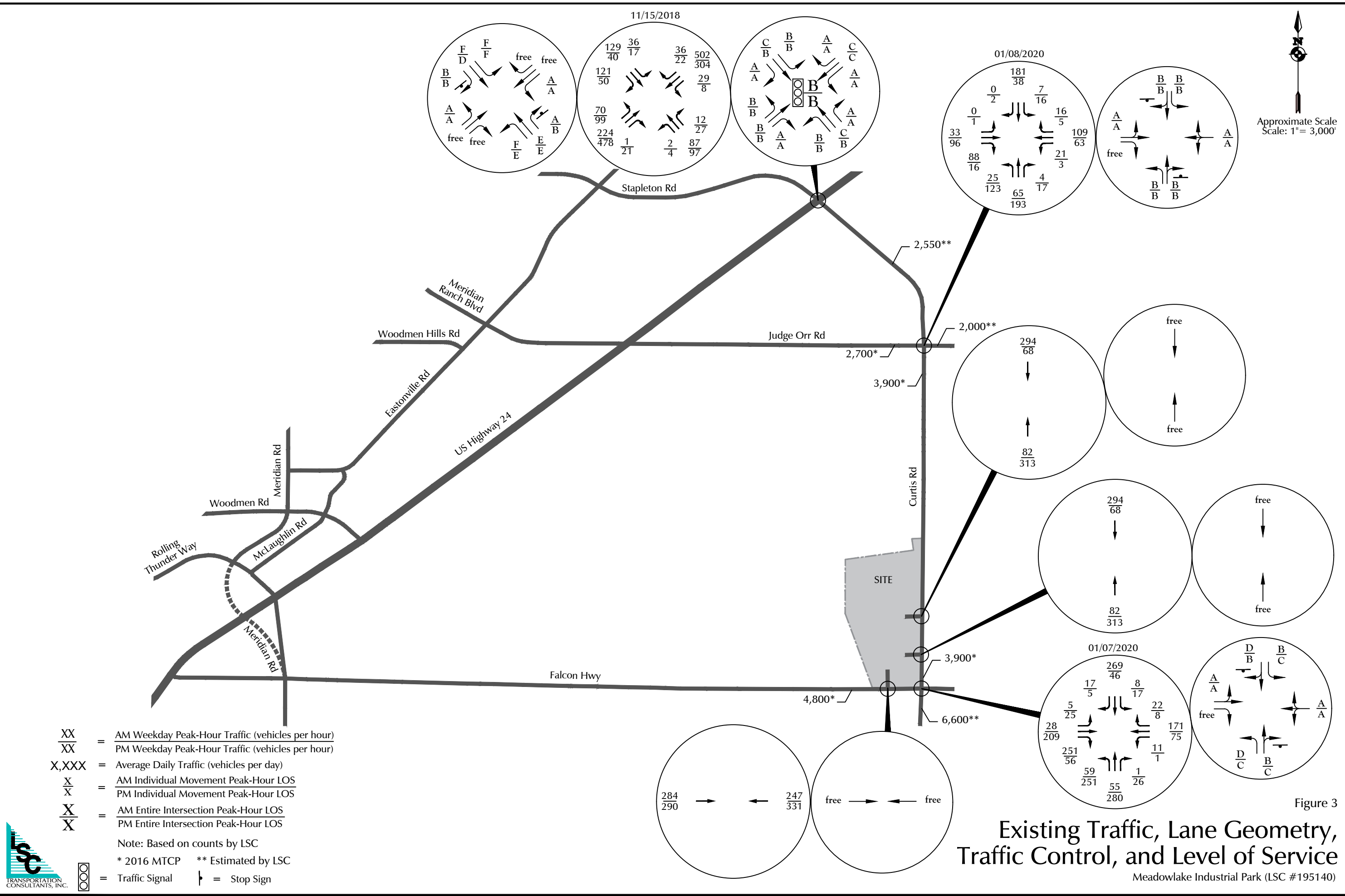
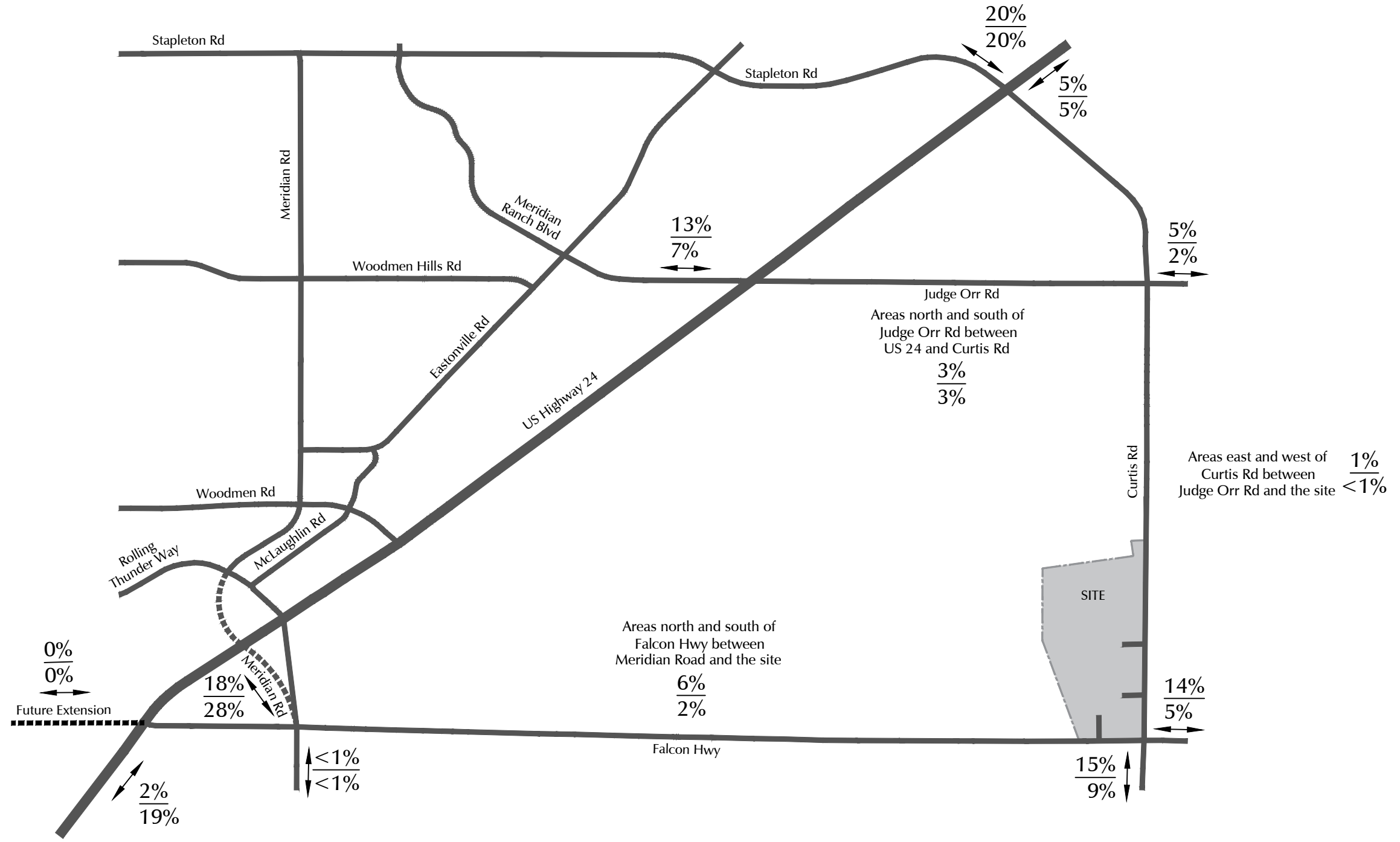
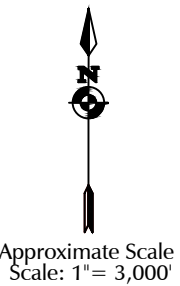


Figure 2
Site
Plan

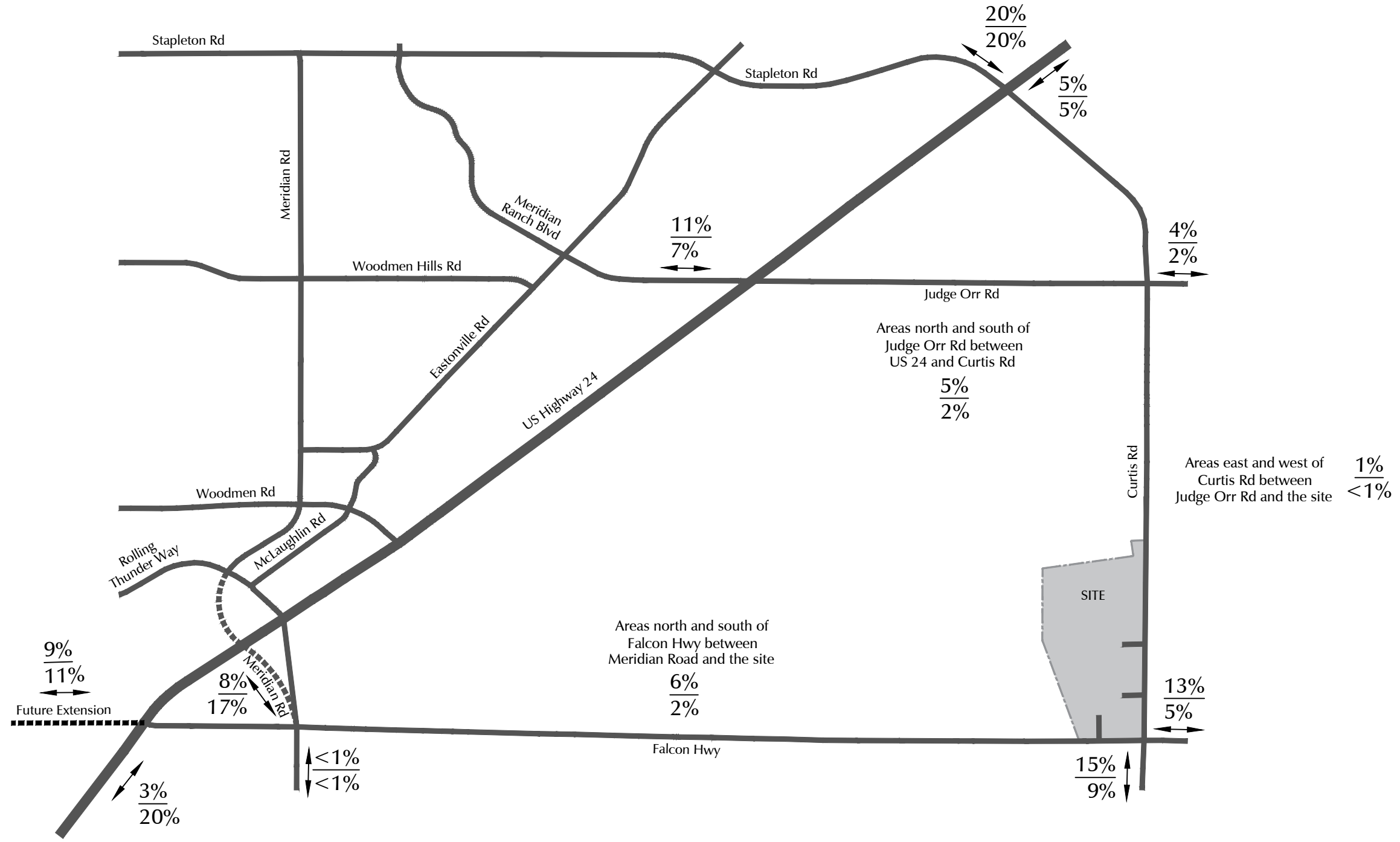
Meadowlake Industrial Park (LSC #195140)

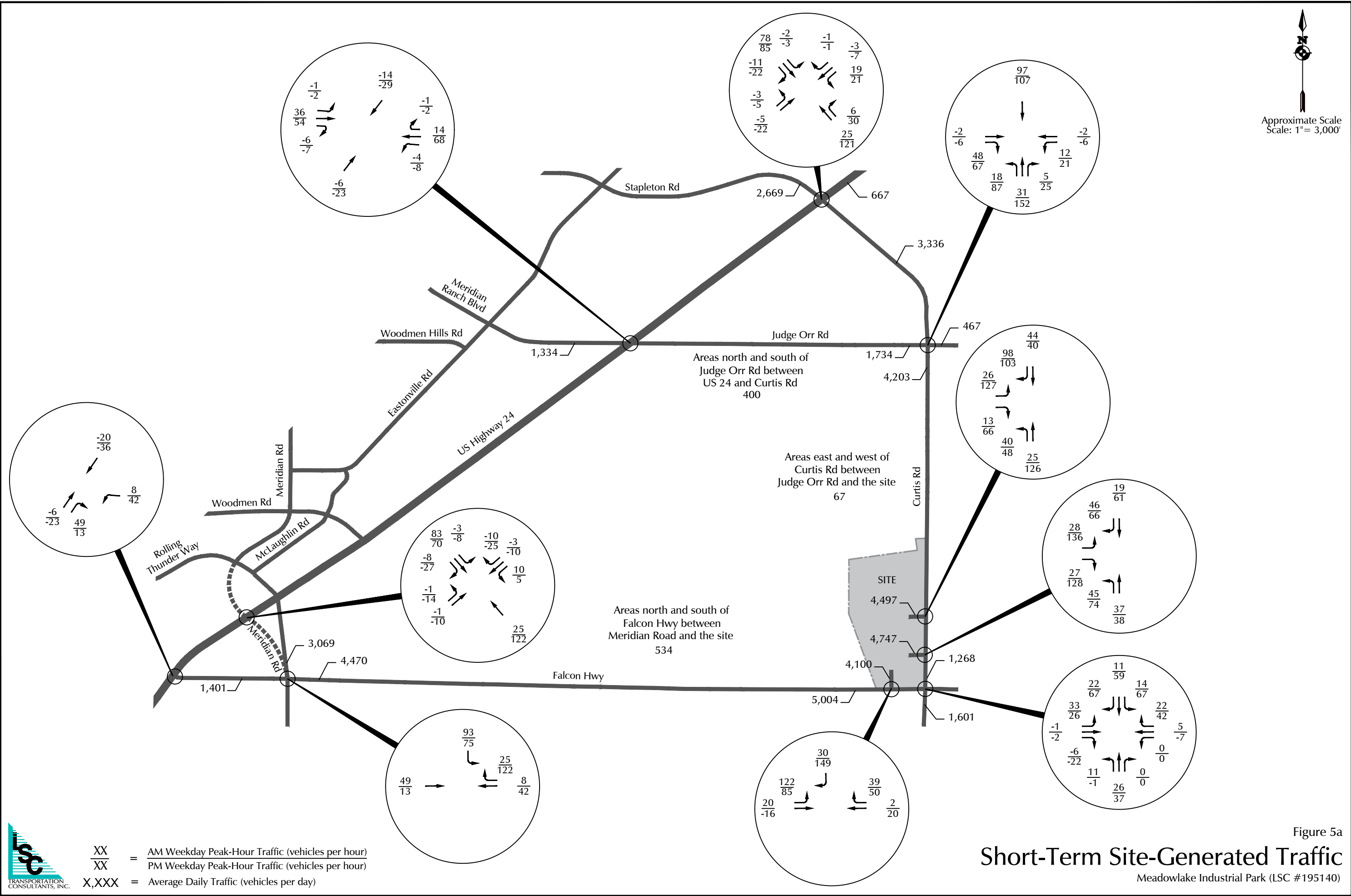




$\frac{XX\%}{XX\%}$ = $\frac{\text{A.M. Peak-Hour Directional Distribution}}{\text{P.M. Peak-Hour Directional Distribution}}$

Figure 4a
Short-Term Directional Distribution
 Meadowlake Industrial Park (LSC #195140)



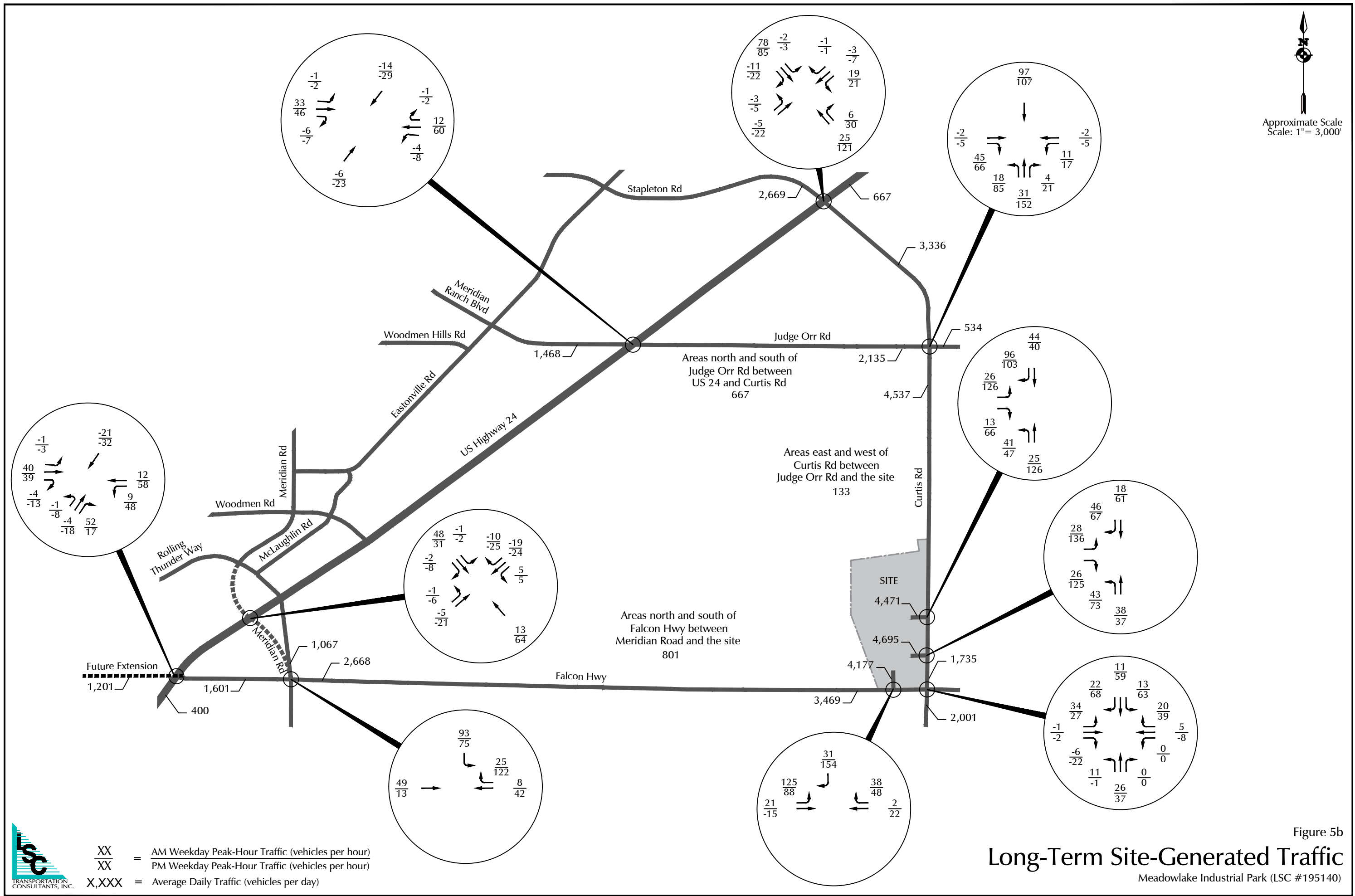


Approximate Scale
Scale: 1" = 3,000'

Figure 5a

Short-Term Site-Generated Traffic

Meadowlake Industrial Park (LSC #195140)



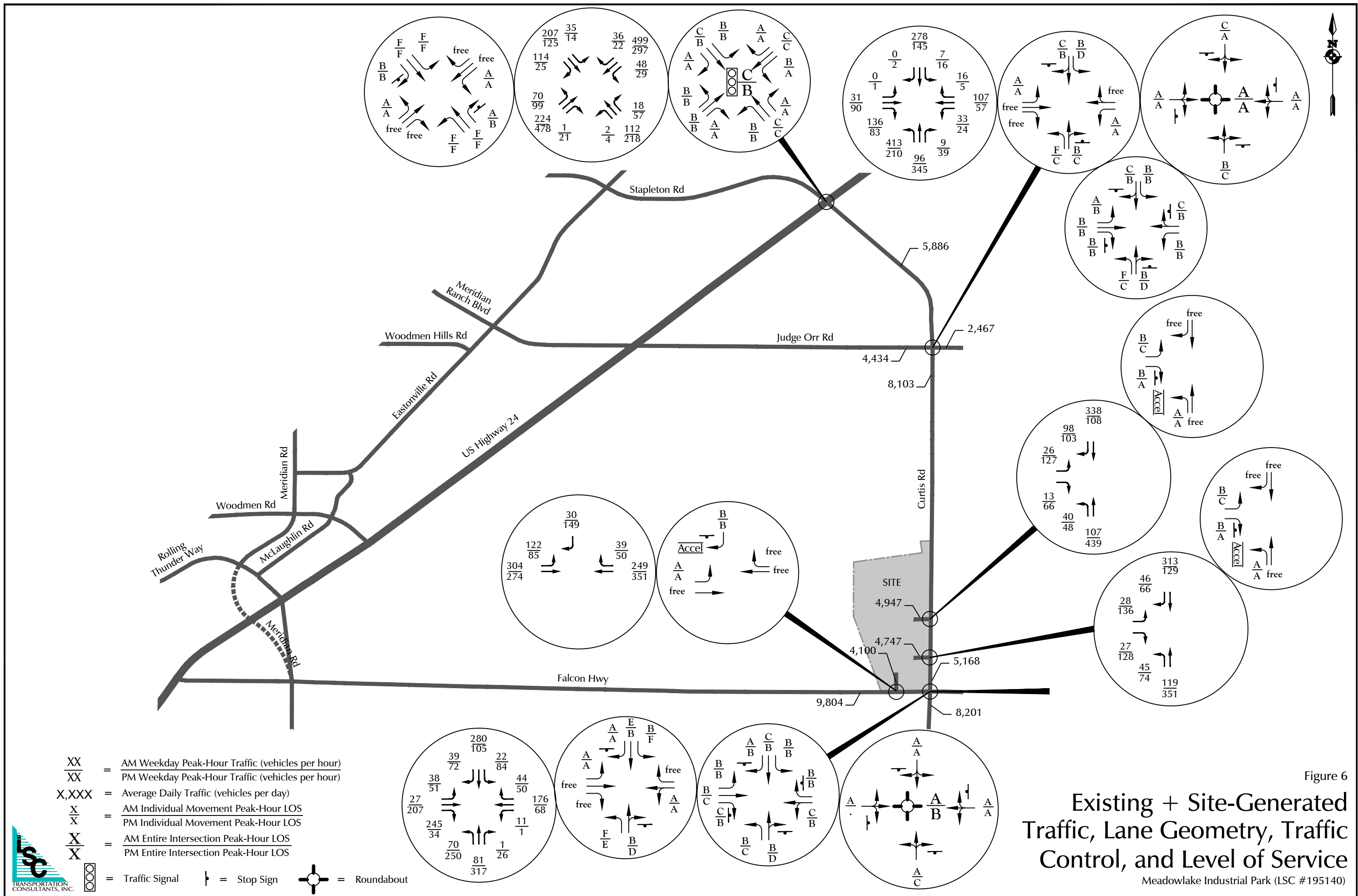
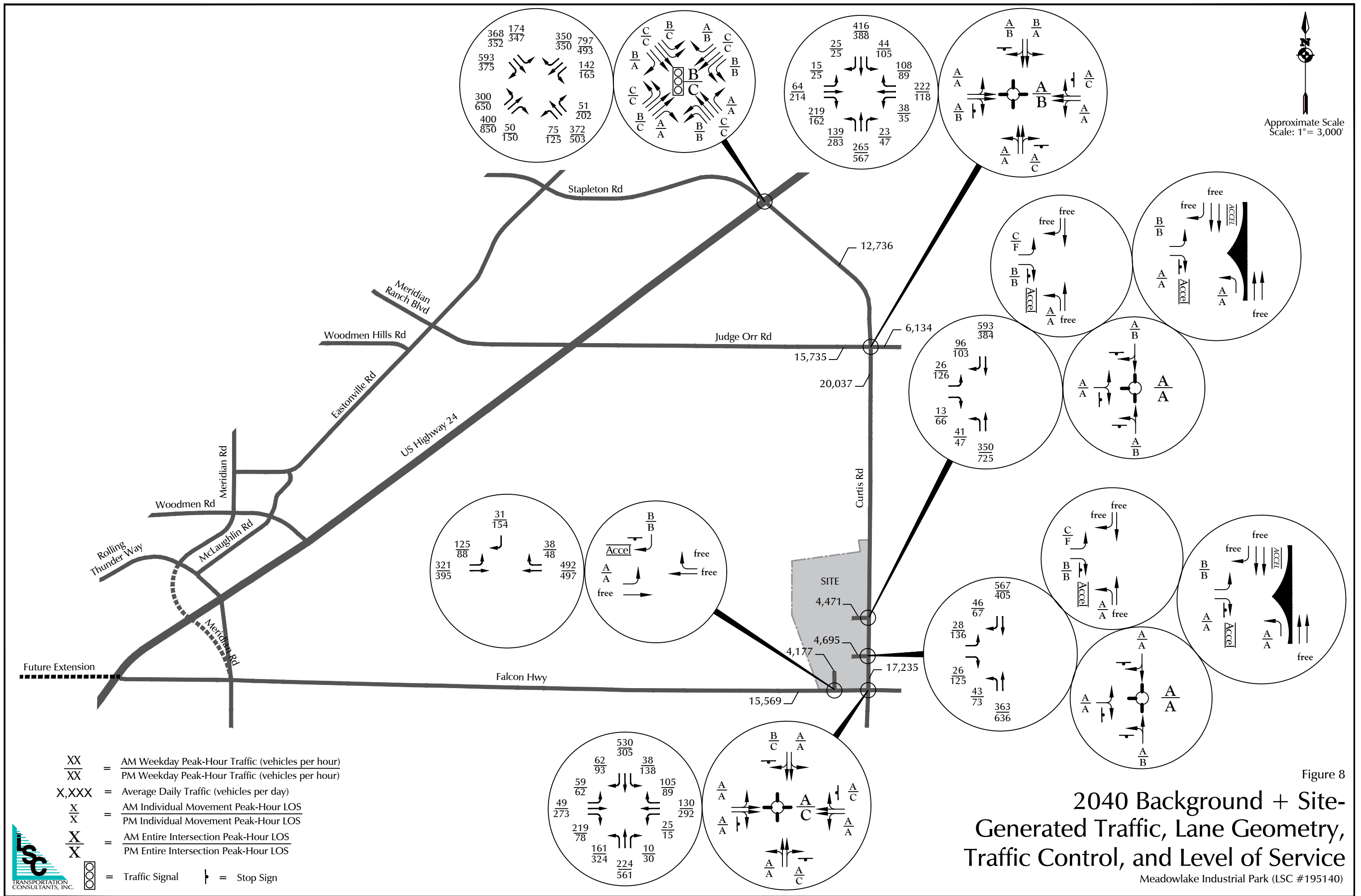





























