Conexus Phases 2 & 3
Preliminary PUD Plan

Traffic Impact Study

Prepared for:
Mike DeGrant
Conexus LLC
By Schuck Communities, Manager
2 North Cascade Ave, Suite 1280
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NOVEMBER 19, 2021

LSC Transportation Consultants
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LSC #S214980

CONTENTS

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November 19, 2021

Mike DeGrant
Conexus LLC
By Schuck Communities, Manager
2 North Cascade Ave, Suite 1280
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RE: Conexus Phases 2 & 3
Preliminary PUD Plan
Traffic Impact Study
Monument, Colorado
LSC #S214980

Dear Mr. DeGrant:

In response to your request, LSC Transportation Consultants, Inc. has prepared this updated traffic impact study the accompany the Preliminary PUD Plan submittal the proposed Conexus Business Park Phases 2 & 3 located in Monument, Colorado. As shown in Figure 1, the site is located east of Old Denver Road and south of 2nd Street.

REPORT CONTENTS

The report contains the following:

- An inventory of existing roadway and traffic conditions on the adjacent and nearby roadway system, 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:
  - Baptist Road/Old Denver Road
  - Beacon Lite Road/2nd Street
  - Creek Valley Circle/Old Denver Road
- Estimated current average weekday traffic (AWT) volumes on the study-area streets including Old Denver Road and Baptist Road;
- Projections of 20-year background traffic volumes on the study-area streets and intersections based on information available regarding approved or planned nearby developments;
- The proposed site land use;

- Estimates of average weekday and weekday peak-hour trip generation for half-site buildout and full buildout of the proposed development and the estimated directional distribution of site-generated vehicle trips on the area street and roadway network.
- Projected site-generated and resulting total peak-hour intersection traffic volumes at the study intersections:
    - Baptist Road/Old Denver Road
    - Old Denver Road/2nd Street
    - Old Denver Road/Site Access Points
- Level of service analysis at the study-area intersections for existing, short-, and long-term background and total traffic scenarios; and
- Short- and long-term projected intersection analysis to determine intersection traffic control, auxiliary right-/left-turn lane needs, and other recommendations.

LAND USE AND PROPOSED ACCESS PLAN

The 146-acre site, shown in Figure 1, is located east of Old Denver Road and generally south of 2nd Street. It is planned to be developed with a mix of commercial, business park, industrial and medium and high-density residential land uses. A summary of the land uses proposed is shown in Table 1 (attached).

Three full-movement site accesses are planned to Old Denver Road. The northernmost access will align with Creek Valley Circle and form a new east leg of this current T-intersection with Old Denver Road, which is approximately 920 feet south of Santa Fe Avenue and ½ mile south of 2nd Street. This intersection is approximately 1,100 feet north of Woodfield Drive. The second access will be located approximately 1,800 feet south of the north access and 700 feet south of Woodfield Drive. The spacing between the middle access and Ranchero Drive will be approximately 850 feet. The southernmost access will align with Buffalo Valley Path and form a new east leg of this current T-intersection with Old Denver Road. This intersection will be located approximately 2,150 feet south of the middle access. The site plan is shown in Figure 2.

Nearby developments include the parcel to the south of the site, which is Conexus Phase 1. The parcel south of Conexus Phase 1 is Santa Fe Park. Several new developments are planned for the area south of Baptist Road and west of Interstate 25. Also, the Willow Springs development north of Baptist Road just west of the railroad line is proceeding.

EXISTING ROADWAY AND TRAFFIC CONDITIONS

Area Roadways

The roadways in the study area are shown in Figure 1 and are described below.

- **Old Denver Road** has most recently been shown as a Major Collector on the 2016 El Paso County *Major Transportation Corridors Plan* (*MTCP*). Note: the roadway was shown as a Minor Arterial on

the Tri Lakes Planning Area Transportation Map, 1998. The roadway extends north from Baptist Road to Santa Fe Avenue and then continues north as Beacon Lite Road. Old Denver Road has one through lane in each direction and a posted speed limit of 40 miles per hour (mph) adjacent to the southern portion of the site and 35 mph adjacent to the northern portion of the site.

An upgrade to Old Denver Road is in the planning and initial concept-design stages with the Town and Triview Metropolitan District. The applicant is coordinating with the Town and Triview on this Old Denver upgrade.

- **2nd Street** is a paved two-lane Town of Monument street that extends east from Mitchell Road to State Highway 105. In the vicinity of the site, the posted speed limit on 2nd Street is 25 mph. The intersection of 2nd Street/Beacon Lite Road is all-way stop-sign controlled.

- **Baptist Road** is a Principal Arterial that extends east of Hay Creek Road to the intersection of Roller Coaster Road and Hodgen Road. Baptist Road has one through lane in each direction and a posted speed limit of 40 miles per hour (mph) between Hay Creek Road and Interstate 25. The intersection of Baptist/Old Denver was recently reconstructed as a one-lane modern roundabout.

Existing Traffic Conditions

Figure 3 shows the current morning and afternoon peak-hour traffic volumes at the following intersections:

- Baptist Road/Old Denver Road
- 2nd Street/Beacon Lite Road (Updated counts November 2021)
- Old Denver Road/Creek Valley Circle

Updated counts were completed at the intersection of 2nd Street/Beacon Lite Road in June 2021 and again in November 2021. Traffic-count reports are attached.

Existing Levels of Service

Level of service (LOS) is a quantitative measure of the level of congestion or delay at an intersection. Level of service is indicated on a scale from “A” to “F.” LOS A represents control delay of less than 10 seconds for unsignalized and signalized intersections. LOS F represents control delay of more than 50 seconds for unsignalized intersections and more than 80 seconds for signalized intersections. Table 2 shows the level of service delay ranges.

Table 2: Intersection Levels of Service

Level of Service	Signalized Intersections Average Control Delay (seconds per vehicle)	Unsignalized Intersections Average Control Delay (seconds per vehicle)(1)
A	10.0 sec or less	10.0 sec or less
B	10.1-20.0 sec	10.1-15.0 sec
C	20.1-35.0 sec	15.1-25.0 sec
D	35.1-55.0 sec	25.1-35.0 sec
E	55.1-80.0 sec	35.1-50.0 sec
F	80.1 sec or more	50.1 sec or more

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

The study area intersections were analyzed to determine the existing levels of service based on the unsignalized method of analysis procedures found in the *Highway Capacity Manual, 6th Edition* by the Transportation Research Board. Figure 3 shows the level of service analysis results. Detailed level of service reports are attached.

The intersection of 2nd Street/Beacon Lite Road is currently all-way, stop-sign controlled. As shown in Figure 3, all approaches to this intersection are currently operating at LOS D or better during the peak hours.

The intersection of Baptist Road/Old Denver Road is a one-lane modern roundabout. All approaches at this intersection are currently operating at LOS A during the peak hours.

BACKGROUND TRAFFIC

Figure 4 and Figure 5 show the projected short-term and 2040 background traffic volumes, respectively. Background traffic is the traffic estimated to be on the adjacent roadways without consideration of the proposed development. Background traffic includes existing traffic volumes plus the traffic expected to be generated by nearby existing and approved developments, but it assumes zero traffic generated by the site.

The short-term background volumes are based on the existing traffic volumes shown in Figure 3 plus additional traffic estimated to be generated by the buildout of approved developments within the vicinity of the site, including: buildout of Conexus Phase 1; Phase 1 of the Falcon Commerce Center located southwest of the intersection of Baptist Road/Old Denver Highway; the Quick Stop development to be located northwest of the of the intersection of Baptist Road/Old Denver Highway; Forest Lakes Filings 1, 2, 3, and 4 and Forest Lakes Phase 2; and buildout of about half of the Willow Springs Development.

The above procedure was followed for estimation of the short-term background traffic, rather than a use of a blanket annual percentage growth rate(s) or application of a growth "factor." The above procedure was used because aside from known, approved developments, there is minimal likelihood for general through-traffic increases (typically estimated using general growth rates) given the limited continuity of the study-area roadways (due to the limited continuity of these roadways to the west, south, and north and due to the Pike National Forest, the Air Force Academy, etc.).

The 2040 background traffic-volume estimates were based on the current traffic conditions, the expected development in the surrounding area, the *Baptist Road West Traffic Report* by Felsburg Holt & Ullevig (dated August 2013), other traffic studies completed in the area by LSC (including studies for Willow Springs Ranch, Forest Lakes, and Santa Fe Park), and traffic studies completed by other consultants including the Falcon Commerce Center TIS prepared by SM Rocha, LLC in August 2020.

The above procedure was followed for estimation of the long-term background traffic, rather than a use of a blanket annual percentage growth rate(s) or application of a growth "factor." The above procedure was used because aside from known, approved and anticipated future area developments (and planned future roadway connections such as the extension of Synthes Avenue south to Baptist Road), there is minimal likelihood for general through traffic increases (typically estimated using general growth rates) given the limited continuity of the study-area roadways (due to the limited continuity of these roadways to the west, south, and north and due to the Pike National Forest, the Air Force Academy, etc.).

TRIP GENERATION

The site is planned to be developed with a mix of commercial, business park (including light industrial), and medium & high density residential land uses. Please refer to the land-use table (attached Table 1), which shows the "conversion" of the Preliminary PUD Plan land-use designation to corresponding ITE Land Uses. ITE land uses have been used to estimate the trip generation. This report also makes some assumptions for commercial, business-park, and light industrial building square footage and the number of residential dwelling units. These are necessary for estimating trip generation, but note, the Preliminary PUD Plan designations are general in nature and are subject to change with final site plans.

Estimates of the vehicle trips expected to be generated by the site have been made using the nationally-published trip-generation rates found in *Trip Generation, 11th Edition, 2021* by the Institute of Transportation Engineers (ITE).

The total number of vehicle trips generated by the land uses has been reduced to account for the internal vehicle trips made within the site between land uses, without use of the external streets surrounding the site. Table 3 shows the number of internal trips assumed for each land use. The internal trip reduction for the commercial parcels is an estimate by LSC, based on National

Highway Cooperative Highway Research Program (NCHRP) Report 684 *Enhancing Internal Trip Capture Estimation for Mixed-Use Developments*. The results of the spreadsheet model are attached.

The total number of vehicle trips generated has also been reduced to take into account the "pass by" phenomena. A pass-by trip is made by a motorist who would already be on the adjacent roadways regardless of the proposed development, but who stops in at the site while passing by. The motorist would then continue on his or her way to a final destination in the original direction. The pass-by percentages shown in Table 2 are estimates by LSC for this site-specific situation. Estimates are based on data contained in the Trip Generation Handbook - An ITE Proposed Recommended Practice, 3rd Edition, 2017 by ITE.

Table 3 (attached) shows the trips generated by the development.

At buildout, the site could be expected to generate about 12,500 new, external vehicle-trips on the average weekday, with about half entering and half exiting in a 24-hour period. During the morning peak hour, approximately 596 vehicles would enter and 309 vehicles would exit the site. During the afternoon peak hour, approximately 497 vehicles would enter and 681 vehicles would exit the site.

TRIP DISTRIBUTION AND ASSIGNMENT

Figure 6 shows the distribution estimates for the site-generated trips. The trip distribution represents the percentages of site-generated traffic projected to be oriented to and from the major approaches to the site. The estimates are based on the following factors: the land use proposed for the site; the roadway system serving the site; the proposed access system for the site; the location of the site with respect to regional residential, employment, commercial, and activity centers; the location of the site with respect to the Town of Monument, the Tri-Lakes region, and the balance of the City of Colorado Springs metropolitan area; and the existing traffic counts.

The applicant has indicated that all trucks traveling to/from the north on Old Denver Road will be required to use the north access, while all trucks traveling to/from the south on Old Denver Road will be required to use the south access. Trucks will not be permitted to use the middle access point. This will minimize truck traffic from the site on Old Denver Road between the north and south access points (along the adjacent neighborhood frontage). Truck traffic includes all single-unit (such as box trucks) and multi-unit (tractor-trailer rigs) commercial-cargo transport and local delivery vehicles.