Figure 6
Existing + Site-Generated
Traffic, Lane Geometry, Traffic
Control, and Level of Service
Meadowlake Industrial Park (LSC #195140)



























Intersection												
Int Delay, s/veh	12.4											
Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Vol, veh/h	36	129	121	2	87	12	70	224	1	29	502	36
Future Vol, veh/h	36	129	121	2	87	12	70	224	1	29	502	36
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	190	-	325	215	-	215	890	-	1000	790	-	790
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	87	87	87	94	94	94	78	78	78	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	41	148	139	2	93	13	90	287	1	29	502	36
Major/Minor	Minor2		Minor1		Major1		Major2		Major2		Major2	
Conflicting Flow All	1081	1028	502	1189	1063	287	538	0	0	288	0	0
Stage 1	560	560	-	467	467	-	-	-	-	-	-	-
Stage 2	521	468	-	722	596	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	195	234	569	165	223	752	1030	-	-	1274	-	-
Stage 1	513	511	-	576	562	-	-	-	-	-	-	-
Stage 2	539	561	-	418	492	-	-	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	113	209	569	49	199	752	1030	-	-	1274	-	-
Mov Cap-2 Maneuver	113	209	-	49	199	-	-	-	-	-	-	-
Stage 1	468	499	-	526	513	-	-	-	-	-	-	-
Stage 2	396	512	-	217	481	-	-	-	-	-	-	-
Approach	SE		NW		NE		SW		SW		SW	
HCM Control Delay, s	37.6		35.4		2.1		0.4		0.4		0.4	
HCM LOS	E		E		E		E		E		E	
Minor Lane/Major Mvmt	NEL	NET	NERNWLn1	NWLn2	NWLn3	SELn1	SELn2	SELn3	SWL	SWT	SWR	SWR
Capacity (veh/h)	1030	-	-	49	199	752	113	209	569	1274	-	-
HCM Lane V/C Ratio	0.087	-	-	0.043	0.465	0.017	0.366	0.709	0.244	0.023	-	-
HCM Control Delay (s)	8.8	-	-	81.8	37.9	9.9	54.2	55.7	13.4	7.9	-	-
HCM Lane LOS	A	-	-	F	E	A	F	F	B	A	-	-
HCM 95th %tile Q(veh)	0.3	-	-	0.1	2.2	0.1	1.5	4.6	1	0.1	-	-

Intersection												
Int Delay, s/veh	6.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	33	88	21	109	16	25	65	4	7	181	0
Future Vol, veh/h	0	33	88	21	109	16	25	65	4	7	181	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	250	-	-	240	-	-	250	-	-	260	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	82	82	82	84	84	84	91	91	91	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	40	107	25	130	19	27	71	4	7	181	0
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	149	0	0	147	0	0	374	293	94	321	337	140
Stage 1	-	-	-	-	-	-	94	94	-	190	190	-
Stage 2	-	-	-	-	-	-	280	199	-	131	147	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1432	-	-	1435	-	-	583	618	963	632	584	908
Stage 1	-	-	-	-	-	-	913	817	-	812	743	-
Stage 2	-	-	-	-	-	-	727	736	-	873	775	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1432	-	-	1435	-	-	435	607	963	565	574	908
Mov Cap-2 Maneuver	-	-	-	-	-	-	435	607	-	565	574	-
Stage 1	-	-	-	-	-	-	913	817	-	812	730	-
Stage 2	-	-	-	-	-	-	537	723	-	793	775	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			1.1			12.2			14		
HCM LOS							B			B		
Minor Lane/Major Mvmt	NBLn1 NBLn2		EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2		
Capacity (veh/h)	435	620	1432	-	-	1435	-	-	565	574		
HCM Lane V/C Ratio	0.063	0.122	-	-	-	0.017	-	-	0.012	0.315		
HCM Control Delay (s)	13.8	11.6	0	-	-	7.6	-	-	11.5	14.1		
HCM Lane LOS	B	B	A	-	-	A	-	-	B	B		
HCM 95th %tile Q(veh)	0.2	0.4	0	-	-	0.1	-	-	0	1.3		

Intersection												
Int Delay, s/veh	12.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	5	28	251	11	171	22	59	55	1	8	269	17
Future Vol, veh/h	5	28	251	11	171	22	59	55	1	8	269	17
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	295	-	-	-	340	-	-	290	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	85	85	85	100	100	100	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	5	30	270	13	201	26	59	55	1	9	299	19
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	227	0	0	300	0	0	439	293	30	443	550	214
Stage 1	-	-	-	-	-	-	40	40	-	240	240	-
Stage 2	-	-	-	-	-	-	399	253	-	203	310	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1341	-	-	1261	-	-	528	618	1044	525	443	826
Stage 1	-	-	-	-	-	-	975	862	-	763	707	-
Stage 2	-	-	-	-	-	-	627	698	-	799	659	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1341	-	-	1261	-	-	227	607	1044	482	435	826
Mov Cap-2 Maneuver	-	-	-	-	-	-	227	607	-	482	435	-
Stage 1	-	-	-	-	-	-	970	858	-	759	699	-
Stage 2	-	-	-	-	-	-	346	690	-	743	656	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.1			0.4			19.1			29.9		
HCM LOS							C			D		
Minor Lane/Major Mvmt	NBLn1		NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2	
Capacity (veh/h)	227		612	1341	-	-	1261	-	-	482	448	
HCM Lane V/C Ratio	0.26		0.092	0.004	-	-	0.01	-	-	0.018	0.709	
HCM Control Delay (s)	26.3		11.5	7.7	0	-	7.9	0	-	12.6	30.4	
HCM Lane LOS	D		B	A	A	-	A	A	-	B	D	
HCM 95th %tile Q(veh)	1		0.3	0	-	-	0	-	-	0.1	5.5	













Lanes, Volumes, Timings
8: US 24 & Curtis/Stapleton

2020 Existing
AM

												
Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	36	129	121	2	87	12	70	224	1	29	502	36
Future Volume (vph)	36	129	121	2	87	12	70	224	1	29	502	36
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	190		325	215		215	890		1000	790		790
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (ft)	240			200			190			190		
Lane Util. 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
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.644			0.663			0.191			0.551		
Satd. Flow (perm)	1200	1863	1583	1235	1863	1583	356	1863	1583	1026	1863	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			143			143			143			143
Link Speed (mph)		45			45			55			55	
Link Distance (ft)		4560			5565			6479			6170	
Travel Time (s)		69.1			84.3			80.3			76.5	
Peak Hour Factor	0.87	0.87	0.87	0.94	0.94	0.94	0.78	0.78	0.78	1.00	1.00	1.00
Adj. Flow (vph)	41	148	139	2	93	13	90	287	1	29	502	36
Shared Lane Traffic (%)												
Lane Group Flow (vph)	41	148	139	2	93	13	90	287	1	29	502	36
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												
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	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	20
Trailing Detector (ft)	0	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	0
Detector 1 Size(ft)	20	6	20	20	6	20	20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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	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	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+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	Perm
Protected Phases	1	6		5	2		7	4		3	8	
Permitted Phases	6		6	2		2	4		4	8		8

Lanes, Volumes, Timings
8: US 24 & Curtis/Stapleton

2020 Existing
AM

												
Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Detector Phase	1	6	6	5	2	2	7	4	4	3	8	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)	9.5	23.5	23.5	9.5	23.5	23.5	10.0	37.5	37.5	9.5	37.0	37.0
Total Split (%)	11.9%	29.4%	29.4%	11.9%	29.4%	29.4%	12.5%	46.9%	46.9%	11.9%	46.3%	46.3%
Maximum Green (s)	5.0	19.0	19.0	5.0	19.0	19.0	5.5	33.0	33.0	5.0	32.5	32.5
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	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	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	3.0	3.0
Recall Mode	None	Max	Max	None	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)		11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	0
Act Effect Green (s)	24.5	23.7	23.7	22.9	20.4	20.4	28.4	26.6	26.6	26.0	22.3	22.3
Actuated g/C Ratio	0.38	0.37	0.37	0.35	0.32	0.32	0.44	0.41	0.41	0.40	0.35	0.35
v/c Ratio	0.08	0.22	0.21	0.00	0.16	0.02	0.32	0.37	0.00	0.06	0.78	0.06
Control Delay	16.2	20.0	5.3	16.0	22.9	0.1	12.6	15.9	0.0	9.7	29.2	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	16.2	20.0	5.3	16.0	22.9	0.1	12.6	15.9	0.0	9.7	29.2	0.2
LOS	B	C	A	B	C	A	B	B	A	A	C	A
Approach Delay		13.3			20.0			15.1			26.4	
Approach LOS		B			B			B			C	

Intersection Summary

Area Type: Other

Cycle Length: 80

Actuated Cycle Length: 64.6

Natural Cycle: 65

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.78

Intersection Signal Delay: 19.7









Intersection LOS: B













Intersection Capacity Utilization 50.5%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 8: US 24 & Curtis/Stapleton









			
Ø1	Ø2	Ø3	Ø4
9.5 s	23.5 s	9.5 s	37.5 s
			
Ø5	Ø6	Ø7	Ø8
9.5 s	23.5 s	10 s	37 s

Intersection												
Int Delay, s/veh	6.6											
Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Vol, veh/h	17	40	50	4	97	27	99	478	21	8	304	22
Future Vol, veh/h	17	40	50	4	97	27	99	478	21	8	304	22
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	190	-	325	215	-	215	890	-	1000	790	-	790
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	93	93	93	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	17	40	50	4	97	27	106	514	23	9	358	26

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	1176	1125	358	1160	1128	514	384	0	0	537	0	0
Stage 1	376	376	-	726	726	-	-	-	-	-	-	-
Stage 2	800	749	-	434	402	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	168	205	686	172	204	560	1174	-	-	1031	-	-
Stage 1	645	616	-	416	430	-	-	-	-	-	-	-
Stage 2	379	419	-	600	600	-	-	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	87	185	686	123	184	560	1174	-	-	1031	-	-
Mov Cap-2 Maneuver	87	185	-	123	184	-	-	-	-	-	-	-
Stage 1	587	610	-	379	391	-	-	-	-	-	-	-
Stage 2	247	381	-	515	595	-	-	-	-	-	-	-

Approach	SE	NW	NE	SW
HCM Control Delay, s	25	37.3	1.4	0.2
HCM LOS	D	E		

























Minor Lane/Major Mvmt	NEL	NET	NERNWLn1	NWLn2	NWLn3	SELn1	SELn2	SELn3	SWL	SWT	SWR	
Capacity (veh/h)	1174	-	-	123	184	560	87	185	686	1031	-	-
HCM Lane V/C Ratio	0.091	-	-	0.033	0.527	0.048	0.195	0.216	0.073	0.009	-	-
HCM Control Delay (s)	8.4	-	-	35.3	44.5	11.8	56.2	29.7	10.7	8.5	-	-
HCM Lane LOS	A	-	-	E	E	B	F	D	B	A	-	-
HCM 95th %tile Q(veh)	0.3	-	-	0.1	2.7	0.2	0.7	0.8	0.2	0	-	-

Intersection												
Int Delay, s/veh	8.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	96	16	3	63	5	123	193	17	16	38	2
Future Vol, veh/h	1	96	16	3	63	5	123	193	17	16	38	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	250	-	-	240	-	-	250	-	-	260	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	88	88	88	81	81	81	79	79	79	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	109	18	4	78	6	156	244	22	16	38	2
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	84	0	0	127	0	0	229	212	118	342	218	81
Stage 1	-	-	-	-	-	-	120	120	-	89	89	-
Stage 2	-	-	-	-	-	-	109	92	-	253	129	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1513	-	-	1459	-	-	726	685	934	612	680	979
Stage 1	-	-	-	-	-	-	884	796	-	918	821	-
Stage 2	-	-	-	-	-	-	896	819	-	751	789	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1513	-	-	1459	-	-	692	682	934	430	677	979
Mov Cap-2 Maneuver	-	-	-	-	-	-	692	682	-	430	677	-
Stage 1	-	-	-	-	-	-	883	795	-	917	819	-
Stage 2	-	-	-	-	-	-	850	817	-	508	788	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.1			0.3			12.7			11.5		
HCM LOS							B			B		
Minor Lane/Major Mvmt	NBLn1 NBLn2		EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2		
Capacity (veh/h)	692	697	1513	-	-	1459	-	-	430	688		
HCM Lane V/C Ratio	0.225	0.381	0.001	-	-	0.003	-	-	0.037	0.058		
HCM Control Delay (s)	11.7	13.3	7.4	-	-	7.5	-	-	13.7	10.6		
HCM Lane LOS	B	B	A	-	-	A	-	-	B	B		
HCM 95th %tile Q(veh)	0.9	1.8	0	-	-	0	-	-	0.1	0.2		

Intersection												
Int Delay, s/veh	12.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↰	↱		↰	↱	↰	↱		↰	↱	
Traffic Vol, veh/h	25	209	56	1	75	8	251	280	26	17	46	5
Future Vol, veh/h	25	209	56	1	75	8	251	280	26	17	46	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	295	-	-	-	340	-	-	290	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	92	92	92	81	81	81
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	25	209	56	1	75	8	273	304	28	21	57	6
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	83	0	0	265	0	0	372	344	209	534	396	79
Stage 1	-	-	-	-	-	-	259	259	-	81	81	-
Stage 2	-	-	-	-	-	-	113	85	-	453	315	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1514	-	-	1299	-	-	585	579	831	457	541	981
Stage 1	-	-	-	-	-	-	746	694	-	927	828	-
Stage 2	-	-	-	-	-	-	892	824	-	586	656	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1514	-	-	1299	-	-	525	567	831	250	530	981
Mov Cap-2 Maneuver	-	-	-	-	-	-	525	567	-	250	530	-
Stage 1	-	-	-	-	-	-	731	680	-	908	827	-
Stage 2	-	-	-	-	-	-	825	823	-	306	643	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.6			0.1			19.1			14.4		
HCM LOS							C			B		
Minor Lane/Major Mvmt	NBLn1 NBLn2		EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2		
Capacity (veh/h)	525	583	1514	-	-	1299	-	-	250	555		
HCM Lane V/C Ratio	0.52	0.571	0.017	-	-	0.001	-	-	0.084	0.113		
HCM Control Delay (s)	19	19.1	7.4	0	-	7.8	0	-	20.7	12.3		
HCM Lane LOS	C	C	A	A	-	A	A	-	C	B		
HCM 95th %tile Q(veh)	3	3.6	0.1	-	-	0	-	-	0.3	0.4		













Lanes, Volumes, Timings
8: US 24 & Curtis/Stapleton

2020 Existing
PM

												
Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	17	40	50	4	97	27	99	478	21	8	304	22
Future Volume (vph)	17	40	50	4	97	27	99	478	21	8	304	22
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	190		325	215		215	890		1000	790		790
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (ft)	240			200			190			190		
Lane Util. 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
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.694			0.731			0.324			0.292		
Satd. Flow (perm)	1293	1863	1583	1362	1863	1583	604	1863	1583	544	1863	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			143			143			143			143
Link Speed (mph)		45			45			55			55	
Link Distance (ft)		4560			5565			6479			6170	
Travel Time (s)		69.1			84.3			80.3			76.5	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.93	0.93	0.93	0.85	0.85	0.85
Adj. Flow (vph)	17	40	50	4	97	27	106	514	23	9	358	26
Shared Lane Traffic (%)												
Lane Group Flow (vph)	17	40	50	4	97	27	106	514	23	9	358	26
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												
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	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	20
Trailing Detector (ft)	0	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	0
Detector 1 Size(ft)	20	6	20	20	6	20	20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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	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	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+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	Perm
Protected Phases	1	6		5	2		7	4		3	8	
Permitted Phases	6		6	2		2	4		4	8		8

Lanes, Volumes, Timings
8: US 24 & Curtis/Stapleton

2020 Existing
PM

												
Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Detector Phase	1	6	6	5	2	2	7	4	4	3	8	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)	9.5	23.5	23.5	9.5	23.5	23.5	10.0	37.5	37.5	9.5	37.0	37.0
Total Split (%)	11.9%	29.4%	29.4%	11.9%	29.4%	29.4%	12.5%	46.9%	46.9%	11.9%	46.3%	46.3%
Maximum Green (s)	5.0	19.0	19.0	5.0	19.0	19.0	5.5	33.0	33.0	5.0	32.5	32.5
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	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	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	3.0	3.0
Recall Mode	None	Max	Max	None	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)		11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	0
Act Effect Green (s)	20.7	20.0	20.0	20.7	20.0	20.0	24.5	23.7	23.7	21.2	17.3	17.3
Actuated g/C Ratio	0.37	0.36	0.36	0.37	0.36	0.36	0.44	0.42	0.42	0.38	0.31	0.31
v/c Ratio	0.03	0.06	0.08	0.01	0.15	0.04	0.28	0.65	0.03	0.03	0.62	0.04
Control Delay	14.6	17.6	0.2	14.8	17.7	0.1	10.4	17.9	0.1	8.5	22.1	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	14.6	17.6	0.2	14.8	17.7	0.1	10.4	17.9	0.1	8.5	22.1	0.1
LOS	B	B	A	B	B	A	B	B	A	A	C	A
Approach Delay		9.0			13.9			16.0			20.3	
Approach LOS		A			B			B			C	

Intersection Summary

Area Type: Other

Cycle Length: 80

Actuated Cycle Length: 55.8

Natural Cycle: 65

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.65

Intersection Signal Delay: 16.5









Intersection LOS: B













Intersection Capacity Utilization 48.2%










ICU Level of Service A











Analysis Period (min) 15

Splits and Phases: 8: US 24 & Curtis/Stapleton

			
Ø1	Ø2	Ø3	Ø4
9.5 s	23.5 s	9.5 s	37.5 s
			
Ø5	Ø6	Ø7	Ø8
9.5 s	23.5 s	10 s	37 s

Intersection												
Int Delay, s/veh	33.1											
Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Vol, veh/h	35	207	114	2	112	18	70	224	1	48	499	36
Future Vol, veh/h	35	207	114	2	112	18	70	224	1	48	499	36
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	190	-	325	215	-	215	890	-	1000	790	-	790
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	87	87	87	94	94	94	78	78	78	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	40	238	131	2	119	19	90	287	1	48	499	36
Major/Minor	Minor2		Minor1		Major1		Major2		Major2		Major2	
Conflicting Flow All	1132	1063	499	1265	1098	287	535	0	0	288	0	0
Stage 1	595	595	-	467	467	-	-	-	-	-	-	-
Stage 2	537	468	-	798	631	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	180	~ 223	572	146	213	752	1033	-	-	1274	-	-
Stage 1	491	492	-	576	562	-	-	-	-	-	-	-
Stage 2	528	561	-	380	474	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	79	~ 196	572	-	187	752	1033	-	-	1274	-	-
Mov Cap-2 Maneuver	79	~ 196	-	-	187	-	-	-	-	-	-	-
Stage 1	448	473	-	526	513	-	-	-	-	-	-	-
Stage 2	361	512	-	140	456	-	-	-	-	-	-	-
Approach	SE		NW		NE		SW		SW		SW	
HCM Control Delay, s	119.3				2.1		0.7					
HCM LOS	F		-									
Minor Lane/Major Mvmt	NEL	NET	NERNWLn1	NWLn2	NWLn3	SELn1	SELn2	SELn3	SWL	SWT	SWR	
Capacity (veh/h)	1033	-	-	-	187	752	79	196	572	1274	-	-
HCM Lane V/C Ratio	0.087	-	-	-	0.637	0.025	0.509	1.214	0.229	0.038	-	-
HCM Control Delay (s)	8.8	-	-	-	53	9.9	90.6	182.6	13.2	7.9	-	-
HCM Lane LOS	A	-	-	-	F	A	F	F	B	A	-	-
HCM 95th %tile Q(veh)	0.3	-	-	-	3.7	0.1	2.2	12.4	0.9	0.1	-	-
Notes												
~: Volume exceeds capacity		\$: Delay exceeds 300s		+: Computation Not Defined		*: All major volume in platoon						







Intersection												
Int Delay, s/veh	95.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	31	136	33	107	16	413	96	9	7	278	0
Future Vol, veh/h	0	31	136	33	107	16	413	96	9	7	278	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	250	-	235	240	-	-	250	-	-	260	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	82	82	82	84	84	84	91	91	91	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	38	166	39	127	19	454	105	10	7	278	0
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	146	0	0	204	0	0	392	262	38	394	419	137
Stage 1	-	-	-	-	-	-	38	38	-	215	215	-
Stage 2	-	-	-	-	-	-	354	224	-	179	204	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1436	-	-	1368	-	-	567	643	1034	566	525	911
Stage 1	-	-	-	-	-	-	977	863	-	787	725	-
Stage 2	-	-	-	-	-	-	663	718	-	823	733	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1436	-	-	1368	-	-	~ 316	624	1034	478	510	911
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 316	624	-	478	510	-
Stage 1	-	-	-	-	-	-	977	863	-	787	704	-
Stage 2	-	-	-	-	-	-	~ 390	697	-	715	733	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			1.6			197.7			20		
HCM LOS							F			C		
Minor Lane/Major Mvmt	NBLn1 NBLn2		EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2		
Capacity (veh/h)	316	646	1436	-	-	1368	-	-	478	510		
HCM Lane V/C Ratio	1.436	0.179	-	-	-	0.029	-	-	0.015	0.545		
HCM Control Delay (s)	244.9	11.8	0	-	-	7.7	-	-	12.6	20.2		
HCM Lane LOS	F	B	A	-	-	A	-	-	B	C		
HCM 95th %tile Q(veh)	24.2	0.6	0	-	-	0.1	-	-	0	3.2		
Notes												
~: Volume exceeds capacity		\$: Delay exceeds 300s		+: Computation Not Defined				*: All major volume in platoon				






Intersection												
Int Delay, s/veh	16.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	38	27	245	11	176	44	70	81	1	22	280	39
Future Vol, veh/h	38	27	245	11	176	44	70	81	1	22	280	39
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	290	-	295	-	-	290	340	-	-	290	-	235
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	85	85	85	100	100	100	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	41	29	263	13	207	52	70	81	1	24	311	43

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	259	0	0	292	0	0	547	396	29	517	607	207
Stage 1	-	-	-	-	-	-	111	111	-	233	233	-
Stage 2	-	-	-	-	-	-	436	285	-	284	374	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1306	-	-	1270	-	-	448	541	1046	469	411	833
Stage 1	-	-	-	-	-	-	894	804	-	770	712	-
Stage 2	-	-	-	-	-	-	599	676	-	723	618	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1306	-	-	1270	-	-	142	518	1046	399	393	833
Mov Cap-2 Maneuver	-	-	-	-	-	-	142	518	-	399	393	-
Stage 1	-	-	-	-	-	-	866	779	-	746	703	-
Stage 2	-	-	-	-	-	-	313	668	-	627	599	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	1			0.4			31.4			35.9		
HCM LOS							D			E		










Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2	SBLn3
Capacity (veh/h)	142	521	1306	-	-	1270	-	-	399	393	833
HCM Lane V/C Ratio	0.493	0.157	0.031	-	-	0.01	-	-	0.061	0.792	0.052
HCM Control Delay (s)	52.8	13.2	7.8	-	-	7.9	0	-	14.6	41.2	9.6
HCM Lane LOS	F	B	A	-	-	A	A	-	B	E	A
HCM 95th %tile Q(veh)	2.3	0.6	0.1	-	-	0	-	-	0.2	6.8	0.2

Intersection						
Int Delay, s/veh	1.3					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	26	13	40	107	338	98
Future Vol, veh/h	26	13	40	107	338	98
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	245	-	-	195
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	100	100	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	28	14	40	107	376	109
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	563	376	485	0	-	0
Stage 1	376	-	-	-	-	-
Stage 2	187	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	487	670	1078	-	-	-
Stage 1	694	-	-	-	-	-
Stage 2	845	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	469	670	1078	-	-	-
Mov Cap-2 Maneuver	469	-	-	-	-	-
Stage 1	668	-	-	-	-	-
Stage 2	845	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	12.3	2.3		0		
HCM LOS	B					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1078	-	469	670	-	-
HCM Lane V/C Ratio	0.037	-	0.06	0.021	-	-
HCM Control Delay (s)	8.5	-	13.2	10.5	-	-
HCM Lane LOS	A	-	B	B	-	-
HCM 95th %tile Q(veh)	0.1	-	0.2	0.1	-	-

Intersection						
Int Delay, s/veh	1.7					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	28	27	45	119	313	46
Future Vol, veh/h	28	27	45	119	313	46
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	100	100	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	30	29	45	119	348	51
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	557	348	399	0	-	0
Stage 1	348	-	-	-	-	-
Stage 2	209	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	491	695	1160	-	-	-
Stage 1	715	-	-	-	-	-
Stage 2	826	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	470	695	1160	-	-	-
Mov Cap-2 Maneuver	470	-	-	-	-	-
Stage 1	685	-	-	-	-	-
Stage 2	826	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	11.8	2.3		0		
HCM LOS	B					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1160	-	470	695	-	-
HCM Lane V/C Ratio	0.039	-	0.065	0.042	-	-
HCM Control Delay (s)	8.2	-	13.2	10.4	-	-
HCM Lane LOS	A	-	B	B	-	-
HCM 95th %tile Q(veh)	0.1	-	0.2	0.1	-	-

Intersection						
Int Delay, s/veh	1.7					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑	↗		↗
Traffic Vol, veh/h	122	304	249	39	0	30
Future Vol, veh/h	122	304	249	39	0	30
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	260	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	93	93	85	85	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	131	327	293	46	0	33
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	339	0	-	0	-	293
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	4.12	-	-	-	-	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	2.218	-	-	-	-	3.318
Pot Cap-1 Maneuver	1220	-	-	-	0	746
Stage 1	-	-	-	-	0	-
Stage 2	-	-	-	-	0	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1220	-	-	-	-	746
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	EB	WB		SB		
HCM Control Delay, s	2.4	0		10		
HCM LOS	B					
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1220	-	-	-	-	746
HCM Lane V/C Ratio	0.108	-	-	-	-	0.044
HCM Control Delay (s)	8.3	-	-	-	-	10
HCM Lane LOS	A	-	-	-	-	B
HCM 95th %tile Q(veh)	0.4	-	-	-	-	0.1











Intersection	
Intersection Delay, s/veh	33.6
Intersection LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	31	136	33	107	16	413	96	9	7	278	0
Future Vol, veh/h	0	31	136	33	107	16	413	96	9	7	278	0
Peak Hour Factor	0.82	0.82	0.82	0.84	0.84	0.84	0.91	0.91	0.91	1.00	1.00	1.00
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	38	166	39	127	19	454	105	10	7	278	0
Number of Lanes	1	1	1	1	1	0	1	1	0	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	3	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	3	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	2	3
HCM Control Delay	14.3	14.9	52.3	22.2
HCM LOS	B	B	F	C

Lane	NBLn1	NBLn2	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	100%	0%	0%	0%	0%	100%	0%	100%	0%
Vol Thru, %	0%	91%	100%	100%	0%	0%	87%	0%	100%
Vol Right, %	0%	9%	0%	0%	100%	0%	13%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	413	105	0	31	136	33	123	7	278
LT Vol	413	0	0	0	0	33	0	7	0
Through Vol	0	96	0	31	0	0	107	0	278
RT Vol	0	9	0	0	136	0	16	0	0
Lane Flow Rate	454	115	0	38	166	39	146	7	278
Geometry Grp	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.971	0.229	0	0.089	0.357	0.098	0.341	0.016	0.612
Departure Headway (Hd)	7.703	7.131	8.476	8.476	7.753	9.005	8.395	8.443	7.93
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	472	502	0	421	461	396	426	422	453
Service Time	5.471	4.899	6.263	6.263	5.54	6.795	6.184	6.225	5.712
HCM Lane V/C Ratio	0.962	0.229	0	0.09	0.36	0.098	0.343	0.017	0.614
HCM Control Delay	62.6	12	11.3	12.1	14.8	12.8	15.5	11.4	22.5
HCM Lane LOS	F	B	N	B	B	B	C	B	C
HCM 95th-tile Q	12.2	0.9	0	0.3	1.6	0.3	1.5	0	4

Intersection												
Intersection Delay, s/veh	16											
Intersection LOS	C											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	38	27	245	11	176	44	70	81	1	22	280	39
Future Vol, veh/h	38	27	245	11	176	44	70	81	1	22	280	39
Peak Hour Factor	0.93	0.93	0.93	0.85	0.85	0.85	1.00	1.00	1.00	0.90	0.90	0.90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	41	29	263	13	207	52	70	81	1	24	311	43
Number of Lanes	1	1	1	0	1	1	1	1	0	1	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	3	3	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	3	2	3	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	3	2	3
HCM Control Delay	14.6	15.2	12.4	19.1
HCM LOS	B	C	B	C

Lane	NBLn1	NBLn2	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	SBLn1	SBLn2	SBLn3
Vol Left, %	100%	0%	100%	0%	0%	6%	0%	100%	0%	0%
Vol Thru, %	0%	99%	0%	100%	0%	94%	0%	0%	100%	0%
Vol Right, %	0%	1%	0%	0%	100%	0%	100%	0%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	70	82	38	27	245	187	44	22	280	39
LT Vol	70	0	38	0	0	11	0	22	0	0
Through Vol	0	81	0	27	0	176	0	0	280	0
RT Vol	0	1	0	0	245	0	44	0	0	39
Lane Flow Rate	70	82	41	29	263	220	52	24	311	43
Geometry Grp	8	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.161	0.177	0.089	0.059	0.487	0.456	0.097	0.052	0.621	0.078
Departure Headway (Hd)	8.284	7.766	7.871	7.363	6.651	7.457	6.716	7.694	7.187	6.477
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	433	461	455	486	540	482	533	465	501	552
Service Time	6.047	5.529	5.625	5.117	4.405	5.211	4.47	5.447	4.94	4.23
HCM Lane V/C Ratio	0.162	0.178	0.09	0.06	0.487	0.456	0.098	0.052	0.621	0.078
HCM Control Delay	12.6	12.2	11.4	10.6	15.6	16.4	10.2	10.9	21.1	9.8
HCM Lane LOS	B	B	B	B	C	C	B	B	C	A
HCM 95th-tile Q	0.6	0.6	0.3	0.2	2.6	2.3	0.3	0.2	4.2	0.3

9: Curtis & Judge Orr Performance by lane Interval #1 7:30

Lane	EB	WB	NB	SB	All
Movements Served	LTR	LTR	LTR	LTR	
Denied Del/Veh (s)					0.2
Total Del/Veh (s)	6.6	5.5	8.3	12.9	8.9

9: Curtis & Judge Orr Performance by lane Interval #2 7:45

Lane	EB	WB	NB	SB	All
Movements Served	LTR	LTR	LTR	LTR	
Denied Del/Veh (s)					0.2
Total Del/Veh (s)	6.0	5.7	7.9	12.9	8.6

9: Curtis & Judge Orr Performance by lane Interval #3 8:00

Lane	EB	WB	NB	SB	All
Movements Served	LTR	LTR	LTR	LTR	
Denied Del/Veh (s)					0.2
Total Del/Veh (s)	6.4	6.4	10.0	12.6	9.5

9: Curtis & Judge Orr Performance by lane Interval #4 8:15

Lane	EB	WB	NB	SB	All
Movements Served	LTR	LTR	LTR	LTR	
Denied Del/Veh (s)					0.1
Total Del/Veh (s)	5.9	5.7	8.1	15.5	9.7

9: Curtis & Judge Orr Performance by lane Entire Run

Lane	EB	WB	NB	SB	All
Movements Served	LTR	LTR	LTR	LTR	
Denied Del/Veh (s)					0.2
Total Del/Veh (s)	6.7	6.0	9.3	14.7	9.8

10: Curtis & Falcon Hwy Performance by lane Interval #1 7:30

Lane	EB	WB	NB	SB	All
Movements Served	LTR	LTR	LTR	LTR	
Denied Del/Veh (s)					0.1
Total Del/Veh (s)	4.9	6.2	4.1	7.2	5.8

10: Curtis & Falcon Hwy Performance by lane Interval #2 7:45

Lane	EB	WB	NB	SB	All
Movements Served	LTR	LTR	LTR	LTR	
Denied Del/Veh (s)					0.1
Total Del/Veh (s)	5.0	6.2	4.1	7.1	5.8

10: Curtis & Falcon Hwy Performance by lane Interval #3 8:00

Lane	EB	WB	NB	SB	All
Movements Served	LTR	LTR	LTR	LTR	
Denied Del/Veh (s)					0.1
Total Del/Veh (s)	5.6	7.6	3.9	8.0	6.7

10: Curtis & Falcon Hwy Performance by lane Interval #4 8:15

Lane	EB	WB	NB	SB	All
Movements Served	LTR	LTR	LTR	LTR	
Denied Del/Veh (s)					0.1
Total Del/Veh (s)	5.6	5.7	3.8	7.6	6.1

10: Curtis & Falcon Hwy Performance by lane Entire Run

























Lane	EB	WB	NB	SB	All
Movements Served	LTR	LTR	LTR	LTR	
Denied Del/Veh (s)					0.1
Total Del/Veh (s)	5.4	6.7	4.2	7.6	6.2

Total Zone Performance By Interval

Interval Start	7:30	7:45	8:00	8:15	All
Denied Del/Veh (s)	0.3	0.3	0.4	0.3	0.3
Total Del/Veh (s)	115.9	142.3	130.2	124.1	465.7













Lanes, Volumes, Timings
8: US 24 & Curtis/Stapleton

2020 Existing + Site
AM

												
Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	35	207	114	2	112	18	70	224	1	48	499	36
Future Volume (vph)	35	207	114	2	112	18	70	224	1	48	499	36
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	190		325	215		215	890		1000	790		790
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (ft)	240			200			190			190		
Lane Util. 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
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.629			0.590			0.192			0.520		
Satd. Flow (perm)	1172	1863	1583	1099	1863	1583	358	1863	1583	969	1863	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			143			143			143			143
Link Speed (mph)		45			45			55			55	
Link Distance (ft)		4560			5565			6479			6170	
Travel Time (s)		69.1			84.3			80.3			76.5	
Peak Hour Factor	0.87	0.87	0.87	0.94	0.94	0.94	0.78	0.78	0.78	1.00	1.00	1.00
Adj. Flow (vph)	40	238	131	2	119	19	90	287	1	48	499	36
Shared Lane Traffic (%)												
Lane Group Flow (vph)	40	238	131	2	119	19	90	287	1	48	499	36
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												
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	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	20
Trailing Detector (ft)	0	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	0
Detector 1 Size(ft)	20	6	20	20	6	20	20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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	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	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+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	Perm
Protected Phases	1	6		5	2		7	4		3	8	
Permitted Phases	6		6	2		2	4		4	8		8

Lanes, Volumes, Timings
8: US 24 & Curtis/Stapleton

2020 Existing + Site
AM

												
Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Detector Phase	1	6	6	5	2	2	7	4	4	3	8	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)	9.5	23.5	23.5	9.5	23.5	23.5	10.0	37.5	37.5	9.5	37.0	37.0
Total Split (%)	11.9%	29.4%	29.4%	11.9%	29.4%	29.4%	12.5%	46.9%	46.9%	11.9%	46.3%	46.3%
Maximum Green (s)	5.0	19.0	19.0	5.0	19.0	19.0	5.5	33.0	33.0	5.0	32.5	32.5
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	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	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	3.0	3.0
Recall Mode	None	Max	Max	None	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)		11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	0
Act Effect Green (s)	24.5	23.7	23.7	22.9	20.4	20.4	27.6	24.8	24.8	25.9	22.2	22.2
Actuated g/C Ratio	0.38	0.37	0.37	0.36	0.32	0.32	0.43	0.38	0.38	0.40	0.34	0.34
v/c Ratio	0.08	0.35	0.20	0.00	0.20	0.03	0.32	0.40	0.00	0.11	0.78	0.06
Control Delay	16.1	21.0	4.8	16.0	23.2	0.1	12.8	17.6	0.0	10.1	29.1	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	16.1	21.0	4.8	16.0	23.2	0.1	12.8	17.6	0.0	10.1	29.1	0.2
LOS	B	C	A	B	C	A	B	B	A	B	C	A
Approach Delay		15.3			20.0			16.4			25.7	
Approach LOS		B			B			B			C	

Intersection Summary

Area Type: Other

Cycle Length: 80

Actuated Cycle Length: 64.5

Natural Cycle: 65

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.78

Intersection Signal Delay: 20.0









Intersection LOS: C













Intersection Capacity Utilization 52.6%










ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 8: US 24 & Curtis/Stapleton

			
Ø1	Ø2	Ø3	Ø4
9.5 s	23.5 s	9.5 s	37.5 s
			
Ø5	Ø6	Ø7	Ø8
9.5 s	23.5 s	10 s	37 s











Intersection												
Int Delay, s/veh	33.1											
Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Vol, veh/h	14	125	25	4	218	57	99	478	21	29	297	22
Future Vol, veh/h	14	125	25	4	218	57	99	478	21	29	297	22
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	190	-	325	215	-	215	890	-	1000	790	-	790
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	93	93	93	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	14	125	25	4	218	57	106	514	23	34	349	26
Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	1292	1166	349	1231	1169	514	375	0	0	537	0	0
Stage 1	417	417	-	726	726	-	-	-	-	-	-	-
Stage 2	875	749	-	505	443	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	140	194	694	154	~ 193	560	1183	-	-	1031	-	-
Stage 1	613	591	-	416	430	-	-	-	-	-	-	-
Stage 2	344	419	-	549	576	-	-	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	171	694	55	~ 170	560	1183	-	-	1031	-	-
Mov Cap-2 Maneuver	-	171	-	55	~ 170	-	-	-	-	-	-	-
Stage 1	558	571	-	379	391	-	-	-	-	-	-	-
Stage 2	124	381	-	400	557	-	-	-	-	-	-	-
Approach	SE		NW		NE		SW					
HCM Control Delay, s			173.3		1.4		0.7					
HCM LOS	-		F									
Minor Lane/Major Mvmt	NEL	NET	NERNWLn1	NWLn2	NWLn3	SELn1	SELn2	SELn3	SWL	SWT	SWR	
Capacity (veh/h)	1183	-	-	55	170	560	-	171	694	1031	-	-
HCM Lane V/C Ratio	0.09	-	-	0.073	1.282	0.102	-	0.731	0.036	0.033	-	-
HCM Control Delay (s)	8.3	-	-	75.5	217.2	12.2	-	68.4	10.4	8.6	-	-
HCM Lane LOS	A	-	-	F	F	B	-	F	B	A	-	-
HCM 95th %tile Q(veh)	0.3	-	-	0.2	12.5	0.3	-	4.6	0.1	0.1	-	-
Notes												
~: Volume exceeds capacity		\$: Delay exceeds 300s		+: Computation Not Defined		*: All major volume in platoon						

Intersection												
Int Delay, s/veh	15.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	90	83	24	57	5	210	345	39	16	145	2
Future Vol, veh/h	1	90	83	24	57	5	210	345	39	16	145	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	250	-	235	240	-	-	250	-	-	260	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	88	88	88	81	81	81	79	79	79	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	102	94	30	70	6	266	437	49	16	145	2

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	76	0	0	196	0	0	311	240	102	527	331	73
Stage 1	-	-	-	-	-	-	104	104	-	133	133	-
Stage 2	-	-	-	-	-	-	207	136	-	394	198	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1523	-	-	1377	-	-	642	661	953	462	588	989
Stage 1	-	-	-	-	-	-	902	809	-	870	786	-
Stage 2	-	-	-	-	-	-	795	784	-	631	737	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1523	-	-	1377	-	-	507	646	953	196	574	989
Mov Cap-2 Maneuver	-	-	-	-	-	-	507	646	-	196	574	-
Stage 1	-	-	-	-	-	-	901	808	-	869	769	-
Stage 2	-	-	-	-	-	-	630	767	-	275	736	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			2.1			22.1			14.5		
HCM LOS							C			B		







Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	507	668	1523	-	-	1377	-	-	196	577
HCM Lane V/C Ratio	0.524	0.728	0.001	-	-	0.022	-	-	0.082	0.255
HCM Control Delay (s)	19.7	23.4	7.4	-	-	7.7	-	-	25	13.4
HCM Lane LOS	C	C	A	-	-	A	-	-	D	B
HCM 95th %tile Q(veh)	3	6.3	0	-	-	0.1	-	-	0.3	1






Intersection												
Int Delay, s/veh	23.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	51	207	34	1	68	50	250	317	26	84	105	72
Future Vol, veh/h	51	207	34	1	68	50	250	317	26	84	105	72
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	290	-	295	-	-	290	340	-	-	290	-	235
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	92	92	92	81	81	81
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	51	207	34	1	68	50	272	345	28	104	130	89

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	118	0	0	241	0	0	514	429	207	583	413	68
Stage 1	-	-	-	-	-	-	309	309	-	70	70	-
Stage 2	-	-	-	-	-	-	205	120	-	513	343	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1470	-	-	1326	-	-	471	518	833	424	529	995
Stage 1	-	-	-	-	-	-	701	660	-	940	837	-
Stage 2	-	-	-	-	-	-	797	796	-	544	637	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1470	-	-	1326	-	-	336	499	833	177	510	995
Mov Cap-2 Maneuver	-	-	-	-	-	-	336	499	-	177	510	-
Stage 1	-	-	-	-	-	-	676	637	-	907	836	-
Stage 2	-	-	-	-	-	-	613	795	-	233	615	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.3	0.1	36.8	24.6
HCM LOS			E	C










Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2	SBLn3
Capacity (veh/h)	336	515	1470	-	-	1326	-	-	177	510	995
HCM Lane V/C Ratio	0.809	0.724	0.035	-	-	0.001	-	-	0.586	0.254	0.089
HCM Control Delay (s)	48.5	28.2	7.5	-	-	7.7	0	-	50.7	14.4	9
HCM Lane LOS	E	D	A	-	-	A	A	-	F	B	A
HCM 95th %tile Q(veh)	6.8	5.9	0.1	-	-	0	-	-	3.2	1	0.3

Intersection						
Int Delay, s/veh	3.8					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	127	66	48	439	108	103
Future Vol, veh/h	127	66	48	439	108	103
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	245	-	-	195
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	81	81
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	138	72	52	477	133	127
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	714	133	260	0	-	0
Stage 1	133	-	-	-	-	-
Stage 2	581	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	398	916	1304	-	-	-
Stage 1	893	-	-	-	-	-
Stage 2	559	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	382	916	1304	-	-	-
Mov Cap-2 Maneuver	382	-	-	-	-	-
Stage 1	857	-	-	-	-	-
Stage 2	559	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	16.1	0.8		0		
HCM LOS	C					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1304	-	382	916	-	-
HCM Lane V/C Ratio	0.04	-	0.361	0.078	-	-
HCM Control Delay (s)	7.9	-	19.7	9.3	-	-
HCM Lane LOS	A	-	C	A	-	-
HCM 95th %tile Q(veh)	0.1	-	1.6	0.3	-	-

Intersection						
Int Delay, s/veh	5.1					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	136	128	74	351	129	66
Future Vol, veh/h	136	128	74	351	129	66
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	81	81
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	148	139	80	382	159	81
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	701	159	240	0	-	0
Stage 1	159	-	-	-	-	-
Stage 2	542	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	405	886	1327	-	-	-
Stage 1	870	-	-	-	-	-
Stage 2	583	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	374	886	1327	-	-	-
Mov Cap-2 Maneuver	374	-	-	-	-	-
Stage 1	803	-	-	-	-	-
Stage 2	583	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	15.5	1.4		0		
HCM LOS	C					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1327	-	374	886	-	-
HCM Lane V/C Ratio	0.061	-	0.395	0.157	-	-
HCM Control Delay (s)	7.9	-	20.8	9.8	-	-
HCM Lane LOS	A	-	C	A	-	-
HCM 95th %tile Q(veh)	0.2	-	1.8	0.6	-	-

Intersection						
Int Delay, s/veh	2.9					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑	↗		↗
Traffic Vol, veh/h	85	274	351	50	0	149
Future Vol, veh/h	85	274	351	50	0	149
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	260	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	100	100	100	100	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	85	274	351	50	0	162
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	401	0	-	0	-	351
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	4.12	-	-	-	-	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	2.218	-	-	-	-	3.318
Pot Cap-1 Maneuver	1158	-	-	-	0	692
Stage 1	-	-	-	-	0	-
Stage 2	-	-	-	-	0	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1158	-	-	-	-	692
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	EB	WB		SB		
HCM Control Delay, s	2	0		11.8		
HCM LOS	B					
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1158	-	-	-	-	692
HCM Lane V/C Ratio	0.073	-	-	-	-	0.234
HCM Control Delay (s)	8.4	-	-	-	-	11.8
HCM Lane LOS	A	-	-	-	-	B
HCM 95th %tile Q(veh)	0.2	-	-	-	-	0.9