When the distribution percentages (from Figure 6) are applied to the buildout trip-generation estimates (from Table 3), the site-generated traffic volumes on the adjacent roadways can be determined for the buildout scenario. Figure 7 shows the projected site-generated traffic volumes for buildout.

TOTAL TRAFFIC

Short Term

Figure 8 shows the sum of the short-term background traffic (from Figure 4) plus the site-generated traffic volumes (from Figure 7). These volumes represent the short-term impacts of the development with the assumed development of half of the site.

Figure 9 show the lane geometry and traffic control assumed for the study-area intersections in the short-term analysis.

Buildout

Figure 10 shows the 2040 total traffic volumes. The volumes are the sum of the 2040 background traffic volumes (from Figure 5) plus the site-generated traffic volumes (from Figure 7).

Figure 11 show the lane geometry and traffic control assumed for the study-area intersections in the 2040 analysis.

PROJECTED LEVELS OF SERVICE

The site-access-point intersections and the study-area intersections have been analyzed to determine the projected levels of service, based on the short-term background, 2040 background, short-term total, and 2040 total traffic volumes. The intersections were analyzed, based on the unsignalized method of analysis procedures found in the *Highway Capacity Manual, 6th Edition* (*HCM*) by the Transportation Research Board. The intersection of 2nd/Beacon Lite was also analyzed as a signalized intersection using Synchro and as a modern one-lane roundabout using the roundabout method of analysis procedures found in the *HCM*. The north and south access intersections have also been analyzed as one-lane modern roundabouts. Detailed LOS reports are attached, with LOS results summarized in Figure 4, Figure 5, Figure 9, and Figure 11.

2nd Street/Beacon Lite Road

The eastbound and westbound approaches at the all-way, stop-sign-controlled intersection of 2nd/Beacon Lite are projected to operate at LOS F during the afternoon peak hour, based on the projected short-term background traffic volumes. With the addition of the site-generated traffic volumes, the northbound approach is also projected to operate at LOS F during the afternoon peak hour. During the morning peak hour, the eastbound approach is projected to operate at LOS E and the westbound approach is projected to operate at LOS F, based on the short-term total traffic volumes.

If this intersection were to be converted to traffic-signal control and if eastbound and westbound left-turn lanes and a northbound right-turn lane are added, it is projected to operate at LOS C

during the peak hours, based on the projected 2040 total traffic volumes. If this intersection is reconstructed as a modern roundabout, the intersection is expected to operate at LOS B during the morning peak hour and LOS C during the afternoon peak hour, based on the projected 2040 total traffic volumes.

Old Denver Road/Creek Valley Circle/North Site Access

If the intersection of Old Denver Road/Creek Valley Circle/North Site Access remains stop-sign controlled, the eastbound approach is projected to operate at LOS E during the afternoon peak hour and the westbound approach is projected to operate at LOS F during the afternoon peak hour, based on the projected short-term total traffic volumes. If this intersection were to be reconstructed as a modern one-lane roundabout, all approaches are projected to operate at LOS A during the peak hour through 2040.

Old Denver Road/Middle Site Access

The proposed middle site access to Old Denver Road is projected to operate at LOS D or better for all movements as a stop-sign-controlled intersection through 2040. The long-term analysis assumes Denver Road has been reconstructed with a three-lane cross section adjacent to the site (one through lane in each direction plus a center, two-way, left-turn lane).

Old Denver Road/Buffalo Valley Path/South Site Access

If the intersection of Old Denver Road/Buffalo Valley Path/South Site Access remains stop-sign controlled, the westbound approach is projected to operate at LOS F during the afternoon peak hour, based on the projected short-term total traffic volumes. If this intersection were to be reconstructed as a modern one-lane roundabout, all approaches are projected to operate at LOS A during the peak hour through 2040.

Baptist Road/Old Denver Road

The intersection of Baptist Road/Old Denver Road is currently a one-lane modern roundabout. All approaches at this intersection are projected to operate at LOS D or better during the peak hours based on the existing lane geometry and the projected short-term total traffic volumes.

- It is our understanding that this roundabout is expandable to a multi-lane roundabout if/when necessary. Expansion to two approach lanes southbound (and associated expansion to dual circulating lanes on the west and south legs) plus a separate westbound right-turn lane (or bypass lane) would maintain levels of service at C or better through 2040.

TRAFFIC-SIGNAL WARRANT ANALYSIS

2nd Street/Beacon Lite Road

The intersection of 2nd/Beacon Lite was analyzed to determine if a Four-Hour and/or Eight-Hour Vehicular-Volume Traffic-Signal Warrant threshold would be reached or exceeded based on the short-term background, short-term buildout total, 2040 background, and 2040 total traffic volumes. Tables 4 through 7 show the results of the analysis. The eight hours analyzed were from 6:30 to 7:30 a.m., 7:30 to 8:30 a.m., 11:30 a.m. to 12:30 p.m., 12:30 to 1:30 p.m., 2:00 to 3:00 p.m., 3:00 to 4:00 p.m., 4:00 to 5:00 p.m., and 5:00 to 6:00 p.m. The off-peak background and site-generated traffic volumes were assumed to occur at the same ratio to the peak-hour counts as observed during traffic counts conducted by LSC at the intersection of 2nd/Beacon Lite in November 2017.

As shown on Table 4, based on the projected short-term background traffic volumes, three of the four hours analyzed are projected to meet the thresholds for a Four-Hour Vehicular-Volume Traffic-Signal Warrant and seven of the eight hours analyzed are projected to meet the thresholds for an Eight-Hour Traffic-Signal Warrant Analysis. As shown in Table, both vehicular-volume traffic-signal warrants are anticipated to be met at the intersection of 2nd/Beacon Lite, with the addition of site-generated traffic.