Intersection	
Intersection Delay, s/veh	20.9
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	90	83	24	57	5	210	345	39	16	145	2
Future Vol, veh/h	1	90	83	24	57	5	210	345	39	16	145	2
Peak Hour Factor	0.88	0.88	0.88	0.81	0.81	0.81	0.79	0.79	0.79	1.00	1.00	1.00
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	102	94	30	70	6	266	437	49	16	145	2
Number of Lanes	1	1	1	1	1	0	1	1	0	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	3	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	3	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	2	3
HCM Control Delay	11.9	12.1	26.1	13.3
HCM LOS	B	B	D	B

Lane	NBLn1	NBLn2	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	100%	0%	100%	0%	0%	100%	0%	100%	0%
Vol Thru, %	0%	90%	0%	100%	0%	0%	92%	0%	99%
Vol Right, %	0%	10%	0%	0%	100%	0%	8%	0%	1%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	210	384	1	90	83	24	62	16	147
LT Vol	210	0	1	0	0	24	0	16	0
Through Vol	0	345	0	90	0	0	57	0	145
RT Vol	0	39	0	0	83	0	5	0	2
Lane Flow Rate	266	486	1	102	94	30	77	16	147
Geometry Grp	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.494	0.826	0.003	0.219	0.183	0.07	0.168	0.036	0.305
Departure Headway (Hd)	6.691	6.115	8.203	7.692	6.977	8.476	7.904	7.997	7.479
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	534	588	438	468	517	424	455	449	482
Service Time	4.488	3.912	5.916	5.405	4.69	6.194	5.622	5.714	5.196
HCM Lane V/C Ratio	0.498	0.827	0.002	0.218	0.182	0.071	0.169	0.036	0.305
HCM Control Delay	15.9	31.7	10.9	12.6	11.2	11.8	12.2	11	13.5
HCM Lane LOS	C	D	B	B	B	B	B	B	B
HCM 95th-tile Q	2.7	8.5	0	0.8	0.7	0.2	0.6	0.1	1.3

Intersection	
Intersection Delay, s/veh	19.1
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	51	207	34	1	68	50	250	317	26	84	105	72
Future Vol, veh/h	51	207	34	1	68	50	250	317	26	84	105	72
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.92	0.92	0.92	0.81	0.81	0.81
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	51	207	34	1	68	50	272	345	28	104	130	89
Number of Lanes	1	1	1	0	1	1	1	1	0	1	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	3	3	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	3	2	3	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	3	2	3
HCM Control Delay	16.1	12.6	24.6	13.3
HCM LOS	C	B	C	B

Lane	NBLn1	NBLn2	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	SBLn1	SBLn2	SBLn3
Vol Left, %	100%	0%	100%	0%	0%	1%	0%	100%	0%	0%
Vol Thru, %	0%	92%	0%	100%	0%	99%	0%	0%	100%	0%
Vol Right, %	0%	8%	0%	0%	100%	0%	100%	0%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	250	343	51	207	34	69	50	84	105	72
LT Vol	250	0	51	0	0	1	0	84	0	0
Through Vol	0	317	0	207	0	68	0	0	105	0
RT Vol	0	26	0	0	34	0	50	0	0	72
Lane Flow Rate	272	373	51	207	34	69	50	104	130	89
Geometry Grp	8	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.58	0.738	0.122	0.467	0.07	0.167	0.111	0.244	0.287	0.179
Departure Headway (Hd)	7.686	7.126	8.639	8.129	7.416	8.693	7.969	8.467	7.957	7.242
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	470	507	415	443	482	412	449	423	451	494
Service Time	5.44	4.88	6.403	5.893	5.18	6.467	5.742	6.231	5.72	5.006
HCM Lane V/C Ratio	0.579	0.736	0.123	0.467	0.071	0.167	0.111	0.246	0.288	0.18
HCM Control Delay	20.6	27.5	12.6	17.9	10.7	13.2	11.7	14	13.9	11.6
HCM Lane LOS	C	D	B	C	B	B	B	B	B	B
HCM 95th-tile Q	3.6	6.1	0.4	2.4	0.2	0.6	0.4	0.9	1.2	0.6

9: Curtis & Judge Orr Performance by lane Interval #1 7:30

Lane	EB	WB	NB	SB	All
Movements Served	LTR	LTR	LTR	LTR	
Denied Del/Veh (s)					0.0
Total Del/Veh (s)	6.1	4.7	13.6	8.8	10.9

9: Curtis & Judge Orr Performance by lane Interval #2 7:45

Lane	EB	WB	NB	SB	All
Movements Served	LTR	LTR	LTR	LTR	
Denied Del/Veh (s)					0.0
Total Del/Veh (s)	6.5	4.6	13.6	8.3	10.8

9: Curtis & Judge Orr Performance by lane Interval #3 8:00

Lane	EB	WB	NB	SB	All
Movements Served	LTR	LTR	LTR	LTR	
Denied Del/Veh (s)					0.1
Total Del/Veh (s)	6.9	5.6	20.4	9.3	15.6

9: Curtis & Judge Orr Performance by lane Interval #4 8:15

Lane	EB	WB	NB	SB	All
Movements Served	LTR	LTR	LTR	LTR	
Denied Del/Veh (s)					0.0
Total Del/Veh (s)	6.3	5.3	16.1	9.1	12.6

9: Curtis & Judge Orr Performance by lane Entire Run

Lane	EB	WB	NB	SB	All
Movements Served	LTR	LTR	LTR	LTR	
Denied Del/Veh (s)					0.1
Total Del/Veh (s)	7.1	5.2	18.3	9.5	13.8

10: Curtis & Falcon Hwy Performance by lane Interval #1 7:30

Lane	EB	WB	NB	SB	All
Movements Served	LTR	LTR	LTR	LTR	
Denied Del/Veh (s)					0.2
Total Del/Veh (s)	7.5	5.2	10.4	4.6	8.0

10: Curtis & Falcon Hwy Performance by lane Interval #2 7:45

Lane	EB	WB	NB	SB	All
Movements Served	LTR	LTR	LTR	LTR	
Denied Del/Veh (s)					0.2
Total Del/Veh (s)	6.7	5.6	13.4	4.3	9.4

10: Curtis & Falcon Hwy Performance by lane Interval #3 8:00

Lane	EB	WB	NB	SB	All
Movements Served	LTR	LTR	LTR	LTR	
Denied Del/Veh (s)					0.3
Total Del/Veh (s)	7.7	5.3	24.7	5.4	15.4

10: Curtis & Falcon Hwy Performance by lane Interval #4 8:15

Lane	EB	WB	NB	SB	All
Movements Served	LTR	LTR	LTR	LTR	
Denied Del/Veh (s)					0.2
Total Del/Veh (s)	7.4	4.8	14.4	5.2	10.0

10: Curtis & Falcon Hwy Performance by lane Entire Run

























Lane	EB	WB	NB	SB	All
Movements Served	LTR	LTR	LTR	LTR	
Denied Del/Veh (s)					0.2
Total Del/Veh (s)	7.5	5.4	17.0	5.0	11.2

Total Zone Performance By Interval

Interval Start	7:30	7:45	8:00	8:15	All
Denied Del/Veh (s)	0.3	0.4	0.5	0.4	0.4
Total Del/Veh (s)	112.7	114.7	183.7	149.1	468.9













Lanes, Volumes, Timings
8: US 24 & Curtis/Stapleton

2020 Existing + Site
PM

												
Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	14	125	25	4	218	57	99	478	21	29	297	22
Future Volume (vph)	14	125	25	4	218	57	99	478	21	29	297	22
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	190		325	215		215	890		1000	790		790
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (ft)	240			200			190			190		
Lane Util. 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
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.575			0.677			0.352			0.267		
Satd. Flow (perm)	1071	1863	1583	1261	1863	1583	656	1863	1583	497	1863	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			143			143			143			143
Link Speed (mph)		45			45			55			55	
Link Distance (ft)		4560			5565			6479			6170	
Travel Time (s)		69.1			84.3			80.3			76.5	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.93	0.93	0.93	0.85	0.85	0.85
Adj. Flow (vph)	14	125	25	4	218	57	106	514	23	34	349	26
Shared Lane Traffic (%)												
Lane Group Flow (vph)	14	125	25	4	218	57	106	514	23	34	349	26
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												
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	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	20
Trailing Detector (ft)	0	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	0
Detector 1 Size(ft)	20	6	20	20	6	20	20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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	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	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+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	Perm
Protected Phases	1	6		5	2		7	4		3	8	
Permitted Phases	6		6	2		2	4		4	8		8

Lanes, Volumes, Timings
8: US 24 & Curtis/Stapleton

2020 Existing + Site
PM

												
Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Detector Phase	1	6	6	5	2	2	7	4	4	3	8	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)	9.5	23.5	23.5	9.5	23.5	23.5	10.0	37.5	37.5	9.5	37.0	37.0
Total Split (%)	11.9%	29.4%	29.4%	11.9%	29.4%	29.4%	12.5%	46.9%	46.9%	11.9%	46.3%	46.3%
Maximum Green (s)	5.0	19.0	19.0	5.0	19.0	19.0	5.5	33.0	33.0	5.0	32.5	32.5
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	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	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	3.0	3.0
Recall Mode	None	Max	Max	None	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)		11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	0
Act Effect Green (s)	20.8	20.0	20.0	20.8	20.0	20.0	25.0	23.2	23.2	22.5	18.6	18.6
Actuated g/C Ratio	0.36	0.35	0.35	0.36	0.35	0.35	0.44	0.41	0.41	0.39	0.33	0.33
v/c Ratio	0.03	0.19	0.04	0.01	0.33	0.09	0.27	0.68	0.03	0.11	0.58	0.04
Control Delay	15.7	19.1	0.1	15.8	20.1	0.3	10.1	20.2	0.1	8.9	20.6	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	15.7	19.1	0.1	15.8	20.1	0.3	10.1	20.2	0.1	8.9	20.6	0.1
LOS	B	B	A	B	C	A	B	C	A	A	C	A
Approach Delay		15.9			16.0			17.8			18.3	
Approach LOS		B			B			B			B	

Intersection Summary

Area Type: Other

Cycle Length: 80

Actuated Cycle Length: 57.2

Natural Cycle: 65

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.68

Intersection Signal Delay: 17.4









Intersection LOS: B

Intersection Capacity Utilization 52.2%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 8: US 24 & Curtis/Stapleton

























			
Ø1	Ø2	Ø3	Ø4
9.5 s	23.5 s	9.5 s	37.5 s
			
Ø5	Ø6	Ø7	Ø8
9.5 s	23.5 s	10 s	37 s

Intersection									
Intersection Delay, s/veh	6.8								
Intersection LOS	A								
Approach	EB		WB		NB		SB		
Entry Lanes	2		2		2		2		
Conflicting Circle Lanes	1		1		1		1		
Adj Approach Flow, veh/h	310		428		411		388		
Demand Flow Rate, veh/h	316		437		419		396		
Vehicles Circulating, veh/h	403		416		145		441		
Vehicles Exiting, veh/h	433		148		574		412		
Ped Vol Crossing Leg, #/h	0		0		0		0		
Ped Cap Adj	1.000		1.000		1.000		1.000		
Approach Delay, s/veh	6.7		8.2		4.6		7.5		
Approach LOS	A		A		A		A		
Lane	Left	Right	Left	Right	Left	Right	Left	Right	
Designated Moves	L	TR	L	TR	L	TR	L	TR	
Assumed Moves	L	TR	L	TR	L	TR	L	TR	
RT Channelized									
Lane Util	0.057	0.943	0.076	0.924	0.325	0.675	0.114	0.886	
Follow-Up Headway, s	2.535	2.535	2.535	2.535	2.535	2.535	2.535	2.535	
Critical Headway, s	4.544	4.544	4.544	4.544	4.544	4.544	4.544	4.544	
Entry Flow, veh/h	18	298	33	404	136	283	45	351	
Cap Entry Lane, veh/h	984	984	973	973	1245	1245	951	951	
Entry HV Adj Factor	1.000	0.981	0.970	0.979	0.978	0.982	0.978	0.979	
Flow Entry, veh/h	18	292	32	396	133	278	44	344	
Cap Entry, veh/h	984	966	943	952	1217	1222	930	931	
V/C Ratio	0.018	0.303	0.034	0.415	0.109	0.227	0.047	0.369	
Control Delay, s/veh	3.8	6.9	4.1	8.5	3.9	4.9	4.3	8.0	
LOS	A	A	A	A	A	A	A	A	
95th %tile Queue, veh	0	1	0	2	0	1	0	2	

Intersection									
Intersection Delay, s/veh	9.0								
Intersection LOS	A								
Approach	EB		WB		NB		SB		
Entry Lanes	2		2		2		2		
Conflicting Circle Lanes	1		1		1		1		
Adj Approach Flow, veh/h	339		276		358		699		
Demand Flow Rate, veh/h	346		282		365		714		
Vehicles Circulating, veh/h	648		399		128		333		
Vehicles Exiting, veh/h	399		94		866		348		
Ped Vol Crossing Leg, #/h	0		0		0		0		
Ped Cap Adj	1.000		1.000		1.000		1.000		
Approach Delay, s/veh	8.9		6.0		4.2		12.7		
Approach LOS	A		A		A		B		
Lane	Left	Right	Left	Right	Left	Right	Left	Right	
Designated Moves	L	TR	L	TR	L	TR	L	TR	
Assumed Moves	L	TR	L	TR	L	TR	L	TR	
RT Channelized									
Lane Util	0.127	0.873	0.106	0.894	0.419	0.581	0.041	0.959	
Follow-Up Headway, s	2.535	2.535	2.535	2.535	2.535	2.535	2.535	2.535	
Critical Headway, s	4.544	4.544	4.544	4.544	4.544	4.544	4.544	4.544	
Entry Flow, veh/h	44	302	30	252	153	212	29	685	
Cap Entry Lane, veh/h	787	787	988	988	1264	1264	1049	1049	
Entry HV Adj Factor	0.977	0.980	0.967	0.980	0.980	0.981	0.966	0.980	
Flow Entry, veh/h	43	296	29	247	150	208	28	671	
Cap Entry, veh/h	769	772	955	968	1239	1240	1013	1028	
V/C Ratio	0.056	0.384	0.030	0.255	0.121	0.168	0.028	0.653	
Control Delay, s/veh	5.2	9.5	4.0	6.3	3.9	4.3	3.8	13.1	
LOS	A	A	A	A	A	A	A	B	
95th %tile Queue, veh	0	2	0	1	0	1	0	5	













Lanes, Volumes, Timings
8: US 24 & Curtis/Stapleton

2040 Background
AM

												
Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	175	290	600	75	347	45	300	400	50	123	800	350
Future Volume (vph)	175	290	600	75	347	45	300	400	50	123	800	350
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	190		325	215		215	890		1000	790		790
Storage Lanes	2		2	2		1	2		1	2		1
Taper Length (ft)	240			200			190			190		
Lane Util. Factor	0.97	0.95	0.88	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3433	3539	2787	3433	3539	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.457			0.551			0.189			0.421		
Satd. Flow (perm)	1651	3539	2787	1991	3539	1583	683	3539	1583	1521	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			468			143			143			286
Link Speed (mph)		45			45			55			55	
Link Distance (ft)		4560			3434			6479			6170	
Travel Time (s)		69.1			52.0			80.3			76.5	
Peak Hour Factor	0.87	0.87	0.87	0.94	0.94	0.94	0.78	0.78	0.78	1.00	1.00	1.00
Adj. Flow (vph)	201	333	690	80	369	48	385	513	64	123	800	350
Shared Lane Traffic (%)												
Lane Group Flow (vph)	201	333	690	80	369	48	385	513	64	123	800	350
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	20
Trailing Detector (ft)	0	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	0
Detector 1 Size(ft)	20	6	20	20	6	20	20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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	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	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+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	Perm
Protected Phases	1	6		5	2		7	4		3	8	
Permitted Phases	6		6	2		2	4		4	8		8

Lanes, Volumes, Timings
8: US 24 & Curtis/Stapleton

2040 Background
AM

												
Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Detector Phase	1	6	6	5	2	2	7	4	4	3	8	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)	9.5	23.5	23.5	9.5	23.5	23.5	10.0	37.5	37.5	9.5	37.0	37.0
Total Split (%)	11.9%	29.4%	29.4%	11.9%	29.4%	29.4%	12.5%	46.9%	46.9%	11.9%	46.3%	46.3%
Maximum Green (s)	5.0	19.0	19.0	5.0	19.0	19.0	5.5	33.0	33.0	5.0	32.5	32.5
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	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	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	3.0	3.0
Recall Mode	None	Max	Max	None	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)		11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	0
Act Effect Green (s)	25.2	21.3	21.3	24.1	19.1	19.1	30.3	26.0	26.0	28.4	23.4	23.4
Actuated g/C Ratio	0.35	0.30	0.30	0.34	0.27	0.27	0.43	0.37	0.37	0.40	0.33	0.33
v/c Ratio	0.28	0.32	0.59	0.10	0.39	0.09	0.76	0.40	0.10	0.17	0.69	0.49
Control Delay	16.3	22.7	10.3	15.4	24.0	0.3	23.3	18.1	0.3	10.6	23.8	6.5
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	16.3	22.7	10.3	15.4	24.0	0.3	23.3	18.1	0.3	10.6	23.8	6.5
LOS	B	C	B	B	C	A	C	B	A	B	C	A
Approach Delay		14.7			20.3			19.0			17.8	
Approach LOS		B			C			B			B	

Intersection Summary

Area Type: Other

Cycle Length: 80

Actuated Cycle Length: 71.2

Natural Cycle: 65

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.76

Intersection Signal Delay: 17.4









Intersection LOS: B

Intersection Capacity Utilization 60.3%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 8: US 24 & Curtis/Stapleton

			
Ø1	Ø2	Ø3	Ø4
9.5 s	23.5 s	9.5 s	37.5 s
			
Ø5	Ø6	Ø7	Ø8
9.5 s	23.5 s	10 s	37 s

HCM 6th Roundabout
9: Curtis & Judge Orr

2040 Background + Site
PM (Roundabout Accesses)

Intersection									
Intersection Delay, s/veh	13.6								
Intersection LOS	B								
Approach	EB		WB		NB		SB		
Entry Lanes	2		2		2		2		
Conflicting Circle Lanes	1		1		1		1		
Adj Approach Flow, veh/h	455		299		1135		518		
Demand Flow Rate, veh/h	465		305		1157		529		
Vehicles Circulating, veh/h	547		1126		384		558		
Vehicles Exiting, veh/h	539		415		628		873		
Ped Vol Crossing Leg, #/h	0		0		0		0		
Ped Cap Adj	1.000		1.000		1.000		1.000		
Approach Delay, s/veh	10.7		15.8		16.0		9.8		
Approach LOS	B		C		C		A		
Lane	Left	Right	Left	Right	Left	Right	Left	Right	
Designated Moves	L	TR	L	TR	L	TR	L	TR	
Assumed Moves	L	TR	L	TR	L	TR	L	TR	
RT Channelized									
Lane Util	0.062	0.938	0.144	0.856	0.315	0.685	0.202	0.798	
Follow-Up Headway, s	2.535	2.535	2.535	2.535	2.535	2.535	2.535	2.535	
Critical Headway, s	4.544	4.544	4.544	4.544	4.544	4.544	4.544	4.544	
Entry Flow, veh/h	29	436	44	261	365	792	107	422	
Cap Entry Lane, veh/h	863	863	510	510	1001	1001	855	855	
Entry HV Adj Factor	0.966	0.980	0.977	0.981	0.981	0.981	0.981	0.979	
Flow Entry, veh/h	28	427	43	256	358	777	105	413	
Cap Entry, veh/h	833	846	498	500	982	982	839	837	
V/C Ratio	0.034	0.505	0.086	0.512	0.365	0.791	0.125	0.494	
Control Delay, s/veh	4.6	11.0	8.3	17.1	7.6	19.9	5.5	10.9	
LOS	A	B	A	C	A	C	A	B	
95th %tile Queue, veh	0	3	0	3	2	9	0	3	

HCM 6th Roundabout
10: Curtis & Falcon Hwy

2040 Background + Site
PM (Roundabout Accesses)

























Intersection									
Intersection Delay, s/veh	15.3								
Intersection LOS	C								
Approach	EB		WB		NB		SB		
Entry Lanes	2		2		2		2		
Conflicting Circle Lanes	1		1		1		1		
Adj Approach Flow, veh/h	413		396		995		662		
Demand Flow Rate, veh/h	421		404		1015		675		
Vehicles Circulating, veh/h	573		1044		514		672		
Vehicles Exiting, veh/h	774		485		480		776		
Ped Vol Crossing Leg, #/h	0		0		0		0		
Ped Cap Adj	1.000		1.000		1.000		1.000		
Approach Delay, s/veh	9.0		24.2		15.1		14.1		
Approach LOS	A		C		C		B		
Lane	Left	Right	Left	Right	Left	Right	Left	Right	
Designated Moves	L	TR	L	TR	L	TR	L	TR	
Assumed Moves	L	TR	L	TR	L	TR	L	TR	
RT Channelized									
Lane Util	0.150	0.850	0.037	0.963	0.354	0.646	0.256	0.744	
Follow-Up Headway, s	2.535	2.535	2.535	2.535	2.535	2.535	2.535	2.535	
Critical Headway, s	4.544	4.544	4.544	4.544	4.544	4.544	4.544	4.544	
Entry Flow, veh/h	63	358	15	389	359	656	173	502	
Cap Entry Lane, veh/h	843	843	549	549	890	890	770	770	
Entry HV Adj Factor	0.984	0.979	1.000	0.980	0.981	0.980	0.983	0.981	
Flow Entry, veh/h	62	351	15	381	352	643	170	492	
Cap Entry, veh/h	830	825	549	538	872	872	757	756	
V/C Ratio	0.075	0.425	0.027	0.708	0.404	0.737	0.225	0.652	
Control Delay, s/veh	5.1	9.7	6.9	24.9	8.9	18.5	7.3	16.5	
LOS	A	A	A	C	A	C	A	C	
95th %tile Queue, veh	0	2	0	6	2	7	1	5	

Intersection			
Intersection Delay, s/veh	10.8		
Intersection LOS	B		
Approach	EB	NB	SB
Entry Lanes	1	1	1
Conflicting Circle Lanes	1	1	1
Adj Approach Flow, veh/h	209	839	601
Demand Flow Rate, veh/h	213	856	613
Vehicles Circulating, veh/h	483	140	52
Vehicles Exiting, veh/h	182	556	944
Ped Vol Crossing Leg, #/h	0	0	0
Ped Cap Adj	1.000	1.000	1.000
Approach Delay, s/veh	7.1	14.0	7.6
Approach LOS	A	B	A
Lane	Left	Left	Left
Designated Moves	LR	LT	TR
Assumed Moves	LR	LT	TR
RT Channelized			
Lane Util	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976
Entry Flow, veh/h	213	856	613
Cap Entry Lane, veh/h	843	1196	1309
Entry HV Adj Factor	0.981	0.980	0.980
Flow Entry, veh/h	209	839	601
Cap Entry, veh/h	827	1173	1282
V/C Ratio	0.253	0.716	0.468
Control Delay, s/veh	7.1	14.0	7.6
LOS	A	B	A
95th %tile Queue, veh	1	7	3

Intersection			
Intersection Delay, s/veh	10.1		
Intersection LOS	B		
Approach	EB	NB	SB
Entry Lanes	1	1	1
Conflicting Circle Lanes	1	1	1
Adj Approach Flow, veh/h	284	770	583
Demand Flow Rate, veh/h	290	786	595
Vehicles Circulating, veh/h	510	151	81
Vehicles Exiting, veh/h	166	649	856
Ped Vol Crossing Leg, #/h	0	0	0
Ped Cap Adj	1.000	1.000	1.000
Approach Delay, s/veh	8.7	12.3	7.8
Approach LOS	A	B	A
Lane	Left	Left	Left
Designated Moves	LR	LT	TR
Assumed Moves	LR	LT	TR
RT Channelized			
Lane Util	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976
Entry Flow, veh/h	290	786	595
Cap Entry Lane, veh/h	820	1183	1270
Entry HV Adj Factor	0.979	0.980	0.980
Flow Entry, veh/h	284	770	583
Cap Entry, veh/h	803	1159	1245
V/C Ratio	0.354	0.664	0.468
Control Delay, s/veh	8.7	12.3	7.8
LOS	A	B	A
95th %tile Queue, veh	2	5	3













Lanes, Volumes, Timings
8: US 24 & Curtis/Stapleton

2040 Background
PM

												
Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	350	267	400	125	382	172	650	850	150	144	500	350
Future Volume (vph)	350	267	400	125	382	172	650	850	150	144	500	350
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	190		325	215		215	890		1000	790		790
Storage Lanes	2		2	2		1	2		1	2		1
Taper Length (ft)	240			200			190			190		
Lane Util. Factor	0.97	0.95	0.88	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3433	3539	2787	3433	3539	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.432			0.587			0.312			0.163		
Satd. Flow (perm)	1561	3539	2787	2121	3539	1583	1127	3539	1583	589	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			400			172			161			246
Link Speed (mph)		45			45			55			55	
Link Distance (ft)		4560			3434			6479			6170	
Travel Time (s)		69.1			52.0			80.3			76.5	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.93	0.93	0.93	0.85	0.85	0.85
Adj. Flow (vph)	350	267	400	125	382	172	699	914	161	169	588	412
Shared Lane Traffic (%)												
Lane Group Flow (vph)	350	267	400	125	382	172	699	914	161	169	588	412
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	20
Trailing Detector (ft)	0	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	0
Detector 1 Size(ft)	20	6	20	20	6	20	20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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	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	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+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	Perm
Protected Phases	1	6		5	2		7	4		3	8	
Permitted Phases	6		6	2		2	4		4	8		8

Lanes, Volumes, Timings
8: US 24 & Curtis/Stapleton









2040 Background
PM







												
Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Detector Phase	1	6	6	5	2	2	7	4	4	3	8	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)	9.5	21.0	21.0	9.5	21.0	21.0	12.5	37.5	37.5	12.0	37.0	37.0
Total Split (%)	11.9%	26.3%	26.3%	11.9%	26.3%	26.3%	15.6%	46.9%	46.9%	15.0%	46.3%	46.3%
Maximum Green (s)	5.0	16.5	16.5	5.0	16.5	16.5	8.0	33.0	33.0	7.5	32.5	32.5
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	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	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	3.0	3.0
Recall Mode	None	Max	Max	None	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)		11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	0
Act Effect Green (s)	24.2	20.3	20.3	23.2	18.1	18.1	33.6	25.6	25.6	31.6	24.6	24.6
Actuated g/C Ratio	0.33	0.27	0.27	0.31	0.24	0.24	0.45	0.35	0.35	0.43	0.33	0.33
v/c Ratio	0.55	0.27	0.38	0.17	0.44	0.33	0.91	0.75	0.25	0.32	0.50	0.60
Control Delay	22.4	24.5	4.2	17.4	26.7	6.6	32.3	25.3	3.9	11.2	20.9	11.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	22.4	24.5	4.2	17.4	26.7	6.6	32.3	25.3	3.9	11.2	20.9	11.6
LOS	C	C	A	B	C	A	C	C	A	B	C	B
Approach Delay		15.8			19.9			26.1			16.2	
Approach LOS		B			B			C			B	






Intersection Summary

Area Type:	Other
Cycle Length: 80	
Actuated Cycle Length: 73.9	
Natural Cycle: 70	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.91	
Intersection Signal Delay: 20.5	Intersection LOS: C
Intersection Capacity Utilization 67.9%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 8: US 24 & Curtis/Stapleton

 Ø1	 Ø2	 Ø3	 Ø4
9.5 s	21 s	12 s	37.5 s
 Ø5	 Ø6	 Ø7	 Ø8
9.5 s	21 s	12.5 s	37 s

Intersection						
Int Delay, s/veh	1					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	26	13	41	350	593	96
Future Vol, veh/h	26	13	41	350	593	96
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	245	-	-	195
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	100	100	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	28	14	41	350	659	107
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	1091	659	766	0	-	0
Stage 1	659	-	-	-	-	-
Stage 2	432	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	238	464	847	-	-	-
Stage 1	515	-	-	-	-	-
Stage 2	655	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	227	464	847	-	-	-
Mov Cap-2 Maneuver	227	-	-	-	-	-
Stage 1	490	-	-	-	-	-
Stage 2	655	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	19.7	1		0		
HCM LOS	C					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	847	-	227	464	-	-
HCM Lane V/C Ratio	0.048	-	0.124	0.03	-	-
HCM Control Delay (s)	9.5	-	23.1	13	-	-
HCM Lane LOS	A	-	C	B	-	-
HCM 95th %tile Q(veh)	0.2	-	0.4	0.1	-	-

Intersection						
Int Delay, s/veh	1.3					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	28	26	43	363	567	46
Future Vol, veh/h	28	26	43	363	567	46
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	100	100	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	30	28	43	363	630	51

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	1079	630	681	0	-	0
Stage 1	630	-	-	-	-	-
Stage 2	449	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	242	482	912	-	-	-
Stage 1	531	-	-	-	-	-
Stage 2	643	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	228	482	912	-	-	-
Mov Cap-2 Maneuver	228	-	-	-	-	-
Stage 1	500	-	-	-	-	-
Stage 2	643	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	18.2	1	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	912	-	228	482	-	-
HCM Lane V/C Ratio	0.047	-	0.133	0.059	-	-
HCM Control Delay (s)	9.1	-	23.2	12.9	-	-
HCM Lane LOS	A	-	C	B	-	-
HCM 95th %tile Q(veh)	0.1	-	0.5	0.2	-	-

Intersection						
Int Delay, s/veh	1.5					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑	↗		↗
Traffic Vol, veh/h	125	321	492	38	0	31
Future Vol, veh/h	125	321	492	38	0	31
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	260	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	93	93	85	85	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	134	345	579	45	0	34
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	624	0	-	0	-	579
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	4.12	-	-	-	-	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	2.218	-	-	-	-	3.318
Pot Cap-1 Maneuver	957	-	-	-	0	515
Stage 1	-	-	-	-	0	-
Stage 2	-	-	-	-	0	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	957	-	-	-	-	515
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	EB	WB		SB		
HCM Control Delay, s	2.6	0		12.5		
HCM LOS	B					
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	957	-	-	-	-	515
HCM Lane V/C Ratio	0.14	-	-	-	-	0.065
HCM Control Delay (s)	9.4	-	-	-	-	12.5
HCM Lane LOS	A	-	-	-	-	B
HCM 95th %tile Q(veh)	0.5	-	-	-	-	0.2

13: Curtis & Sugarland Performance by movement Interval #1 7:30

Movement	EBL	EBR	NBL	SBT	SBR	All
Denied Del/Veh (s)	0.1	0.1	0.0	0.0	0.0	0.0
Total Del/Veh (s)	11.0	3.0	3.6	0.5	0.5	1.1

13: Curtis & Sugarland Performance by movement Interval #2 7:45

Movement	EBL	EBR	NBL	SBT	SBR	All
Denied Del/Veh (s)	0.1	0.1	0.0	0.0	0.0	0.0
Total Del/Veh (s)	11.0	2.7	3.8	0.4	0.4	1.1

13: Curtis & Sugarland Performance by movement Interval #3 8:00

Movement	EBL	EBR	NBL	NBT	SBT	SBR	All
Denied Del/Veh (s)	0.1	0.1	0.0	0.0	0.0	0.1	0.0
Total Del/Veh (s)	9.9	2.6	4.5	0.0	0.4	0.4	1.0

13: Curtis & Sugarland Performance by movement Interval #4 8:15

Movement	EBL	EBR	NBL	NBT	SBT	SBR	All
Denied Del/Veh (s)	0.2	0.1	0.0		0.0	0.0	0.0
Total Del/Veh (s)	10.9	2.7	4.0		0.4	0.4	1.0

13: Curtis & Sugarland Performance by movement Entire Run

Movement	EBL	EBR	NBL	NBT	SBT	SBR	All
Denied Del/Veh (s)	0.1	0.1	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	11.1	2.6	4.0	0.6	0.4	0.4	1.1

16: Curtis & Suncadia Performance by movement Interval #1 7:30

Movement	EBL	EBR	NBL	SBT	SBR	All
Denied Del/Veh (s)	0.1	0.1	0.0	0.0	0.0	0.0
Total Del/Veh (s)	9.1	2.4	4.6	0.5	0.1	1.1

16: Curtis & Suncadia Performance by movement Interval #2 7:45

Movement	EBL	EBR	NBL	SBT	SBR	All
Denied Del/Veh (s)	0.1	0.1	0.0	0.0	0.0	0.0
Total Del/Veh (s)	8.3	2.4	2.9	0.5	0.1	1.0

16: Curtis & Suncadia Performance by movement Interval #3 8:00

Movement	EBL	EBR	NBL	NBT	SBT	SBR	All
Denied Del/Veh (s)	0.1	0.1	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	9.2	2.5	2.3	0.0	0.5	0.1	1.1

16: Curtis & Suncadia Performance by movement Interval #4 8:15

Movement	EBL	EBR	NBL	SBT	SBR	All
Denied Del/Veh (s)	0.1	0.1	0.0	0.0	0.0	0.0
Total Del/Veh (s)	11.9	2.7	4.6	0.5	0.0	1.2

16: Curtis & Suncadia Performance by movement Entire Run

Movement	EBL	EBR	NBL	NBT	SBT	SBR	All
Denied Del/Veh (s)	0.1	0.1	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	9.9	2.5	3.5	0.0	0.5	0.1	1.1

Total Zone Performance By Interval

Interval Start	7:30	7:45	8:00	8:15	All
Denied Del/Veh (s)	0.1	0.1	0.2	0.1	0.2
Total Del/Veh (s)	59.3	92.9	55.8	55.4	104.3

HCM 6th Roundabout
9: Curtis & Judge Orr

2040 Background + Site
AM (Roundabout Accesses)

Intersection									
Intersection Delay, s/veh	8.1								
Intersection LOS	A								
Approach	EB		WB		NB		SB		
Entry Lanes	2		2		2		2		
Conflicting Circle Lanes	1		1		1		1		
Adj Approach Flow, veh/h	400		438		469		485		
Demand Flow Rate, veh/h	408		447		479		495		
Vehicles Circulating, veh/h	515		471		143		471		
Vehicles Exiting, veh/h	450		150		780		447		
Ped Vol Crossing Leg, #/h	0		0		0		0		
Ped Cap Adj	1.000		1.000		1.000		1.000		
Approach Delay, s/veh	9.3		8.7		4.9		9.6		
Approach LOS	A		A		A		A		
Lane	Left	Right	Left	Right	Left	Right	Left	Right	
Designated Moves	L	TR	L	TR	L	TR	L	TR	
Assumed Moves	L	TR	L	TR	L	TR	L	TR	
RT Channelized									
Lane Util	0.044	0.956	0.103	0.897	0.326	0.674	0.091	0.909	
Follow-Up Headway, s	2.535	2.535	2.535	2.535	2.535	2.535	2.535	2.535	
Critical Headway, s	4.544	4.544	4.544	4.544	4.544	4.544	4.544	4.544	
Entry Flow, veh/h	18	390	46	401	156	323	45	450	
Cap Entry Lane, veh/h	889	889	925	925	1247	1247	925	925	
Entry HV Adj Factor	1.000	0.981	0.978	0.979	0.981	0.979	0.978	0.979	
Flow Entry, veh/h	18	382	45	393	153	316	44	441	
Cap Entry, veh/h	889	871	905	906	1223	1220	904	906	
V/C Ratio	0.020	0.439	0.050	0.434	0.125	0.259	0.049	0.486	
Control Delay, s/veh	4.2	9.5	4.4	9.1	4.0	5.3	4.4	10.1	
LOS	A	A	A	A	A	A	A	B	
95th %tile Queue, veh	0	2	0	2	0	1	0	3	

HCM 6th Roundabout
10: Curtis & Falcon Hwy

2040 Background + Site
AM (Roundabout Accesses)

























Intersection									
Intersection Delay, s/veh	9.0								
Intersection LOS	A								
Approach	EB		WB		NB		SB		
Entry Lanes	2		2		2		2		
Conflicting Circle Lanes	1		1		1		1		
Adj Approach Flow, veh/h	351		306		395		700		
Demand Flow Rate, veh/h	358		312		402		714		
Vehicles Circulating, veh/h	674		456		161		350		
Vehicles Exiting, veh/h	390		107		871		418		
Ped Vol Crossing Leg, #/h	0		0		0		0		
Ped Cap Adj	1.000		1.000		1.000		1.000		
Approach Delay, s/veh	8.9		6.8		4.5		12.6		
Approach LOS	A		A		A		B		
Lane	Left	Right	Left	Right	Left	Right	Left	Right	
Designated Moves	L	TR	L	TR	L	TR	L	TR	
Assumed Moves	L	TR	L	TR	L	TR	L	TR	
RT Channelized									
Lane Util	0.179	0.821	0.096	0.904	0.408	0.592	0.060	0.940	
Follow-Up Headway, s	2.535	2.535	2.535	2.535	2.535	2.535	2.535	2.535	
Critical Headway, s	4.544	4.544	4.544	4.544	4.544	4.544	4.544	4.544	
Entry Flow, veh/h	64	294	30	282	164	238	43	671	
Cap Entry Lane, veh/h	769	769	938	938	1227	1227	1033	1033	
Entry HV Adj Factor	0.984	0.979	0.967	0.982	0.982	0.981	0.977	0.981	
Flow Entry, veh/h	63	288	29	277	161	234	42	658	
Cap Entry, veh/h	757	753	906	921	1204	1204	1009	1013	
V/C Ratio	0.083	0.382	0.032	0.301	0.134	0.194	0.042	0.650	
Control Delay, s/veh	5.6	9.6	4.3	7.1	4.1	4.7	3.9	13.1	
LOS	A	A	A	A	A	A	A	B	
95th %tile Queue, veh	0	2	0	1	0	1	0	5	

Intersection			
Intersection Delay, s/veh	8.1		
Intersection LOS	A		
Approach	EB	NB	SB
Entry Lanes	1	1	1
Conflicting Circle Lanes	1	1	1
Adj Approach Flow, veh/h	42	391	766
Demand Flow Rate, veh/h	43	399	781
Vehicles Circulating, veh/h	672	29	42
Vehicles Exiting, veh/h	151	686	386
Ped Vol Crossing Leg, #/h	0	0	0
Ped Cap Adj	1.000	1.000	1.000
Approach Delay, s/veh	6.0	5.4	9.7
Approach LOS	A	A	A
Lane	Left	Left	Left
Designated Moves	LR	LT	TR
Assumed Moves	LR	LT	TR
RT Channelized			
Lane Util	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976
Entry Flow, veh/h	43	399	781
Cap Entry Lane, veh/h	695	1340	1322
Entry HV Adj Factor	0.977	0.980	0.981
Flow Entry, veh/h	42	391	766
Cap Entry, veh/h	679	1313	1296
V/C Ratio	0.062	0.298	0.591
Control Delay, s/veh	6.0	5.4	9.7
LOS	A	A	A
95th %tile Queue, veh	0	1	4

Intersection			
Intersection Delay, s/veh	7.3		
Intersection LOS	A		
Approach	EB	NB	SB
Entry Lanes	1	1	1
Conflicting Circle Lanes	1	1	1
Adj Approach Flow, veh/h	58	406	681
Demand Flow Rate, veh/h	60	414	695
Vehicles Circulating, veh/h	643	31	44
Vehicles Exiting, veh/h	96	672	401
Ped Vol Crossing Leg, #/h	0	0	0
Ped Cap Adj	1.000	1.000	1.000
Approach Delay, s/veh	6.1	5.5	8.5
Approach LOS	A	A	A
Lane	Left	Left	Left
Designated Moves	LR	LT	TR
Assumed Moves	LR	LT	TR
RT Channelized			
Lane Util	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976
Entry Flow, veh/h	60	414	695
Cap Entry Lane, veh/h	716	1337	1319
Entry HV Adj Factor	0.967	0.980	0.980
Flow Entry, veh/h	58	406	681
Cap Entry, veh/h	692	1310	1293
V/C Ratio	0.084	0.310	0.527
Control Delay, s/veh	6.1	5.5	8.5
LOS	A	A	A
95th %tile Queue, veh	0	1	3













Lanes, Volumes, Timings
8: US 24 & Curtis/Stapleton

2040 Background + Site
AM

												
Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	174	368	593	75	372	51	300	400	50	142	797	350
Future Volume (vph)	174	368	593	75	372	51	300	400	50	142	797	350
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	190		325	215		215	890		1000	790		790
Storage Lanes	2		2	2		1	2		1	2		1
Taper Length (ft)	240			200			190			190		
Lane Util. Factor	0.97	0.95	0.88	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3433	3539	2787	3433	3539	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.433			0.462			0.190			0.421		
Satd. Flow (perm)	1565	3539	2787	1670	3539	1583	687	3539	1583	1521	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			461			143			143			273
Link Speed (mph)		45			45			55			55	
Link Distance (ft)		4560			3434			6479			6170	
Travel Time (s)		69.1			52.0			80.3			76.5	
Peak Hour Factor	0.87	0.87	0.87	0.94	0.94	0.94	0.78	0.78	0.78	1.00	1.00	1.00
Adj. Flow (vph)	200	423	682	80	396	54	385	513	64	142	797	350
Shared Lane Traffic (%)												
Lane Group Flow (vph)	200	423	682	80	396	54	385	513	64	142	797	350
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	20
Trailing Detector (ft)	0	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	0
Detector 1 Size(ft)	20	6	20	20	6	20	20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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	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	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+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	Perm
Protected Phases	1	6		5	2		7	4		3	8	
Permitted Phases	6		6	2		2	4		4	8		8

Lanes, Volumes, Timings
8: US 24 & Curtis/Stapleton

2040 Background + Site
AM

												
Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Detector Phase	1	6	6	5	2	2	7	4	4	3	8	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)	9.5	23.5	23.5	9.5	23.5	23.5	10.0	37.5	37.5	9.5	37.0	37.0
Total Split (%)	11.9%	29.4%	29.4%	11.9%	29.4%	29.4%	12.5%	46.9%	46.9%	11.9%	46.3%	46.3%
Maximum Green (s)	5.0	19.0	19.0	5.0	19.0	19.0	5.5	33.0	33.0	5.0	32.5	32.5
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	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	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	3.0	3.0
Recall Mode	None	Max	Max	None	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)		11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	0
Act Effect Green (s)	25.2	21.3	21.3	24.2	19.1	19.1	30.3	26.0	26.0	28.4	23.4	23.4
Actuated g/C Ratio	0.35	0.30	0.30	0.34	0.27	0.27	0.43	0.37	0.37	0.40	0.33	0.33
v/c Ratio	0.29	0.40	0.59	0.12	0.42	0.10	0.76	0.40	0.10	0.19	0.69	0.50
Control Delay	16.3	23.5	10.3	15.5	24.2	0.4	23.2	18.1	0.3	10.8	23.7	7.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	16.3	23.5	10.3	15.5	24.2	0.4	23.2	18.1	0.3	10.8	23.7	7.1
LOS	B	C	B	B	C	A	C	B	A	B	C	A
Approach Delay		15.5			20.5			19.0			17.8	
Approach LOS		B			C			B			B	

Intersection Summary

Area Type: Other

Cycle Length: 80

Actuated Cycle Length: 71.2

Natural Cycle: 65

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.76

Intersection Signal Delay: 17.7









Intersection LOS: B

Intersection Capacity Utilization 60.8%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 8: US 24 & Curtis/Stapleton

			
Ø1	Ø2	Ø3	Ø4
9.5 s	23.5 s	9.5 s	37.5 s
			
Ø5	Ø6	Ø7	Ø8
9.5 s	23.5 s	10 s	37 s

13: Curtis & Sugarland Performance by movement Interval #1 7:30

Movement	EBL	EBR	NBL	SBT	SBR	All
Denied Del/Veh (s)	0.2	0.1	0.0	0.0	0.0	0.0
Total Del/Veh (s)	10.8	2.8	2.7	0.4	0.4	2.7

13: Curtis & Sugarland Performance by movement Interval #2 7:45

Movement	EBL	EBR	NBL	SBT	SBR	All
Denied Del/Veh (s)	0.2	0.1	0.0	0.0	0.0	0.0
Total Del/Veh (s)	9.4	2.9	2.9	0.3	0.5	2.4

13: Curtis & Sugarland Performance by movement Interval #3 8:00

Movement	EBL	EBR	NBL	NBT	SBT	SBR	All
Denied Del/Veh (s)	0.2	0.1	0.0	0.0	0.0	0.1	0.1
Total Del/Veh (s)	10.8	2.9	3.0	0.2	0.4	0.5	2.6

13: Curtis & Sugarland Performance by movement Interval #4 8:15

Movement	EBL	EBR	NBL	NBT	SBT	SBR	All
Denied Del/Veh (s)	0.1	0.1	0.0		0.0	0.0	0.0
Total Del/Veh (s)	8.3	3.3	2.7		0.3	0.3	2.1

13: Curtis & Sugarland Performance by movement Entire Run

Movement	EBL	EBR	NBL	NBT	SBT	SBR	All
Denied Del/Veh (s)	0.2	0.1	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	10.1	3.1	2.9	0.2	0.4	0.4	2.5

16: Curtis & Suncadia Performance by movement Interval #1 7:30

Movement	EBL	EBR	NBL	SBT	SBR	All
Denied Del/Veh (s)	0.1	0.2	0.0	0.0	0.0	0.1
Total Del/Veh (s)	11.6	3.3	2.7	0.5	0.2	3.0

16: Curtis & Suncadia Performance by movement Interval #2 7:45

Movement	EBL	EBR	NBL	SBT	SBR	All
Denied Del/Veh (s)	0.2	0.2	0.0	0.0	0.0	0.1
Total Del/Veh (s)	11.6	3.5	3.6	0.5	0.2	3.1

16: Curtis & Suncadia Performance by movement Interval #3 8:00

Movement	EBL	EBR	NBL	NBT	SBT	SBR	All
Denied Del/Veh (s)	0.2	0.2	0.0	0.0	0.0	0.0	0.1
Total Del/Veh (s)	11.8	3.3	3.2	0.0	0.6	0.1	3.0

16: Curtis & Suncadia Performance by movement Interval #4 8:15







Movement	EBL	EBR	NBL	SBT	SBR	All
Denied Del/Veh (s)	0.2	0.2	0.0	0.0	0.0	0.1
Total Del/Veh (s)	10.4	3.4	2.9	0.5	0.2	2.7






16: Curtis & Suncadia Performance by movement Entire Run

Movement	EBL	EBR	NBL	NBT	SBT	SBR	All
Denied Del/Veh (s)	0.2	0.2	0.0	0.0	0.0	0.0	0.1
Total Del/Veh (s)	11.7	3.4	3.2	0.0	0.6	0.2	3.0

Total Zone Performance By Interval

Interval Start	7:30	7:45	8:00	8:15	All
Denied Del/Veh (s)	0.2	0.2	0.2	0.2	0.2
Total Del/Veh (s)	111.1	132.4	107.4	134.1	286.0

Intersection						
Int Delay, s/veh	9.2					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	126	66	47	725	384	103
Future Vol, veh/h	126	66	47	725	384	103
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	245	-	-	195
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	81	81
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	137	72	51	788	474	127
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	1364	474	601	0	-	0
Stage 1	474	-	-	-	-	-
Stage 2	890	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	163	590	976	-	-	-
Stage 1	626	-	-	-	-	-
Stage 2	401	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	155	590	976	-	-	-
Mov Cap-2 Maneuver	155	-	-	-	-	-
Stage 1	593	-	-	-	-	-
Stage 2	401	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	70.8	0.5		0		
HCM LOS	F					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	976	-	155	590	-	-
HCM Lane V/C Ratio	0.052	-	0.884	0.122	-	-
HCM Control Delay (s)	8.9	-	101.6	11.9	-	-
HCM Lane LOS	A	-	F	B	-	-
HCM 95th %tile Q(veh)	0.2	-	6.1	0.4	-	-