CONCLUSIONS AND RECOMMENDATIONS

Trip Generation

- At buildout, the site could be expected to generate about 12,500 new, external vehicle trips on the average weekday, with about half entering and half exiting in a 24-hour period. During the morning peak hour, approximately 596 vehicles would enter and 309 vehicles would exit the site. During the afternoon peak hour, approximately 497 vehicles would enter and 681 vehicles would exit the site.

Projected Levels of Service

- Several approaches at the currently all-way, stop-sign-controlled intersection of 2nd/Beacon Lite are projected to operate at LOS F, based on the projected short-term background and short-term total traffic volumes. It should be noted that these poor levels of service are forecast to occur with or without the site-generated traffic. If this intersection were to be converted to traffic-signal control and if eastbound and westbound left-turn lane and a northbound right-turn lane are added, it is projected to operate at LOS C during the peak hours, based on the projected 2040 total traffic volumes. If this intersection is reconstructed as a modern roundabout, the intersection is expected to operate at LOS B during the morning peak and LOS C during the afternoon peak hour, based on the projected 2040 total traffic volumes.

- If the intersection of Old Denver Road/Creek Valley Circle/North Site Access remains stop-sign controlled, the eastbound approach is projected to operate at LOS E during the afternoon peak hour and the westbound approach is projected to operate at LOS F during the afternoon peak hour based on the projected short-term total traffic volumes. If this intersection were to be reconstructed as a modern one-lane roundabout all approaches are projected to operate at LOS A during the peak hour through 2040.

- The proposed middle site access to Old Denver Road is projected to operate at LOS D or better for all movements as a stop-sign-controlled intersection through 2040. The long-term analysis assumes Old Denver Road has been reconstructed with a three-lane cross section adjacent to the site (one through lane in each direction plus a center, two-way, left-turn lane).

- If the intersection of Old Denver Road/Buffalo Valley Path/South Site Access remains stop-sign controlled, the westbound approach is projected to operate at LOS F during the afternoon peak hour, based on the projected short-term total traffic volumes. If this intersection were to be reconstructed as a modern one-lane roundabout all approaches are projected to operate at LOS A during the peak hour through 2040.

- The intersection of Baptist/Old Denver is a modern one-lane roundabout. All approaches at this intersection are projected to operate at LOS D or better during the peak hours, based on the existing lane geometry and the projected short-term total traffic volumes. It is our understanding that the roundabout was designed to be expandable to a multi-lane roundabout. Expansion to two approach lanes southbound (and associated expansion to dual circulating lanes on the west and south legs) plus a separate westbound right-turn lane (or bypass lane) would maintain levels of service at C or better through 2040.

Roadway Improvements

- In the long term, multiple movements at the Baptist Road/Old Denver Road roundabout are expected to drop to LOS E or F, if it remains a single-lane roundabout. It is our understanding that this roundabout is expandable to a multi-lane roundabout if/when necessary. It is recommended that a westbound right-turn bypass lane be considered as a potential initial future improvement prior to conversion to a multi-lane roundabout. Per recent discussions with the Town and Triview, consideration should be given to a continuous northbound right-turn lane between a westbound right-turn bypass lane (on the northeast corner of the intersection) up to the first street access to the north (Santa Fe Park access). This and other modifications/improvements that may become necessary at this roundabout in the long term include:
    - Westbound to northbound right-turn bypass lane.
    - Dual southbound left-turn lanes

- The intersection of 2nd Street/Beacon Lite Road is projected to meet signal warrants and require signalization in the short-term. A potential alternative to signalizing the intersection

would be to construct a roundabout. Per recent discussions with the Town and Triview, consideration should be given to include northbound to eastbound "free-right" turns at this intersection. This would include a northbound right-turn deceleration lane, a right-turn channelizing island on the southeast corner of the intersection, and an added eastbound lane on 2nd Street between Beacon Lite Road and Highway 105/Interstate 25 southbound ramps. Other alternatives for this intersection are also under consideration.

- Based on the turning-volume threshold criteria contained in the *Colorado State Highway Access Code for NR-B roadways,* southbound left-turn lanes should be provided on Old Denver Road approaching all of the site-access points. Left-turn lanes would not be needed at the north and south access points if/when these intersections are converted to one-lane modern roundabouts as part of a Town/Triview project to upgrade Old Denver Road.

- Based on the turning-volume-threshold criteria contained in the *Colorado State Highway Access Code for NR-B roadways,* northbound right-turn lanes should be provided on Old Denver Road approaching all the site-access points. Right-turn lanes would not be needed at the north and south access points if/when these intersections are converted to one-lane modern roundabouts as part of a Town/Triview project to upgrade Old Denver Road.

- Deceleration distance for 35 mph includes 190 feet of full-width lane plus a 120-foot taper. Deceleration distance for 40 mph includes 225 feet of full-width lane plus a 145-foot taper. The left-turn lanes would need to provide sufficient storage for queued left-turning vehicles. Redirect tapers for left-turn lanes would also be required.

- The applicant has indicated that all trucks traveling to/from the north will be required to use the north access, while all trucks traveling to/from the south will be required to use the south access. This will minimize truck traffic from the site on Old Denver Road between the north and south access points (along the adjacent neighborhood frontage).

* * * * *

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

Respectfully Submitted,

LSC TRANSPORTATION CONSULTANTS, INC.

COLORADO LICENSED
JEFFREY C. HODSDON
31684
11-19-21
PROFESSIONAL ENGINEER

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

JCH/KDF:jas

Enclosures: Tables 1, 3, 4-7
NHCRP Report 684 Worksheets
Figures 1-11
Traffic Count Reports
Level of Service Report

Tables

TRANSPORTATION
CONSULTANTS, INC.