Intersection						
Int Delay, s/veh	14.3					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	136	125	73	636	405	67
Future Vol, veh/h	136	125	73	636	405	67
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	81	81
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	148	136	79	691	500	83
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	1349	500	583	0	-	0
Stage 1	500	-	-	-	-	-
Stage 2	849	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	166	571	991	-	-	-
Stage 1	609	-	-	-	-	-
Stage 2	419	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	~ 145	571	991	-	-	-
Mov Cap-2 Maneuver	~ 145	-	-	-	-	-
Stage 1	530	-	-	-	-	-
Stage 2	419	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	79.8	0.9		0		
HCM LOS	F					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	991	-	145	571	-	-
HCM Lane V/C Ratio	0.08	-	1.019	0.238	-	-
HCM Control Delay (s)	8.9	-	141	13.3	-	-
HCM Lane LOS	A	-	F	B	-	-
HCM 95th %tile Q(veh)	0.3	-	7.6	0.9	-	-
Notes						
~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon						

Intersection						
Int Delay, s/veh	2.6					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑	↗		↗
Traffic Vol, veh/h	88	395	497	48	0	154
Future Vol, veh/h	88	395	497	48	0	154
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	260	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	100	100	100	100	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	88	395	497	48	0	167
Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	545	0	-	0	-	497
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	4.12	-	-	-	-	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	2.218	-	-	-	-	3.318
Pot Cap-1 Maneuver	1024	-	-	-	0	573
Stage 1	-	-	-	-	0	-
Stage 2	-	-	-	-	0	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1024	-	-	-	-	573
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	EB		WB		SB	
HCM Control Delay, s	1.6		0		13.9	
HCM LOS					B	
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1024	-	-	-	573	
HCM Lane V/C Ratio	0.086	-	-	-	0.292	
HCM Control Delay (s)	8.8	-	-	-	13.9	
HCM Lane LOS	A	-	-	-	B	
HCM 95th %tile Q(veh)	0.3	-	-	-	1.2	

HCM 6th Roundabout
9: Curtis & Judge Orr

2040 Background + Site
PM (Roundabout Accesses)

Intersection									
Intersection Delay, s/veh	13.6								
Intersection LOS	B								
Approach	EB		WB		NB		SB		
Entry Lanes	2		2		2		2		
Conflicting Circle Lanes	1		1		1		1		
Adj Approach Flow, veh/h	455		299		1135		518		
Demand Flow Rate, veh/h	465		305		1157		529		
Vehicles Circulating, veh/h	547		1126		384		558		
Vehicles Exiting, veh/h	539		415		628		873		
Ped Vol Crossing Leg, #/h	0		0		0		0		
Ped Cap Adj	1.000		1.000		1.000		1.000		
Approach Delay, s/veh	10.7		15.8		16.0		9.8		
Approach LOS	B		C		C		A		
Lane	Left	Right	Left	Right	Left	Right	Left	Right	
Designated Moves	L	TR	L	TR	L	TR	L	TR	
Assumed Moves	L	TR	L	TR	L	TR	L	TR	
RT Channelized									
Lane Util	0.062	0.938	0.144	0.856	0.315	0.685	0.202	0.798	
Follow-Up Headway, s	2.535	2.535	2.535	2.535	2.535	2.535	2.535	2.535	
Critical Headway, s	4.544	4.544	4.544	4.544	4.544	4.544	4.544	4.544	
Entry Flow, veh/h	29	436	44	261	365	792	107	422	
Cap Entry Lane, veh/h	863	863	510	510	1001	1001	855	855	
Entry HV Adj Factor	0.966	0.980	0.977	0.981	0.981	0.981	0.981	0.979	
Flow Entry, veh/h	28	427	43	256	358	777	105	413	
Cap Entry, veh/h	833	846	498	500	982	982	839	837	
V/C Ratio	0.034	0.505	0.086	0.512	0.365	0.791	0.125	0.494	
Control Delay, s/veh	4.6	11.0	8.3	17.1	7.6	19.9	5.5	10.9	
LOS	A	B	A	C	A	C	A	B	
95th %tile Queue, veh	0	3	0	3	2	9	0	3	

HCM 6th Roundabout
10: Curtis & Falcon Hwy

2040 Background + Site
PM (Roundabout Accesses)

























Intersection									
Intersection Delay, s/veh	13.9								
Intersection LOS	B								
Approach	EB		WB		NB		SB		
Entry Lanes	2		2		2		2		
Conflicting Circle Lanes	1		1		1		1		
Adj Approach Flow, veh/h	413		396		995		662		
Demand Flow Rate, veh/h	421		404		1015		675		
Vehicles Circulating, veh/h	573		1044		514		672		
Vehicles Exiting, veh/h	774		485		480		776		
Ped Vol Crossing Leg, #/h	0		0		0		0		
Ped Cap Adj	1.000		1.000		1.000		1.000		
Approach Delay, s/veh	8.5		16.0		15.1		14.1		
Approach LOS	A		C		C		B		
Lane	Left	Right	Left	Right	Left	Right	Left	Right	
Designated Moves	LT	R	LT	R	L	TR	L	TR	
Assumed Moves	LT	R	LT	R	L	TR	L	TR	
RT Channelized									
Lane Util	0.810	0.190	0.775	0.225	0.354	0.646	0.256	0.744	
Follow-Up Headway, s	2.535	2.535	2.535	2.535	2.535	2.535	2.535	2.535	
Critical Headway, s	4.544	4.544	4.544	4.544	4.544	4.544	4.544	4.544	
Entry Flow, veh/h	341	80	313	91	359	656	173	502	
Cap Entry Lane, veh/h	843	843	549	549	890	890	770	770	
Entry HV Adj Factor	0.981	0.975	0.981	0.978	0.981	0.980	0.983	0.981	
Flow Entry, veh/h	335	78	307	89	352	643	170	492	
Cap Entry, veh/h	827	822	539	537	872	872	757	756	
V/C Ratio	0.405	0.095	0.570	0.166	0.404	0.737	0.225	0.652	
Control Delay, s/veh	9.3	5.3	18.0	8.9	8.9	18.5	7.3	16.5	
LOS	A	A	C	A	A	C	A	C	
95th %tile Queue, veh	2	0	4	1	2	7	1	5	

Intersection			
Intersection Delay, s/veh	10.8		
Intersection LOS	B		
Approach	EB	NB	SB
Entry Lanes	1	1	1
Conflicting Circle Lanes	1	1	1
Adj Approach Flow, veh/h	209	839	601
Demand Flow Rate, veh/h	213	856	613
Vehicles Circulating, veh/h	483	140	52
Vehicles Exiting, veh/h	182	556	944
Ped Vol Crossing Leg, #/h	0	0	0
Ped Cap Adj	1.000	1.000	1.000
Approach Delay, s/veh	7.1	14.0	7.6
Approach LOS	A	B	A
Lane	Left	Left	Left
Designated Moves	LR	LT	TR
Assumed Moves	LR	LT	TR
RT Channelized			
Lane Util	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976
Entry Flow, veh/h	213	856	613
Cap Entry Lane, veh/h	843	1196	1309
Entry HV Adj Factor	0.981	0.980	0.980
Flow Entry, veh/h	209	839	601
Cap Entry, veh/h	827	1173	1282
V/C Ratio	0.253	0.716	0.468
Control Delay, s/veh	7.1	14.0	7.6
LOS	A	B	A
95th %tile Queue, veh	1	7	3

Intersection			
Intersection Delay, s/veh	10.1		
Intersection LOS	B		
Approach	EB	NB	SB
Entry Lanes	1	1	1
Conflicting Circle Lanes	1	1	1
Adj Approach Flow, veh/h	284	770	583
Demand Flow Rate, veh/h	290	786	595
Vehicles Circulating, veh/h	510	151	81
Vehicles Exiting, veh/h	166	649	856
Ped Vol Crossing Leg, #/h	0	0	0
Ped Cap Adj	1.000	1.000	1.000
Approach Delay, s/veh	8.7	12.3	7.8
Approach LOS	A	B	A
Lane	Left	Left	Left
Designated Moves	LR	LT	TR
Assumed Moves	LR	LT	TR
RT Channelized			
Lane Util	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976
Entry Flow, veh/h	290	786	595
Cap Entry Lane, veh/h	820	1183	1270
Entry HV Adj Factor	0.979	0.980	0.980
Flow Entry, veh/h	284	770	583
Cap Entry, veh/h	803	1159	1245
V/C Ratio	0.354	0.664	0.468
Control Delay, s/veh	8.7	12.3	7.8
LOS	A	B	A
95th %tile Queue, veh	2	5	3













Lanes, Volumes, Timings
8: US 24 & Curtis/Stapleton

2040 Background + Site
PM

												
Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	347	352	375	125	503	202	650	850	150	165	493	350
Future Volume (vph)	347	352	375	125	503	202	650	850	150	165	493	350
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	190		325	215		215	890		1000	790		790
Storage Lanes	2		2	2		1	2		1	2		1
Taper Length (ft)	240			200			190			190		
Lane Util. Factor	0.97	0.95	0.88	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3433	3539	2787	3433	3539	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.324			0.522			0.321			0.162		
Satd. Flow (perm)	1171	3539	2787	1886	3539	1583	1160	3539	1583	585	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			375			202			161			217
Link Speed (mph)		45			45			55			55	
Link Distance (ft)		4560			3434			6479			6170	
Travel Time (s)		69.1			52.0			80.3			76.5	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.93	0.93	0.93	0.85	0.85	0.85
Adj. Flow (vph)	347	352	375	125	503	202	699	914	161	194	580	412
Shared Lane Traffic (%)												
Lane Group Flow (vph)	347	352	375	125	503	202	699	914	161	194	580	412
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	20
Trailing Detector (ft)	0	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	0
Detector 1 Size(ft)	20	6	20	20	6	20	20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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	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	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+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	Perm
Protected Phases	1	6		5	2		7	4		3	8	
Permitted Phases	6		6	2		2	4		4	8		8

Lanes, Volumes, Timings
8: US 24 & Curtis/Stapleton

2040 Background + Site
PM

												
Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Detector Phase	1	6	6	5	2	2	7	4	4	3	8	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)	9.5	21.0	21.0	9.5	21.0	21.0	12.5	37.5	37.5	12.0	37.0	37.0
Total Split (%)	11.9%	26.3%	26.3%	11.9%	26.3%	26.3%	15.6%	46.9%	46.9%	15.0%	46.3%	46.3%
Maximum Green (s)	5.0	16.5	16.5	5.0	16.5	16.5	8.0	33.0	33.0	7.5	32.5	32.5
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	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	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	3.0	3.0
Recall Mode	None	Max	Max	None	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)		11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	0
Act Effect Green (s)	24.2	20.3	20.3	23.2	18.1	18.1	33.7	25.6	25.6	32.0	24.8	24.8
Actuated g/C Ratio	0.33	0.27	0.27	0.31	0.24	0.24	0.45	0.35	0.35	0.43	0.33	0.33
v/c Ratio	0.65	0.36	0.36	0.18	0.58	0.37	0.90	0.75	0.25	0.37	0.49	0.61
Control Delay	25.9	25.4	4.2	17.6	28.9	6.5	30.5	25.4	3.9	11.6	20.7	13.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	25.9	25.4	4.2	17.6	28.9	6.5	30.5	25.4	3.9	11.6	20.7	13.2
LOS	C	C	A	B	C	A	C	C	A	B	C	B
Approach Delay		18.2			21.8			25.5			16.6	
Approach LOS		B			C			C			B	

Intersection Summary

Area Type: Other

Cycle Length: 80

Actuated Cycle Length: 74.1

Natural Cycle: 70

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.90

Intersection Signal Delay: 21.1









Intersection LOS: C

Intersection Capacity Utilization 71.0%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 8: US 24 & Curtis/Stapleton

			
Ø1	Ø2	Ø3	Ø4
9.5 s	21 s	12 s	37.5 s
			
Ø5	Ø6	Ø7	Ø8
9.5 s	21 s	12.5 s	37 s



LSC Transportation Consultants, Inc.

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

File Name : Curtis Rd - Falcon Hwy AM 1-20

Site Code : 195140

Start Date : 1/7/2020

Page No : 1

Groups Printed- Unshifted

Start Time	Curtis Rd Southbound					Falcon Hwy Westbound					Curtis Rd Northbound					Falcon Hwy Eastbound					Int. Total
	Left	Through	Right	Peds	App. Total	Left	Through	Right	Peds	App. Total	Left	Through	Right	Peds	App. Total	Left	Through	Right	Peds	App. Total	
06:30 AM	0	72	2	0	74	4	42	4	0	50	12	6	1	0	19	1	4	44	0	49	192
06:45 AM	0	63	2	0	65	5	35	5	0	45	14	11	1	0	26	1	7	59	0	67	203
Total	0	135	4	0	139	9	77	9	0	95	26	17	2	0	45	2	11	103	0	116	395
07:00 AM	2	65	6	0	73	0	46	8	0	54	18	26	0	0	44	3	9	58	0	70	241
07:15 AM	2	75	5	0	82	5	48	7	0	60	17	9	0	0	26	0	7	69	0	76	244
07:30 AM	4	66	4	0	74	1	42	2	0	45	10	9	0	0	19	1	5	65	0	71	209
07:45 AM	0	47	3	0	50	3	32	6	0	41	12	4	2	0	18	0	12	30	0	42	151
Total	8	253	18	0	279	9	168	23	0	200	57	48	2	0	107	4	33	222	0	259	845
08:00 AM	0	21	0	0	21	2	35	3	0	40	14	14	1	0	29	0	5	26	0	31	121
08:15 AM	3	24	4	0	31	2	37	1	0	40	19	10	0	0	29	3	15	27	0	45	145
Grand Total	11	433	26	0	470	22	317	36	0	375	116	89	5	0	210	9	64	378	0	451	1506
Apprch %	2.3	92.1	5.5	0		5.9	84.5	9.6	0		55.2	42.4	2.4	0		2	14.2	83.8	0		
Total %	0.7	28.8	1.7	0	31.2	1.5	21	2.4	0	24.9	7.7	5.9	0.3	0	13.9	0.6	4.2	25.1	0	29.9	



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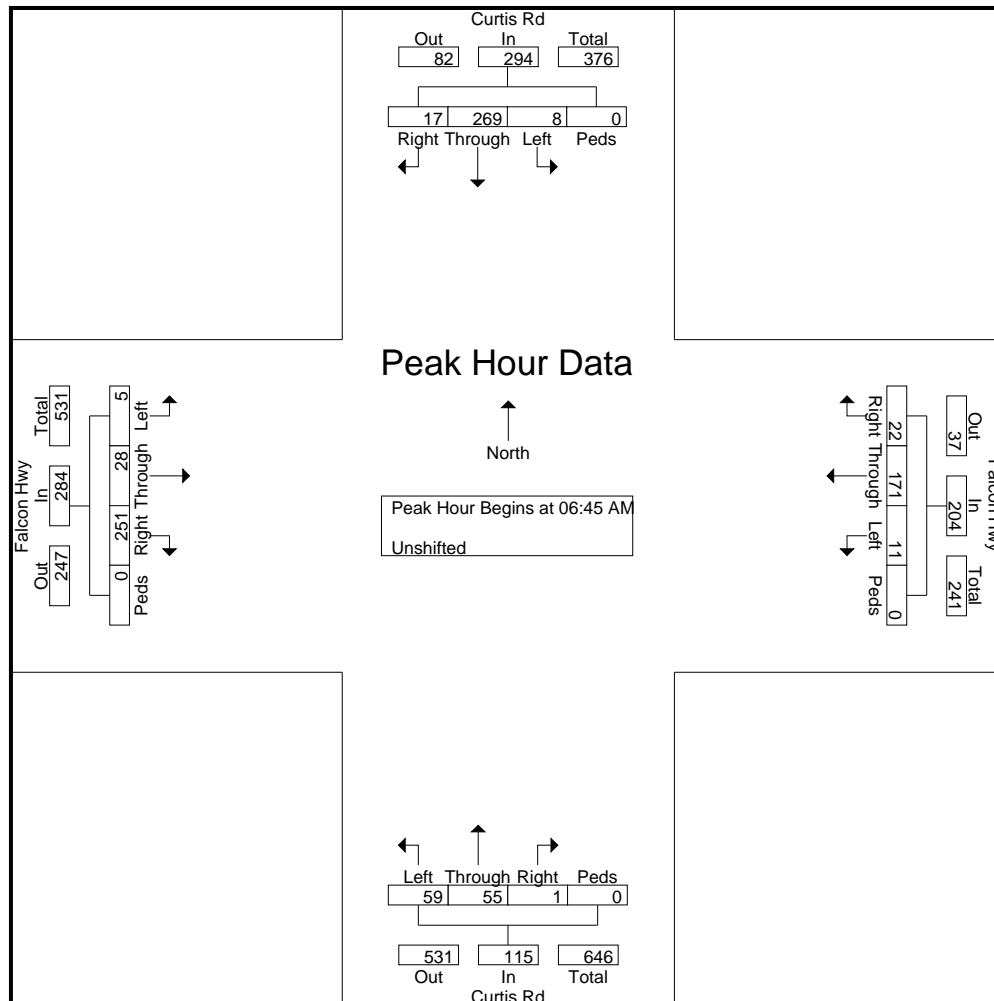
File Name : Curtis Rd - Falcon Hwy AM 1-20

Site Code : 195140

Start Date : 1/7/2020

Page No : 2

	Curtis Rd Southbound					Falcon Hwy Westbound					Curtis Rd Northbound					Falcon Hwy Eastbound					
Start Time	Left	Through	Right	Peds	App. Total	Left	Through	Right	Peds	App. Total	Left	Through	Right	Peds	App. Total	Left	Through	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 06:30 AM to 08:15 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 06:45 AM																					
06:45 AM	0	63	2	0	65	5	35	5	0	45	14	11	1	0	26	1	7	59	0	67	203
07:00 AM	2	65	6	0	73	0	46	8	0	54	18	26	0	0	44	3	9	58	0	70	241
07:15 AM	2	75	5	0	82	5	48	7	0	60	17	9	0	0	26	0	7	69	0	76	244
07:30 AM	4	66	4	0	74	1	42	2	0	45	10	9	0	0	19	1	5	65	0	71	209
Total Volume	8	269	17	0	294	11	171	22	0	204	59	55	1	0	115	5	28	251	0	284	897
% App. Total	2.7	91.5	5.8	0		5.4	83.8	10.8	0		51.3	47.8	0.9	0		1.8	9.9	88.4	0		
PHF	.500	.897	.708	.000	.896	.550	.891	.688	.000	.850	.819	.529	.250	.000	.653	.417	.778	.909	.000	.934	.919





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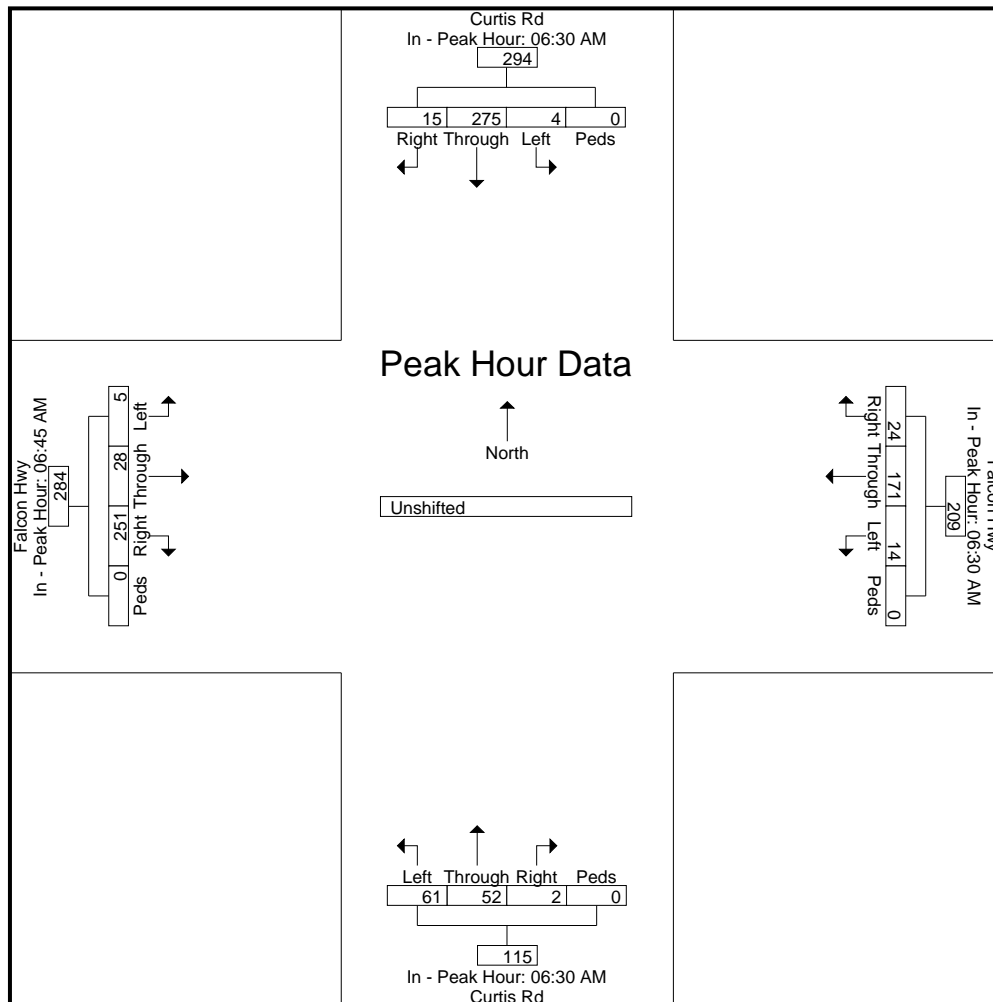
File Name : Curtis Rd - Falcon Hwy AM 1-20

Site Code : 195140

Start Date : 1/7/2020

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	Curtis Rd Southbound					Falcon Hwy Westbound					Curtis Rd Northbound					Falcon Hwy Eastbound					
Start Time	Left	Through	Right	Peds	App. Total	Left	Through	Right	Peds	App. Total	Left	Through	Right	Peds	App. Total	Left	Through	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 06:30 AM to 08:15 AM - Peak 1 of 1																					
Peak Hour for Each Approach Begins at:																					
	06:30 AM					06:30 AM					06:30 AM					06:45 AM					
+0 mins.	0	72	2	0	74	4	42	4	0	50	12	6	1	0	19	1	7	59	0	67	
+15 mins.	0	63	2	0	65	5	35	5	0	45	14	11	1	0	26	3	9	58	0	70	
+30 mins.	2	65	6	0	73	0	46	8	0	54	18	26	0	0	44	0	7	69	0	76	
+45 mins.	2	75	5	0	82	5	48	7	0	60	17	9	0	0	26	1	5	65	0	71	
Total Volume	4	275	15	0	294	14	171	24	0	209	61	52	2	0	115	5	28	251	0	284	
% App. Total	1.4	93.5	5.1	0		6.7	81.8	11.5	0		53	45.2	1.7	0		1.8	9.9	88.4	0		
PHF	.500	.917	.625	.000	.896	.700	.891	.750	.000	.871	.847	.500	.500	.000	.653	.417	.778	.909	.000	.934	





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File Name : Curtis Rd - Falcon Hwy PM 1-20

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Groups Printed- Unshifted

	Curtis Rd Southbound					Falcon Hwy Westbound					Curtis Rd Northbound					Falcon Hwy Eastbound					
Start Time	Left	Through	Right	Peds	App. Total	Left	Through	Right	Peds	App. Total	Left	Through	Right	Peds	App. Total	Left	Through	Right	Peds	App. Total	Int. Total
04:00 PM	6	12	3	0	21	1	16	2	0	19	47	55	4	0	106	1	48	18	0	67	213
04:15 PM	6	14	1	0	21	0	14	2	0	16	68	76	8	0	152	7	47	13	0	67	256
04:30 PM	3	14	1	0	18	0	18	4	0	22	66	71	3	0	140	4	47	15	0	66	246
04:45 PM	5	11	1	0	17	1	24	1	0	26	59	70	5	0	134	8	52	14	0	74	251
Total	20	51	6	0	77	2	72	9	0	83	240	272	20	0	532	20	194	60	0	274	966
05:00 PM	3	7	2	0	12	0	19	1	0	20	58	63	10	0	131	6	63	14	0	83	246
05:15 PM	5	5	0	0	10	2	30	2	0	34	27	48	11	0	86	8	43	14	0	65	195
05:30 PM	5	5	4	0	14	2	17	2	0	21	46	38	7	0	91	8	49	22	0	79	205
05:45 PM	8	12	4	0	24	2	11	0	0	13	21	30	4	0	55	3	35	17	0	55	147
Total	21	29	10	0	60	6	77	5	0	88	152	179	32	0	363	25	190	67	0	282	793
Grand Total	41	80	16	0	137	8	149	14	0	171	392	451	52	0	895	45	384	127	0	556	1759
Apprch %	29.9	58.4	11.7	0		4.7	87.1	8.2	0		43.8	50.4	5.8	0		8.1	69.1	22.8	0		
Total %	2.3	4.5	0.9	0	7.8	0.5	8.5	0.8	0	9.7	22.3	25.6	3	0	50.9	2.6	21.8	7.2	0	31.6	



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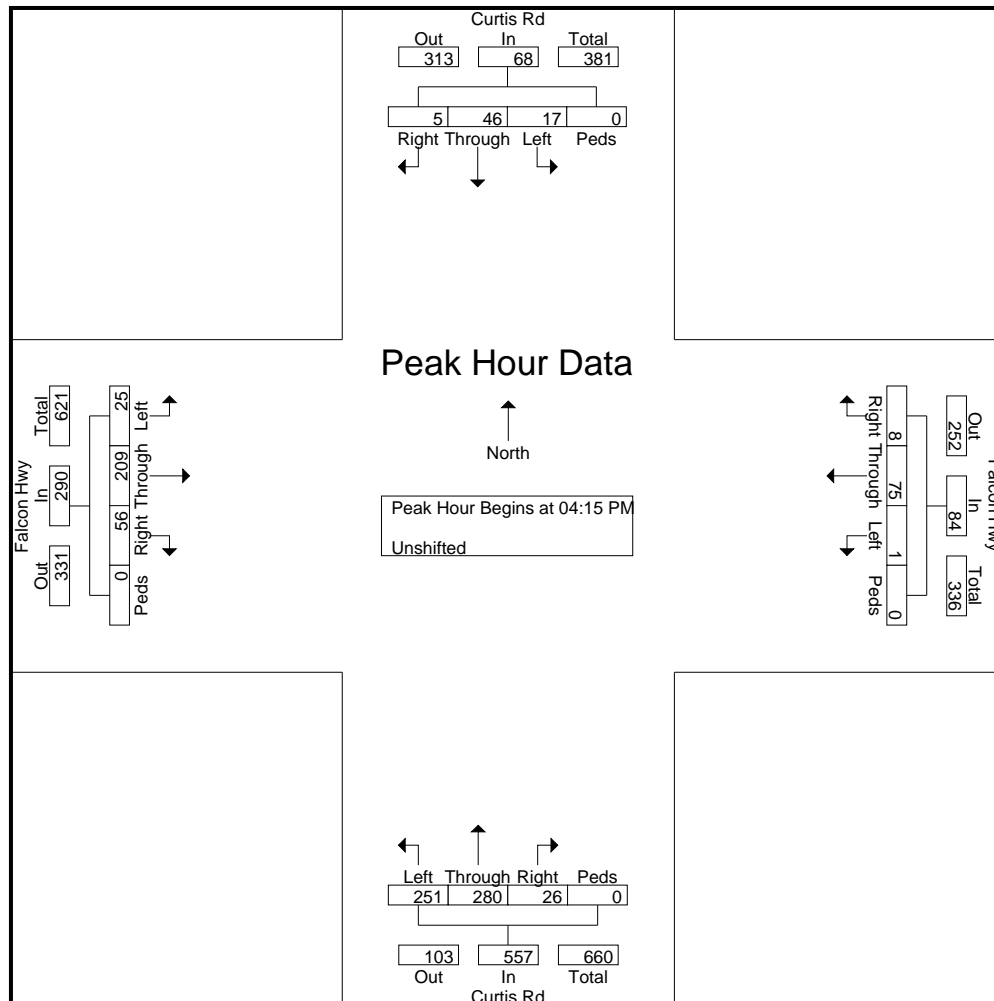
File Name : Curtis Rd - Falcon Hwy PM 1-20

Site Code : 195140

Start Date : 1/7/2020

Page No : 2

	Curtis Rd Southbound					Falcon Hwy Westbound					Curtis Rd Northbound					Falcon Hwy Eastbound					
Start Time	Left	Through	Right	Peds	App. Total	Left	Through	Right	Peds	App. Total	Left	Through	Right	Peds	App. Total	Left	Through	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:15 PM																					
04:15 PM	6	14	1	0	21	0	14	2	0	16	68	76	8	0	152	7	47	13	0	67	256
04:30 PM	3	14	1	0	18	0	18	4	0	22	66	71	3	0	140	4	47	15	0	66	246
04:45 PM	5	11	1	0	17	1	24	1	0	26	59	70	5	0	134	8	52	14	0	74	251
05:00 PM	3	7	2	0	12	0	19	1	0	20	58	63	10	0	131	6	63	14	0	83	246
Total Volume	17	46	5	0	68	1	75	8	0	84	251	280	26	0	557	25	209	56	0	290	999
% App. Total	25	67.6	7.4	0		1.2	89.3	9.5	0		45.1	50.3	4.7	0		8.6	72.1	19.3	0		
PHF	.708	.821	.625	.000	.810	.250	.781	.500	.000	.808	.923	.921	.650	.000	.916	.781	.829	.933	.000	.873	.976





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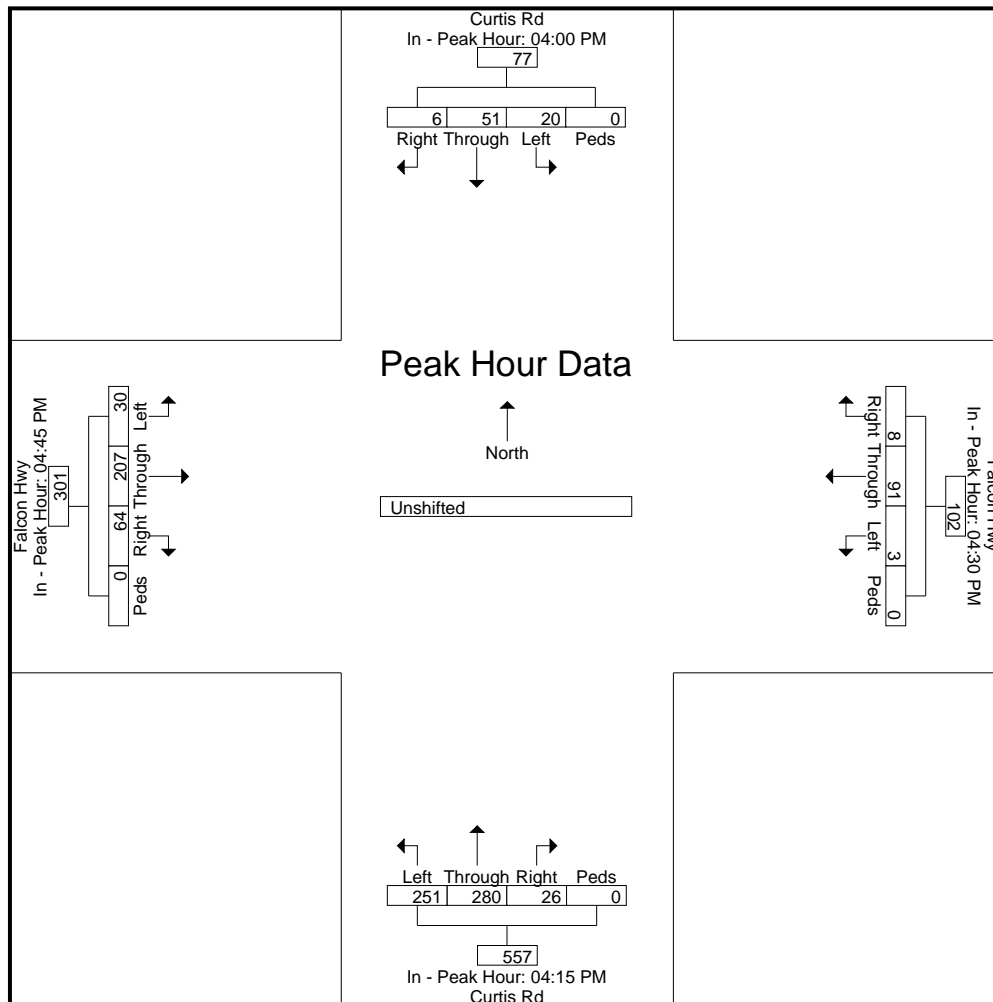
File Name : Curtis Rd - Falcon Hwy PM 1-20

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	Curtis Rd Southbound					Falcon Hwy Westbound					Curtis Rd Northbound					Falcon Hwy Eastbound					
Start Time	Left	Through	Right	Peds	App. Total	Left	Through	Right	Peds	App. Total	Left	Through	Right	Peds	App. Total	Left	Through	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Each Approach Begins at:																					
	04:00 PM					04:30 PM					04:15 PM					04:45 PM					
+0 mins.	6	12	3	0	21	0	18	4	0	22	68	76	8	0	152	8	52	14	0	74	
+15 mins.	6	14	1	0	21	1	24	1	0	26	66	71	3	0	140	6	63	14	0	83	
+30 mins.	3	14	1	0	18	0	19	1	0	20	59	70	5	0	134	8	43	14	0	65	
+45 mins.	5	11	1	0	17	2	30	2	0	34	58	63	10	0	131	8	49	22	0	79	
Total Volume	20	51	6	0	77	3	91	8	0	102	251	280	26	0	557	30	207	64	0	301	
% App. Total	26	66.2	7.8	0		2.9	89.2	7.8	0		45.1	50.3	4.7	0		10	68.8	21.3	0		
PHF	.833	.911	.500	.000	.917	.375	.758	.500	.000	.750	.923	.921	.650	.000	.916	.938	.821	.727	.000	.907	





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File Name : Curtis Rd - Judge Orr Rd AM 1-20

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Start Date : 1/8/2020

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Groups Printed- Unshifted

	Curtis Rd Southbound					Judge Orr Rd Westbound					Curtis Rd Northbound					Judge Orr Rd Eastbound					
Start Time	Left	Through	Right	Peds	App. Total	Left	Through	Right	Peds	App. Total	Left	Through	Right	Peds	App. Total	Left	Through	Right	Peds	App. Total	Int. Total
06:30 AM	2	48	0	0	50	3	30	4	0	37	4	10	1	0	15	0	7	18	0	25	127
06:45 AM	3	43	0	0	46	6	26	5	0	37	5	11	2	0	18	0	5	24	0	29	130
Total	5	91	0	0	96	9	56	9	0	74	9	21	3	0	33	0	12	42	0	54	257
07:00 AM	2	46	0	0	48	6	24	3	0	33	10	21	1	0	32	0	9	21	0	30	143
07:15 AM	0	44	0	0	44	6	29	4	0	39	6	23	0	0	29	0	12	25	0	37	149
07:30 AM	2	51	1	0	54	1	18	3	0	22	7	12	0	0	19	0	3	25	0	28	123
07:45 AM	3	37	1	0	41	4	20	1	0	25	5	11	2	0	18	0	7	10	0	17	101
Total	7	178	2	0	187	17	91	11	0	119	28	67	3	0	98	0	31	81	0	112	516
08:00 AM	0	16	0	0	16	1	29	0	0	30	4	8	0	0	12	0	7	5	0	12	70
08:15 AM	3	22	0	0	25	4	16	5	0	25	9	8	0	0	17	0	12	15	0	27	94
Grand Total	15	307	2	0	324	31	192	25	0	248	50	104	6	0	160	0	62	143	0	205	937
Apprch %	4.6	94.8	0.6	0		12.5	77.4	10.1	0		31.2	65	3.8	0		0	30.2	69.8	0		
Total %	1.6	32.8	0.2	0	34.6	3.3	20.5	2.7	0	26.5	5.3	11.1	0.6	0	17.1	0	6.6	15.3	0	21.9	



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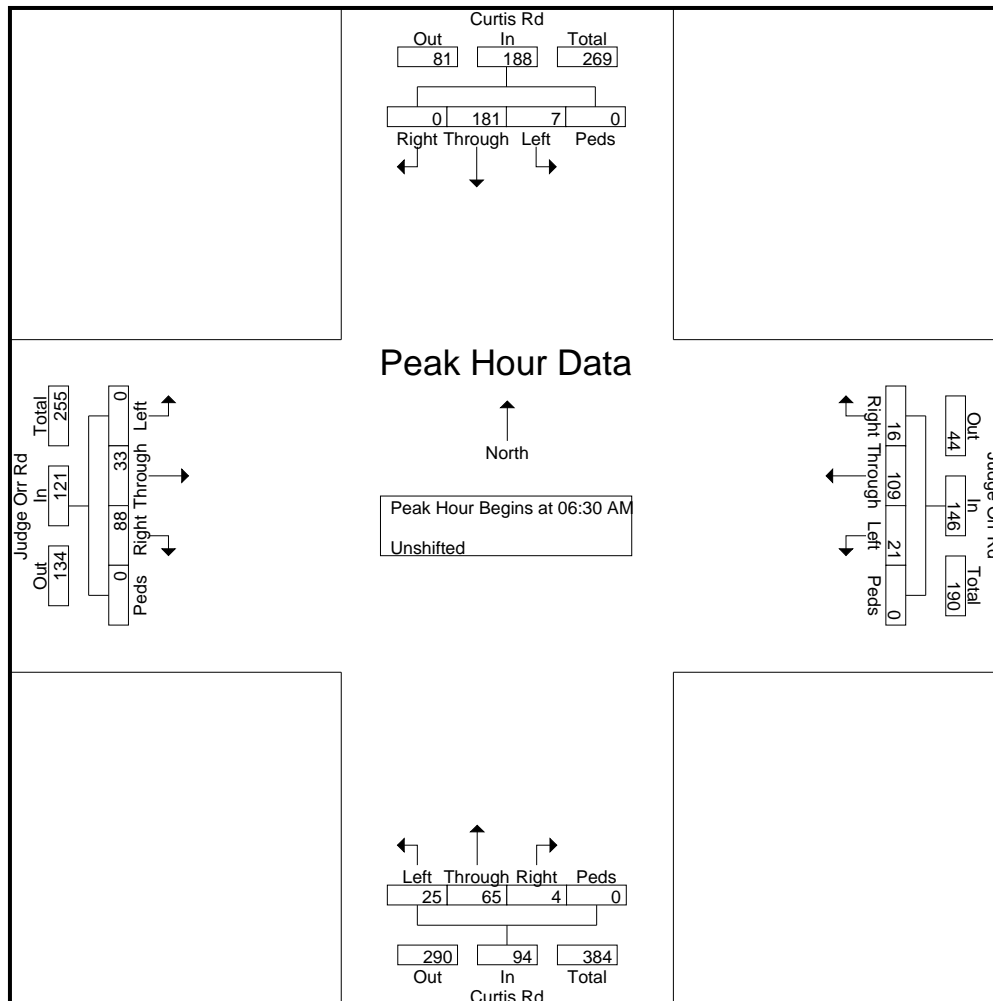
File Name : Curtis Rd - Judge Orr Rd AM 1-20

Site Code : 195140

Start Date : 1/8/2020

Page No : 2

	Curtis Rd Southbound					Judge Orr Rd Westbound					Curtis Rd Northbound					Judge Orr Rd Eastbound					
Start Time	Left	Through	Right	Peds	App. Total	Left	Through	Right	Peds	App. Total	Left	Through	Right	Peds	App. Total	Left	Through	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 06:30 AM to 08:15 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 06:30 AM																					
06:30 AM	2	48	0	0	50	3	30	4	0	37	4	10	1	0	15	0	7	18	0	25	127
06:45 AM	3	43	0	0	46	6	26	5	0	37	5	11	2	0	18	0	5	24	0	29	130
07:00 AM	2	46	0	0	48	6	24	3	0	33	10	21	1	0	32	0	9	21	0	30	143
07:15 AM	0	44	0	0	44	6	29	4	0	39	6	23	0	0	29	0	12	25	0	37	149
Total Volume	7	181	0	0	188	21	109	16	0	146	25	65	4	0	94	0	33	88	0	121	549
% App. Total	3.7	96.3	0	0		14.4	74.7	11	0		26.6	69.1	4.3	0		0	27.3	72.7	0		
PHF	.583	.943	.000	.000	.940	.875	.908	.800	.000	.936	.625	.707	.500	.000	.734	.000	.688	.880	.000	.818	.921





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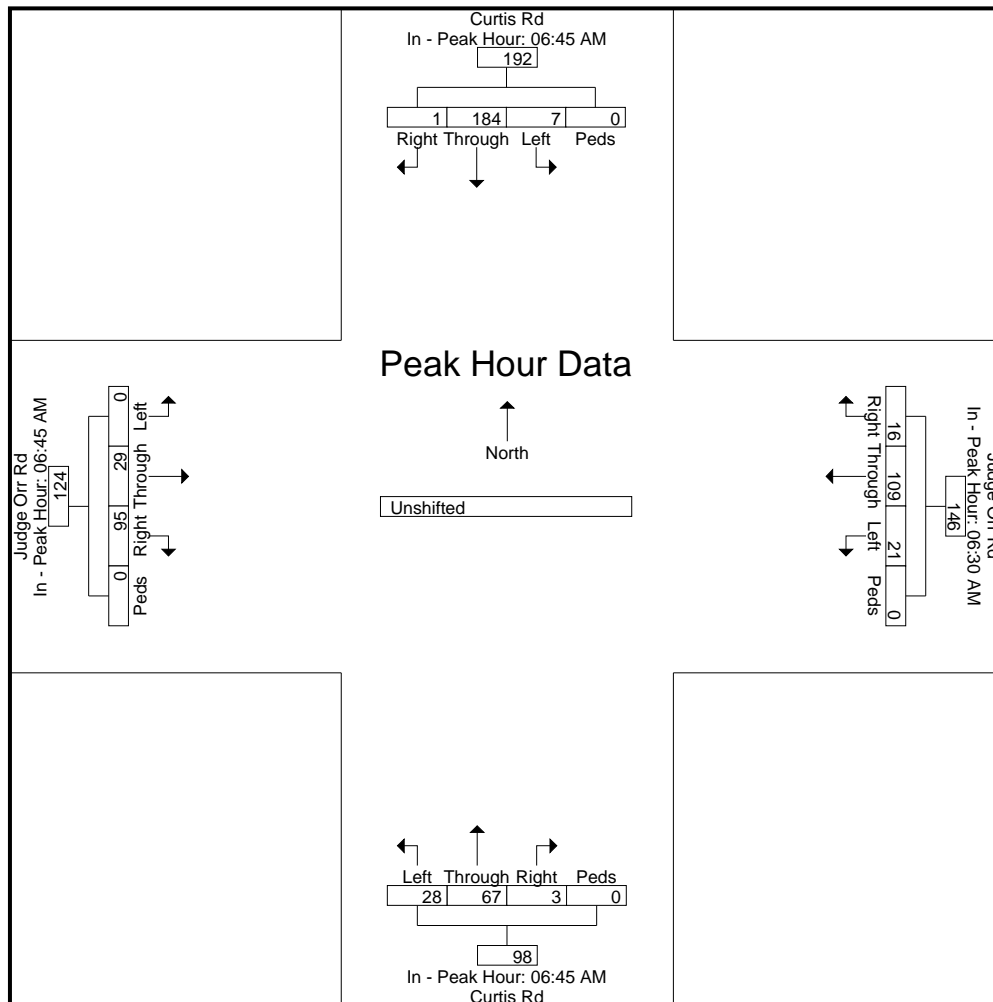
File Name : Curtis Rd - Judge Orr Rd AM 1-20

Site Code : 195140

Start Date : 1/8/2020

Page No : 3

	Curtis Rd Southbound					Judge Orr Rd Westbound					Curtis Rd Northbound					Judge Orr Rd Eastbound					
Start Time	Left	Through	Right	Peds	App. Total	Left	Through	Right	Peds	App. Total	Left	Through	Right	Peds	App. Total	Left	Through	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 06:30 AM to 08:15 AM - Peak 1 of 1																					
Peak Hour for Each Approach Begins at:																					
	06:45 AM					06:30 AM					06:45 AM					06:45 AM					
+0 mins.	3	43	0	0	46	3	30	4	0	37	5	11	2	0	18	0	5	24	0	29	
+15 mins.	2	46	0	0	48	6	26	5	0	37	10	21	1	0	32	0	9	21	0	30	
+30 mins.	0	44	0	0	44	6	24	3	0	33	6	23	0	0	29	0	12	25	0	37	
+45 mins.	2	51	1	0	54	6	29	4	0	39	7	12	0	0	19	0	3	25	0	28	
Total Volume	7	184	1	0	192	21	109	16	0	146	28	67	3	0	98	0	29	95	0	124	
% App. Total	3.6	95.8	0.5	0		14.4	74.7	11	0		28.6	68.4	3.1	0		0	23.4	76.6	0		
PHF	.583	.902	.250	.000	.889	.875	.908	.800	.000	.936	.700	.728	.375	.000	.766	.000	.604	.950	.000	.838	





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Start Date : 1/8/2020

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	Curtis Rd Southbound					Judge Orr Rd Westbound					Curtis Rd Northbound					Judge Orr Rd Eastbound					
Start Time	Left	Through	Right	Peds	App. Total	Left	Through	Right	Peds	App. Total	Left	Through	Right	Peds	App. Total	Left	Through	Right	Peds	App. Total	Int. Total
04:00 PM	3	12	3	0	18	0	12	3	0	15	11	36	1	0	48	1	24	10	0	35	116
04:15 PM	6	7	1	0	14	1	20	1	0	22	42	60	3	0	105	0	26	6	0	32	173
04:30 PM	3	11	0	0	14	1	15	0	0	16	19	42	4	0	65	1	27	3	0	31	126
04:45 PM	3	10	1	0	14	0	16	1	0	17	30	43	3	0	76	0	24	3	0	27	134
Total	15	40	5	0	60	2	63	5	0	70	102	181	11	0	294	2	101	22	0	125	549
05:00 PM	4	10	0	0	14	1	12	3	0	16	32	48	4	0	84	0	19	4	0	23	137
05:15 PM	4	11	0	0	15	1	13	3	0	17	19	31	4	0	54	0	31	2	0	33	119
05:30 PM	5	13	0	0	18	1	12	0	0	13	12	35	3	0	50	1	22	2	0	25	106
05:45 PM	3	10	0	0	13	1	11	1	0	13	10	33	2	0	45	1	20	2	0	23	94
Total	16	44	0	0	60	4	48	7	0	59	73	147	13	0	233	2	92	10	0	104	456
Grand Total	31	84	5	0	120	6	111	12	0	129	175	328	24	0	527	4	193	32	0	229	1005
Apprch %	25.8	70	4.2	0		4.7	86	9.3	0		33.2	62.2	4.6	0		1.7	84.3	14	0		
Total %	3.1	8.4	0.5	0	11.9	0.6	11	1.2	0	12.8	17.4	32.6	2.4	0	52.4	0.4	19.2	3.2	0	22.8	