Table 1
Land Use Table
Conexus Phases 2 & 3

Preliminary PUD Plan Land Uses		Corresponding ITE Land Uses (for use in Table 3, Trip Generation)				
Preliminary PUD Plan Land Use Designations	**Acreage**	**Land Use**	**ITE Land Use Category**	**F.A.R. or DU/Acre**	**Land Use**	
TAZ-1 South Area - Residential						
MULTI-FAMILY (12-25 DU/AC)	19	Multi-family residential (low rise)	220	18	342	Dwelling Units
TOWNHOME/CLUSTER RESIDENTIAL (5-12 DU/AC)	11.7	Medium Density Residential*	210	9	105	Dwelling Units
Subtotal	30.7					
TAZ-2 Middle Area - Business Park & Residential						
TOWNHOME/CLUSTER RESIDENTIAL (5-12 DU/AC)	10.8	Medium Density Residential*	210	9	97	Dwelling Units
FLEX- OFFICE, INDUSTRIAL, WAREHOUSE/DISTRIBUTION, SHOWROOM	40.8	Business Park	770	0.26	475	KSF (Thousand square feet of building floor area)
COMMERCIAL (OR MEDIUM DENSITY RESIDENTIAL - NOT ASSUMED)	1.7					
Subtotal	53.3					
TAZ-3 North Area - Commercial						
RETAIL, HOTEL/MOTEL, MINI STORAGE, CAR/RV DEALERSHIP, COMMERCIAL (OR MED. DENSITY RESIDENTIAL- NOT ASSUMED)	21.6	Shopping Plaza (11.26 ac)	821	0.11	50	KSF (Thousand square feet of building floor area)
		Business Hotel (5 ac)	312	---	125	Hotel Rooms
		Mini Storage (5 ac)	151	---	500	Storage Units
Total (not including detention, open space etc.)	105.6					

* Medium Density Residential - Estimated using ITE Land use 210 (Single Family Detached Housing)

Source: LSC Transportation Consultants, Inc *November-21*

Table 3
Trip Generation Estimate
CoNexus 2 & 3

Land Use Code	Land Use Description	Trip Generation Units	Trip Generation Rates [1] Average Weekday Traffic[5]	Morning Peak Hour In	Morning Peak Hour Out	Afternoon Peak Hour In	Afternoon Peak Hour Out	Total Trips Generated Average Weekday Traffic	Morning Peak Hour In	Morning Peak Hour Out	Afternoon Peak Hour In	Afternoon Peak Hour Out	Internal Trips Generated[2] Average Weekday Traffic	Morning Peak Hour In	Morning Peak Hour Out	Afternoon Peak Hour In	Afternoon Peak Hour Out	External Trips Generated Average Weekday Traffic	Morning Peak Hour In	Morning Peak Hour Out	Afternoon Peak Hour In	Afternoon Peak Hour Out	Pass-By Trips [3]	New External Trips Generated Average Weekday Traffic
TAZ-1 (South Area - Residential)																								
220	Multi-Family	342 DU	6.74	0.10	0.30	0.32	0.19	2,305	33	104	110	65	72	1	3	2	4	2,233	32	101	108	61	0%	2,233
210	Medium Density Residential*	105 DU	9.43	0.18	0.52	0.59	0.35	990	19	54	62	37	31	0	2	1	3	959	19	52	61	34	0%	959
						TAZ 1 Subtotal		**3,295**	**52**	**158**	**172**	**102**	**103**	**1**	**5**	**3**	**7**	**3,192**	**51**	**153**	**169**	**95**		**3,192**
TAZ-2 Business Park/Middle Area																								
770	Business Park	475 KSF	12.13	1.06	0.19	0.31	0.90	5,760	503	89	149	425	321	29	17	8	11	5,439	474	72	141	414	0%	5,439
210	Medium Density Residential*	97 DU	9.43	0.18	0.52	0.59	0.35	915	18	50	57	34	28	0	1	1	2	887	18	49	56	32	0%	887
						TAZ 2 Subtotal		**6,675**	**521**	**139**	**206**	**459**	**349**	**29**	**18**	**9**	**13**	**6,326**	**492**	**121**	**197**	**446**		**6,326**
TAZ-3 North Area (commercial)																								
821	Shopping Plaza (40-150KSF)[4]	50 KSF[5]	67.52	1.07	0.66	2.54	2.65	3,376	54	33	127	132	546	21	11	14	10	2,830	33	22	113	122	10%	2,547
312	Business Hotel	125 rooms	4.11	0.14	0.22	0.17	0.14	514	17	27	21	17	169	0	17	7	3	345	17	10	14	14	0%	345
151	Mini-Storage	5 HSU[6]	18.04	0.54	0.52	0.77	0.77	90	3	3	4	4	0	0	0	0	0	90	3	3	4	4	0%	90
						TAZ 3 Subtotal		**3,980**	**74**	**63**	**152**	**153**	**715**	**21**	**28**	**21**	**13**	**3,265**	**53**	**35**	**131**	**140**		**2,982**
						Total Trip Generation Estimate		***13,950***	***647***	***360***	***530***	***714***	***1,167***	***51***	***51***	***33***	***33***	***12,783***	***596***	***309***	***497***	***681***		***12,500***

Notes:
(1) Source: "Trip Generation, 11th Edition, 2021" by the Institute of Transportation Engineers (ITE)
(2) See attached NCHRP 684 Internal Trip Capture Estimate Tool Sheets
(3) Source: "Trip Generation Handbook - An ITE Proposed Recommended Practice, Third Edition September 2017" by ITE
(4) NO Supermarket assumed for Shopping Plaza
(5) KSF = one thousand square feet of floor space, DU = dwelling unit
(6) HSU = Storage Units (100s)
* Medium Density Residential - Estimated using ITE Land use 210 (Single Family Detached Housing)

Source: LSC Transportation Consultants, Inc. *Nov-21*

Table 4
Signal Warrant Analysis 2nd/Beacon Lite
Short-Term Background

Start	End	Major Street Volume	Minor Street Volume	4-Hour Warrant Threshold Met?	8-Hour Warrant Threshold Met?
6:30	7:30	603	194	No	Yes
7:30	8:30	807	171	Yes	Yes
11:30	12:30	683	94	No	No
12:30	13:30	672	138	No	Yes
14:00	15:00	721	153	No	Yes
15:00	16:00	824	140	No	Yes
16:00	17:00	894	190	Yes	Yes
17:00	18:00	914	244	Yes	Yes
# of hours meeting respective warrant thresholds/hours required to satisfy the warrant (warrant satisfied?)				***3 / 4 (No)***	***7 / 8 (No)***

Source: LSC Transportation Consultants, Inc.