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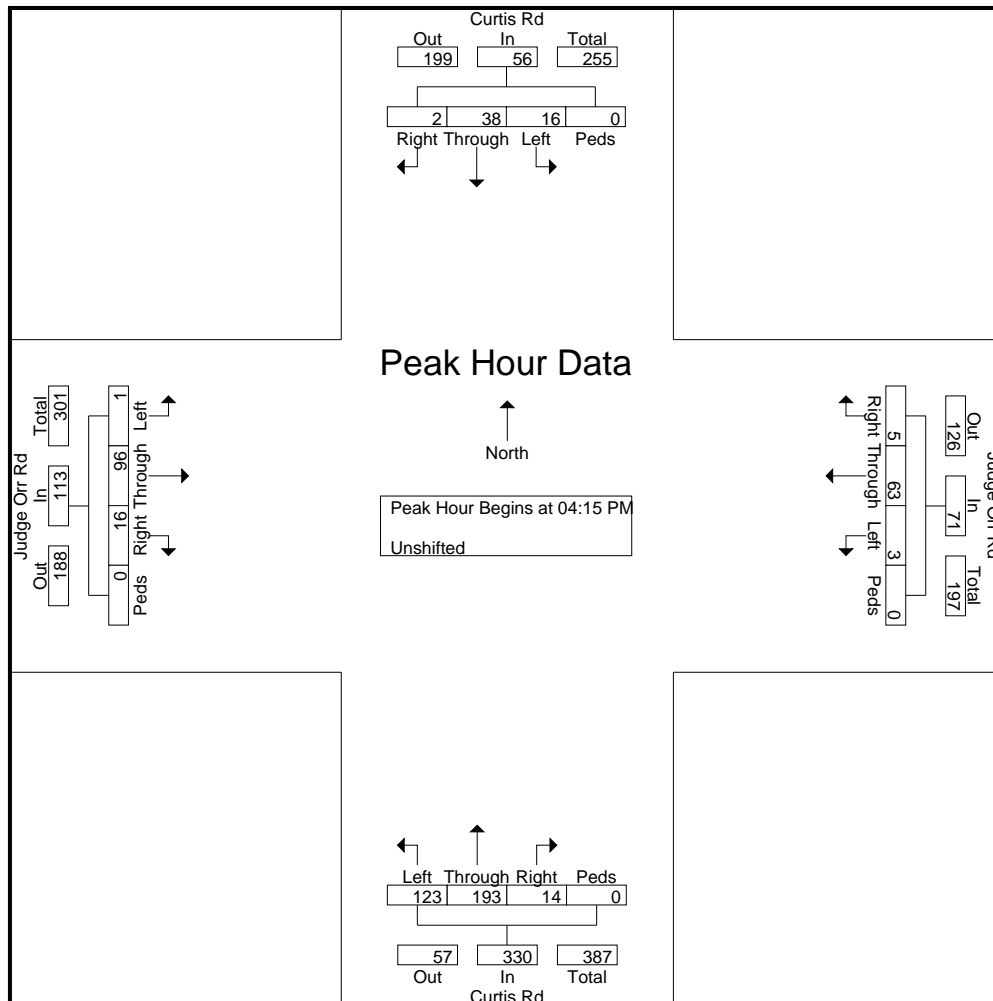
File Name : Curtis Rd - Judge Orr Rd PM 1-20

Site Code : 00195140

Start Date : 1/8/2020

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	Curtis Rd Southbound					Judge Orr Rd Westbound					Curtis Rd Northbound					Judge Orr Rd Eastbound					
Start Time	Left	Through	Right	Peds	App. Total	Left	Through	Right	Peds	App. Total	Left	Through	Right	Peds	App. Total	Left	Through	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:15 PM																					
04:15 PM	6	7	1	0	14	1	20	1	0	22	42	60	3	0	105	0	26	6	0	32	173
04:30 PM	3	11	0	0	14	1	15	0	0	16	19	42	4	0	65	1	27	3	0	31	126
04:45 PM	3	10	1	0	14	0	16	1	0	17	30	43	3	0	76	0	24	3	0	27	134
05:00 PM	4	10	0	0	14	1	12	3	0	16	32	48	4	0	84	0	19	4	0	23	137
Total Volume	16	38	2	0	56	3	63	5	0	71	123	193	14	0	330	1	96	16	0	113	570
% App. Total	28.6	67.9	3.6	0		4.2	88.7	7	0		37.3	58.5	4.2	0		0.9	85	14.2	0		
PHF	.667	.864	.500	.000	1.00	.750	.788	.417	.000	.807	.732	.804	.875	.000	.786	.250	.889	.667	.000	.883	.824





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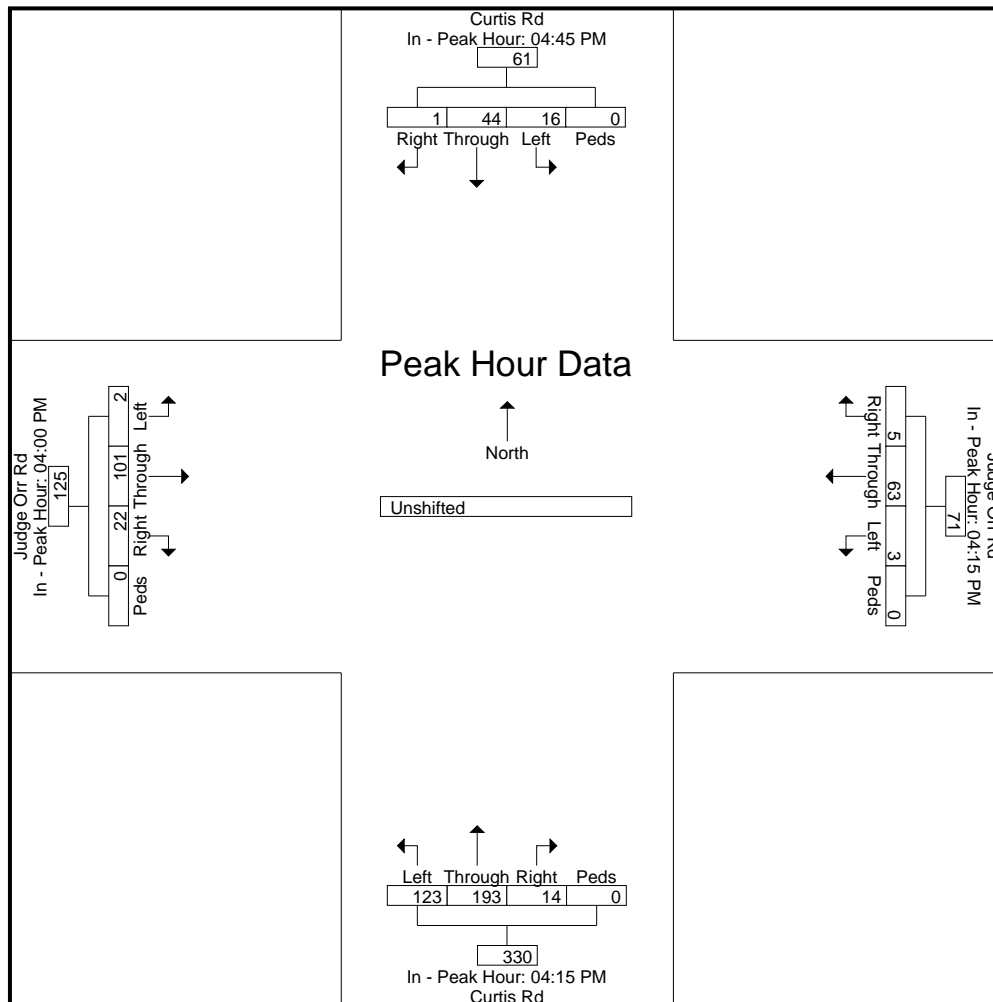
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	Curtis Rd Southbound					Judge Orr Rd Westbound					Curtis Rd Northbound					Judge Orr Rd Eastbound					
Start Time	Left	Through	Right	Peds	App. Total	Left	Through	Right	Peds	App. Total	Left	Through	Right	Peds	App. Total	Left	Through	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Each Approach Begins at:																					
	04:45 PM					04:15 PM					04:15 PM					04:00 PM					
+0 mins.	3	10	1	0	14	1	20	1	0	22	42	60	3	0	105	1	24	10	0	35	
+15 mins.	4	10	0	0	14	1	15	0	0	16	19	42	4	0	65	0	26	6	0	32	
+30 mins.	4	11	0	0	15	0	16	1	0	17	30	43	3	0	76	1	27	3	0	31	
+45 mins.	5	13	0	0	18	1	12	3	0	16	32	48	4	0	84	0	24	3	0	27	
Total Volume	16	44	1	0	61	3	63	5	0	71	123	193	14	0	330	2	101	22	0	125	
% App. Total	26.2	72.1	1.6	0		4.2	88.7	7	0		37.3	58.5	4.2	0		1.6	80.8	17.6	0		
PHF	.800	.846	.250	.000	.847	.750	.788	.417	.000	.807	.732	.804	.875	.000	.786	.500	.935	.550	.000	.893	





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719-633-2868

File Name : Hwy 24 - Stapleton Rd AM 11-18

Site Code : 184750

Start Date : 11/15/2018

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Groups Printed- Unshifted

	Hwy 24 Southbound				Stapleton Dr Westbound				Hwy 24 Northbound				Stapleton Dr Eastbound				
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Int. Total
06:30 AM	4	120	3	0	0	11	3	0	5	39	0	0	2	30	26	0	243
06:45 AM	7	123	7	0	0	12	4	0	13	55	0	0	11	25	33	0	290
Total	11	243	10	0	0	23	7	0	18	94	0	0	13	55	59	0	533
07:00 AM	9	125	8	0	1	22	4	0	24	70	0	0	12	37	33	0	345
07:15 AM	7	139	11	0	0	29	4	0	18	51	0	0	10	39	27	0	335
07:30 AM	6	115	10	0	1	24	0	0	15	48	1	0	3	28	28	0	279
07:45 AM	6	106	9	0	0	11	4	0	6	43	1	0	5	19	19	0	229
Total	28	485	38	0	2	86	12	0	63	212	2	0	30	123	107	0	1188
08:00 AM	2	74	6	0	4	11	2	0	13	66	0	0	1	10	17	0	206
08:15 AM	3	86	5	0	3	9	0	0	8	60	2	0	2	9	13	0	200
Grand Total	44	888	59	0	9	129	21	0	102	432	4	0	46	197	196	0	2127
Apprch %	4.4	89.6	6	0	5.7	81.1	13.2	0	19	80.3	0.7	0	10.5	44.9	44.6	0	
Total %	2.1	41.7	2.8	0	0.4	6.1	1	0	4.8	20.3	0.2	0	2.2	9.3	9.2	0	



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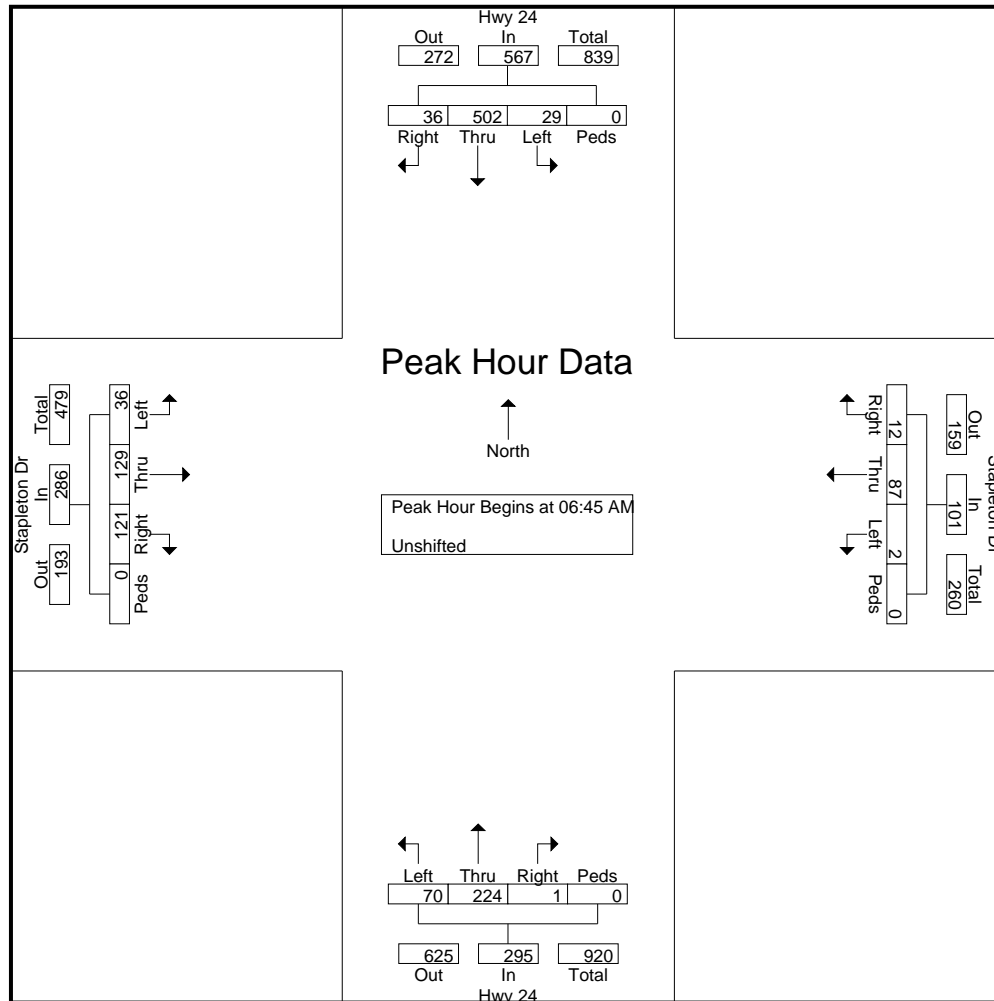
File Name : Hwy 24 - Stapleton Rd AM 11-18

Site Code : 184750

Start Date : 11/15/2018

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	Hwy 24 Southbound					Stapleton Dr Westbound					Hwy 24 Northbound					Stapleton Dr Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 06:30 AM to 08:15 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 06:45 AM																					
06:45 AM	7	123	7	0	137	0	12	4	0	16	13	55	0	0	68	11	25	33	0	69	290
07:00 AM	9	125	8	0	142	1	22	4	0	27	24	70	0	0	94	12	37	33	0	82	345
07:15 AM	7	139	11	0	157	0	29	4	0	33	18	51	0	0	69	10	39	27	0	76	335
07:30 AM	6	115	10	0	131	1	24	0	0	25	15	48	1	0	64	3	28	28	0	59	279
Total Volume	29	502	36	0	567	2	87	12	0	101	70	224	1	0	295	36	129	121	0	286	1249
% App. Total	5.1	88.5	6.3	0		2	86.1	11.9	0		23.7	75.9	0.3	0		12.6	45.1	42.3	0		
PHF	.806	.903	.818	.000	.903	.500	.750	.750	.000	.765	.729	.800	.250	.000	.785	.750	.827	.917	.000	.872	.905





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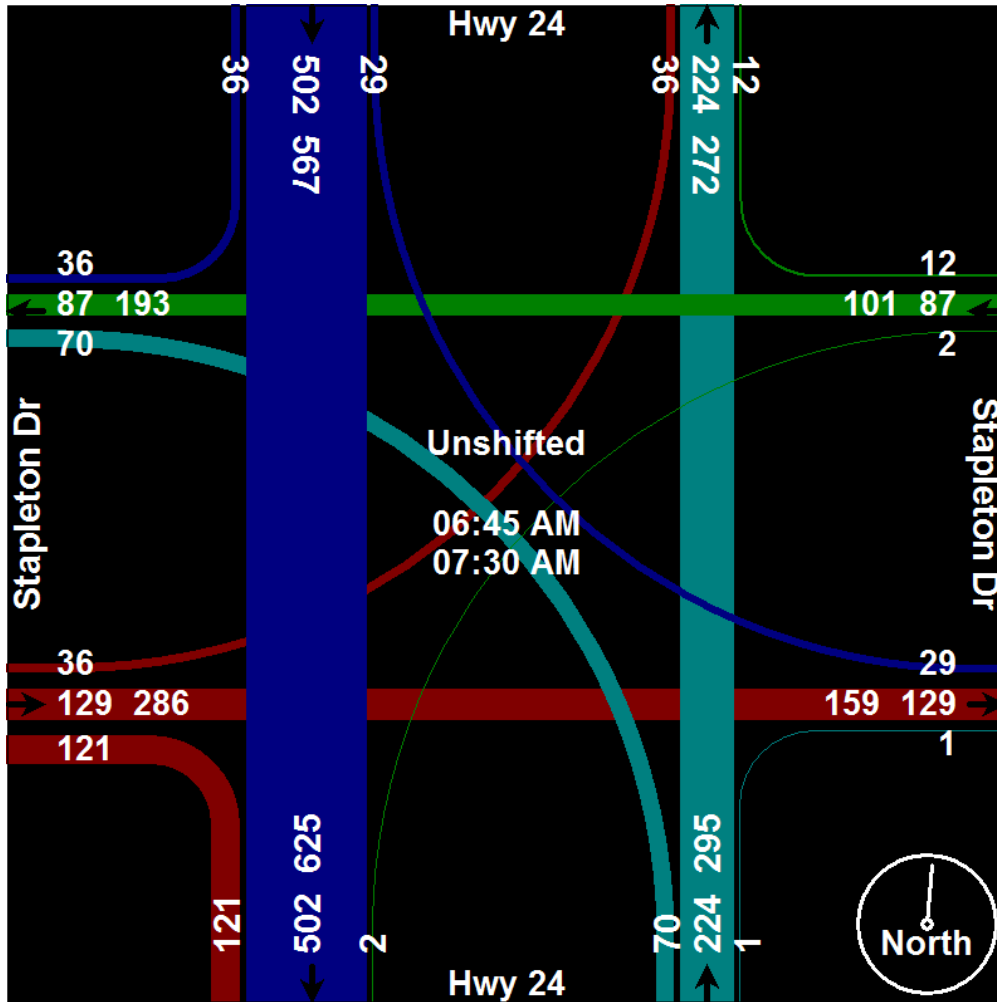
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File Name : Hwy 24 - Stapleton Rd PM 11-18

Site Code : 00184750

Start Date : 11/28/2018

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	Hwy 24 Southbound				Stapleton Rd Westbound				Hwy 24 Northbound				Stapleton Rd Eastbound				Int. Total
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	
04:00 PM	4	73	11	0	1	20	6	0	20	127	5	0	5	6	11	0	289
04:15 PM	1	73	9	0	3	31	5	0	13	100	5	1	7	5	9	0	262
04:30 PM	3	85	3	0	1	23	7	0	28	96	4	0	2	6	13	0	271
04:45 PM	4	73	9	0	1	29	7	0	32	98	6	0	5	7	14	0	285
Total	12	304	32	0	6	103	25	0	93	421	20	1	19	24	47	0	1107
05:00 PM	2	94	2	0	0	22	5	0	18	138	4	0	0	10	16	0	311
05:15 PM	1	74	7	0	2	23	9	0	29	109	7	0	7	15	13	0	296
05:30 PM	1	63	4	0	1	23	6	0	20	133	4	0	5	8	7	0	275
05:45 PM	4	55	4	0	1	15	6	0	18	136	5	0	4	8	6	0	262
Total	8	286	17	0	4	83	26	0	85	516	20	0	16	41	42	0	1144
Grand Total	20	590	49	0	10	186	51	0	178	937	40	1	35	65	89	0	2251
Apprch %	3	89.5	7.4	0	4	75.3	20.6	0	15.4	81.1	3.5	0.1	18.5	34.4	47.1	0	
Total %	0.9	26.2	2.2	0	0.4	8.3	2.3	0	7.9	41.6	1.8	0	1.6	2.9	4	0	



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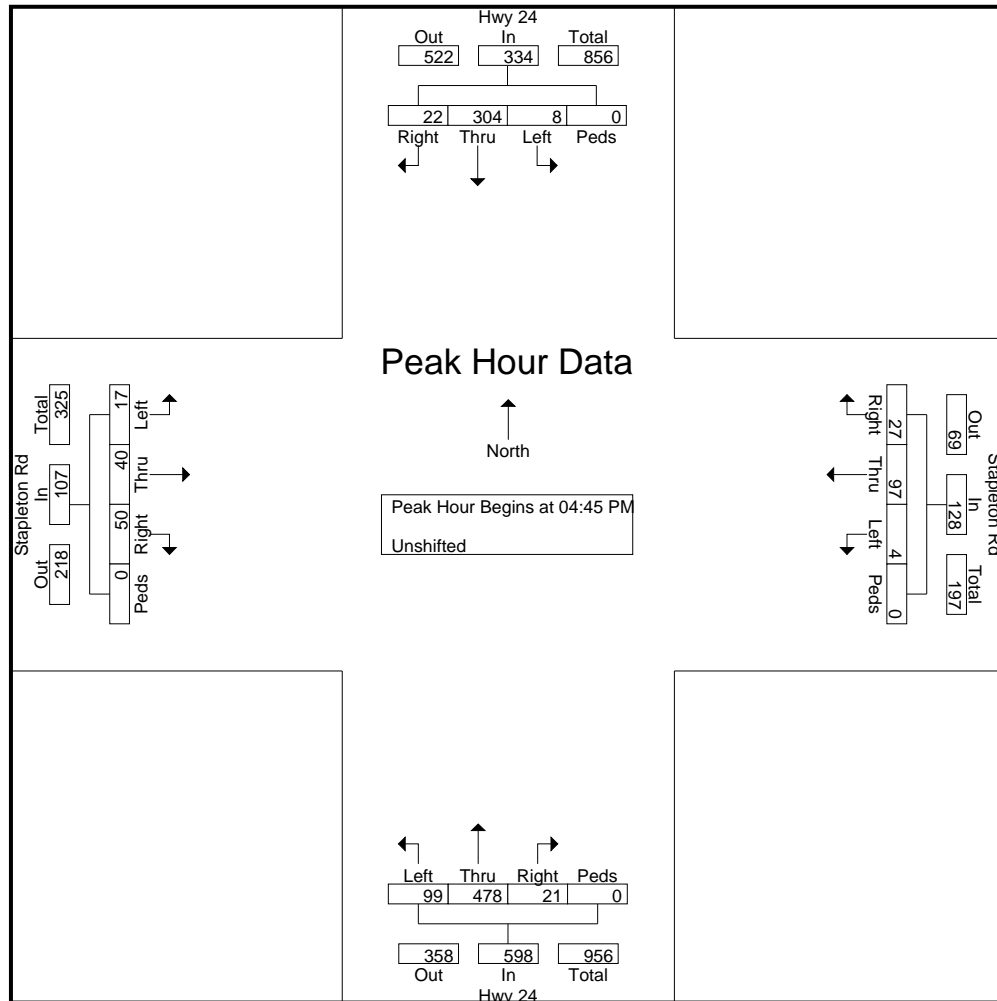
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	Hwy 24 Southbound					Stapleton Rd Westbound					Hwy 24 Northbound					Stapleton Rd Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:45 PM																					
04:45 PM	4	73	9	0	86	1	29	7	0	37	32	98	6	0	136	5	7	14	0	26	285
05:00 PM	2	94	2	0	98	0	22	5	0	27	18	138	4	0	160	0	10	16	0	26	311
05:15 PM	1	74	7	0	82	2	23	9	0	34	29	109	7	0	145	7	15	13	0	35	296
05:30 PM	1	63	4	0	68	1	23	6	0	30	20	133	4	0	157	5	8	7	0	20	275
Total Volume	8	304	22	0	334	4	97	27	0	128	99	478	21	0	598	17	40	50	0	107	1167
% App. Total	2.4	91	6.6	0		3.1	75.8	21.1	0		16.6	79.9	3.5	0		15.9	37.4	46.7	0		
PHF	.500	.809	.611	.000	.852	.500	.836	.750	.000	.865	.773	.866	.750	.000	.934	.607	.667	.781	.000	.764	.938





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