Table 5
Signal Warrant Analysis 2nd/Beacon Lite
Short Term Total Traffic

Start	End	Major Street Volume	Minor Street Volume	4-Hour Warrant Threshold Met?	8-Hour Warrant Threshold Met?
6:30	7:30	580	276	Yes	Yes
7:30	8:30	784	237	Yes	Yes
11:30	12:30	590	197	No	Yes
12:30	13:30	602	249	Yes	Yes
14:00	15:00	642	357	Yes	Yes
15:00	16:00	774	285	Yes	Yes
16:00	17:00	851	370	Yes	Yes
17:00	18:00	928	532	Yes	Yes
# of hours meeting respective warrant thresholds/hours required to satisfy the warrant (warrant satisfied?)				***7 / 4 (Yes)***	***8 / 8 (Yes)***

Source: LSC Transportation Consultants, Inc.

Table 6
Signal Warrant Analysis 2nd/Beacon Lite
2040 Background

Start	End	Major Street Volume	Minor Street Volume	4-Hour Warrant Threshold Met?	8-Hour Warrant Threshold Met?
6:30	7:30	772	213	Yes	Yes
7:30	8:30	1032	190	Yes	Yes
11:30	12:30	845	121	No	Yes
12:30	13:30	831	172	Yes	Yes
14:00	15:00	899	201	Yes	Yes
15:00	16:00	1024	178	Yes	Yes
16:00	17:00	1112	241	Yes	Yes
17:00	18:00	1132	315	Yes	Yes
# of hours meeting respective warrant thresholds/hours required to satisfy the warrant (warrant satisfied?)				***7 / 4 (Yes)***	***8 / 8 (Yes)***

Source: LSC Transportation Consultants, Inc.

Table 7
Signal Warrant Analysis 2nd/Beacon Lite
2040 Total Traffic

Start	End	Major Street Volume	Minor Street Volume	4-Hour Warrant Threshold Met?	8-Hour Warrant Threshold Met?
6:30	7:30	879	343	Yes	Yes
7:30	8:30	1178	285	Yes	Yes
11:30	12:30	909	240	Yes	Yes
12:30	13:30	912	309	Yes	Yes
14:00	15:00	978	429	Yes	Yes
15:00	16:00	1145	346	Yes	Yes
16:00	17:00	1272	458	Yes	Yes
17:00	18:00	1352	646	Yes	Yes
# of hours meeting respective warrant thresholds/hours required to satisfy the warrant (warrant satisfied?)				***8 / 4 (Yes)***	***8 / 8 (Yes)***

Source: LSC Transportation Consultants, Inc.

NCHRP Report 684 Internal Trip Capture Estimation Tool

TRANSPORTATION
CONSULTANTS, INC.

NCHRP 684 Internal Trip Capture Estimation Tool			
Project Name:	CoNexus 2 & 3	**Organization:**	LSC Transportation Consultants, Inc.
Project Location:	Monument, CO	**Performed By:**	KDF
Scenario Description:	Buildout	**Date:**	11/18/2021
Analysis Year:	2040	**Checked By:**	
Analysis Period:	**AM Street Peak Hour**	**Date:**	

Table 1-A: Base Vehicle-Trip Generation Estimates (Single-Use Site Estimate)

Land Use	Development Data (*For Information Only*)			Estimated Vehicle-Trips[3]		
	ITE LUCs[1]	Quantity	Units	Total	Entering	Exiting
Office				592	503	89
Retail				87	54	33
Restaurant				0	0	0
Cinema/Entertainment				0	0	0
Residential				278	70	208
Hotel				44	17	27
All Other Land Uses[2]				6	3	3
				1,007	647	360

Table 2-A: Mode Split and Vehicle Occupancy Estimates

Land Use	Entering Trips			Exiting Trips		
	Veh. Occ.[4]	% Transit	% Non-Motorized	Veh. Occ.[4]	% Transit	% Non-Motorized
Office						
Retail						
Restaurant						
Cinema/Entertainment						
Residential						
Hotel						
All Other Land Uses[2]						

Table 3-A: Average Land Use Interchange Distances (Feet Walking Distance)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office						
Retail						
Restaurant						
Cinema/Entertainment						
Residential						
Hotel						

Table 4-A: Internal Person-Trip Origin-Destination Matrix*

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		17	0	0	0	0
Retail	10		0	0	1	0
Restaurant	0	0		0	0	0
Cinema/Entertainment	0	0	0		0	0
Residential	4	2	0	0		0
Hotel	15	2	0	0	0	

Table 5-A: Computations Summary

	Total	Entering	Exiting
All Person-Trips	1,007	647	360
Internal Capture Percentage	10%	8%	14%
External Vehicle-Trips[5]	905	596	309
External Transit-Trips[6]	0	0	0
External Non-Motorized Trips[6]	0	0	0

Table 6-A: Internal Trip Capture Percentages by Land Use

Land Use	Entering Trips	Exiting Trips
Office	6%	19%
Retail	39%	33%
Restaurant	N/A	N/A
Cinema/Entertainment	N/A	N/A
Residential	1%	3%
Hotel	0%	63%

[1]Land Use Codes (LUCs) from *Trip Generation Manual*, published by the Institute of Transportation Engineers.

[2]Total estimate for all other land uses at mixed-use development site is not subject to internal trip capture computations in this estimator.

[3]Enter trips assuming no transit or non-motorized trips (as assumed in ITE *Trip Generation Manual*).

[4]Enter vehicle occupancy assumed in Table 1-A vehicle trips. If vehicle occupancy changes for proposed mixed-use project, manual adjustments must be made to Tables 5-A, 9-A (O and D). Enter transit, non-motorized percentages that will result with proposed mixed-use project complete.

[5]Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-A.

[6]Person-Trips

*Indicates computation that has been rounded to the nearest whole number.

Estimation Tool Developed by the Texas A&M Transportation Institute - Version 2013.1

Project Name:	CoNexus 2 & 3
Analysis Period:	**AM Street Peak Hour**

Table 7-A: Conversion of Vehicle-Trip Ends to Person-Trip Ends

Land Use	Table 7-A (D): Entering Trips			Table 7-A (O): Exiting Trips		
	Veh. Occ.	Vehicle-Trips	Person-Trips*	Veh. Occ.	Vehicle-Trips	Person-Trips*
Office	1.00	503	503	1.00	89	89
Retail	1.00	54	54	1.00	33	33
Restaurant	1.00	0	0	1.00	0	0
Cinema/Entertainment	1.00	0	0	1.00	0	0
Residential	1.00	70	70	1.00	208	208
Hotel	1.00	17	17	1.00	27	27

Table 8-A (O): Internal Person-Trip Origin-Destination Matrix (Computed at Origin)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		25	56	0	1	0
Retail	10		4	0	5	0
Restaurant	0	0		0	0	0
Cinema/Entertainment	0	0	0		0	0
Residential	4	2	42	0		0
Hotel	20	4	2	0	0	

Table 8-A (D): Internal Person-Trip Origin-Destination Matrix (Computed at Destination)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		17	0	0	0	0
Retail	20		0	0	1	0
Restaurant	70	4		0	4	1
Cinema/Entertainment	0	0	0		0	0
Residential	15	9	0	0		0
Hotel	15	2	0	0	0	

Table 9-A (D): Internal and External Trips Summary (Entering Trips)

Destination Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles[1]	Transit[2]	Non-Motorized[2]
Office	29	474	503	474	0	0
Retail	21	33	54	33	0	0
Restaurant	0	0	0	0	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	1	69	70	69	0	0
Hotel	0	17	17	17	0	0
All Other Land Uses[3]	0	3	3	3	0	0

Table 9-A (O): Internal and External Trips Summary (Exiting Trips)

Origin Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles[1]	Transit[2]	Non-Motorized[2]
Office	17	72	89	72	0	0
Retail	11	22	33	22	0	0
Restaurant	0	0	0	0	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	6	202	208	202	0	0
Hotel	17	10	27	10	0	0
All Other Land Uses[3]	0	3	3	3	0	0

[1]Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-A

[2]Person-Trips

[3]Total estimate for all other land uses at mixed-use development site is not subject to internal trip capture computations in this estimator

*Indicates computation that has been rounded to the nearest whole number.

NCHRP 684 Internal Trip Capture Estimation Tool			
Project Name:	CoNexus 2 & 3	**Organization:**	LSC Transportation Consultants, Inc.
Project Location:	Monument, CO	**Performed By:**	KDF
Scenario Description:	Buildout	**Date:**	11/18/2021
Analysis Year:	2040	**Checked By:**	
Analysis Period:	**PM Street Peak Hour**	**Date:**	

Table 1-P: Base Vehicle-Trip Generation Estimates (Single-Use Site Estimate)

Land Use	Development Data (*For Information Only*)			Estimated Vehicle-Trips[3]		
	ITE LUCs[1]	Quantity	Units	Total	Entering	Exiting
Office				574	149	425
Retail				259	127	132
Restaurant				0	0	0
Cinema/Entertainment				0	0	0
Residential				365	229	136
Hotel				38	21	17
All Other Land Uses[2]				8	4	4
				1,244	530	714

Table 2-P: Mode Split and Vehicle Occupancy Estimates

Land Use	Entering Trips			Exiting Trips		
	Veh. Occ.[4]	% Transit	% Non-Motorized	Veh. Occ.[4]	% Transit	% Non-Motorized
Office						
Retail						
Restaurant						
Cinema/Entertainment						
Residential						
Hotel						
All Other Land Uses[2]						

Table 3-P: Average Land Use Interchange Distances (Feet Walking Distance)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office					5280	
Retail					5280	
Restaurant						
Cinema/Entertainment						
Residential		5280				
Hotel					5280	

Table 4-P: Internal Person-Trip Origin-Destination Matrix*

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		10	0	0	1	0
Retail	3		0	0	3	4
Restaurant	0	0		0	0	0
Cinema/Entertainment	0	0	0		0	0
Residential	5	1	0	0		3
Hotel	0	3	0	0	0	

Table 5-P: Computations Summary

	Total	Entering	Exiting
All Person-Trips	1,244	530	714
Internal Capture Percentage	5%	6%	5%
External Vehicle-Trips[5]	1,178	497	681
External Transit-Trips[6]	0	0	0
External Non-Motorized Trips[6]	0	0	0

Table 6-P: Internal Trip Capture Percentages by Land Use

Land Use	Entering Trips	Exiting Trips
Office	5%	3%
Retail	11%	8%
Restaurant	N/A	N/A
Cinema/Entertainment	N/A	N/A
Residential	2%	7%
Hotel	33%	18%

[1]Land Use Codes (LUCs) from *Trip Generation Manual*, published by the Institute of Transportation Engineers.

[2]Total estimate for all other land uses at mixed-use development site is not subject to internal trip capture computations in this estimator.

[3]Enter trips assuming no transit or non-motorized trips (as assumed in ITE *Trip Generation Manual*).

[4]Enter vehicle occupancy assumed in Table 1-P vehicle trips. If vehicle occupancy changes for proposed mixed-use project, manual adjustments must be made to Tables 5-P, 9-P (O and D). Enter transit, non-motorized percentages that will result with proposed mixed-use project complete.

[5]Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-P.

[6]Person-Trips

*Indicates computation that has been rounded to the nearest whole number.

Estimation Tool Developed by the Texas A&M Transportation Institute - Version 2013.1

Project Name:	CoNexus 2 & 3
Analysis Period:	**PM Street Peak Hour**

Table 7-P: Conversion of Vehicle-Trip Ends to Person-Trip Ends

Land Use	Table 7-P (D): Entering Trips			Table 7-P (O): Exiting Trips		
	Veh. Occ.	Vehicle-Trips	Person-Trips*	Veh. Occ.	Vehicle-Trips	Person-Trips*
Office	1.00	149	149	1.00	425	425
Retail	1.00	127	127	1.00	132	132
Restaurant	1.00	0	0	1.00	0	0
Cinema/Entertainment	1.00	0	0	1.00	0	0
Residential	1.00	229	229	1.00	136	136
Hotel	1.00	21	21	1.00	17	17

Table 8-P (O): Internal Person-Trip Origin-Destination Matrix (Computed at Origin)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		85	17	0	1	0
Retail	3		38	5	3	7
Restaurant	0	0		0	0	0
Cinema/Entertainment	0	0	0		0	0
Residential	5	6	29	0		4
Hotel	0	3	12	0	0	

Table 8-P (D): Internal Person-Trip Origin-Destination Matrix (Computed at Destination)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		10	0	0	9	0
Retail	46		0	0	105	4
Restaurant	45	64		0	37	15
Cinema/Entertainment	9	5	0		9	0
Residential	85	1	0	0		3
Hotel	0	3	0	0	0	

Table 9-P (D): Internal and External Trips Summary (Entering Trips)

Destination Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles[1]	Transit[2]	Non-Motorized[2]
Office	8	141	149	141	0	0
Retail	14	113	127	113	0	0
Restaurant	0	0	0	0	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	4	225	229	225	0	0
Hotel	7	14	21	14	0	0
All Other Land Uses[3]	0	4	4	4	0	0

Table 9-P (O): Internal and External Trips Summary (Exiting Trips)

Origin Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles[1]	Transit[2]	Non-Motorized[2]
Office	11	414	425	414	0	0
Retail	10	122	132	122	0	0
Restaurant	0	0	0	0	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	9	127	136	127	0	0
Hotel	3	14	17	14	0	0
All Other Land Uses[3]	0	4	4	4	0	0

[1]Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-P

[2]Person-Trips

[3]Total estimate for all other land uses at mixed-use development site is not subject to internal trip capture computations in this estimator

*Indicates computation that has been rounded to the nearest whole number.

Figures

TRANSPORTATION
CONSULTANTS, INC.

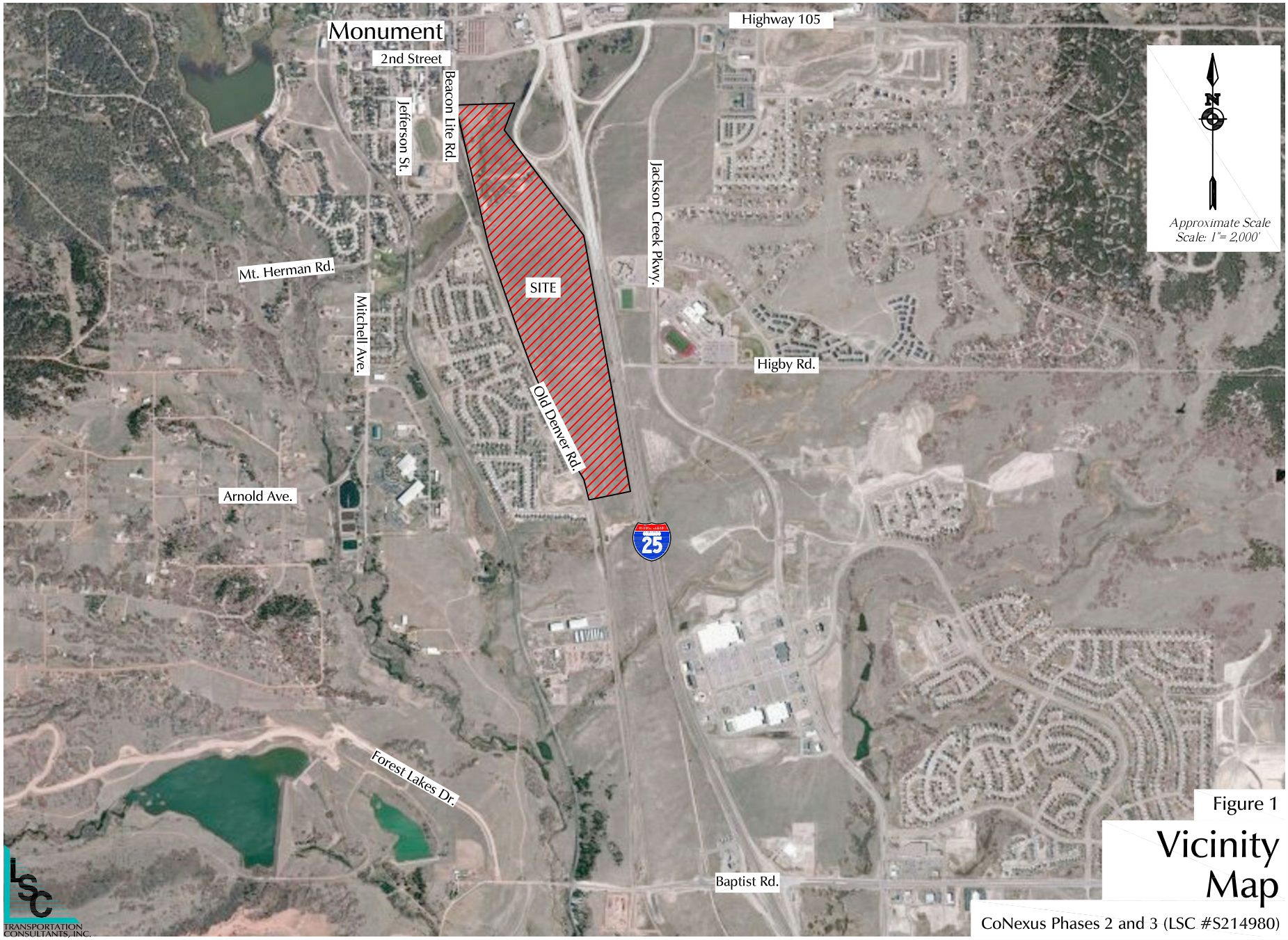
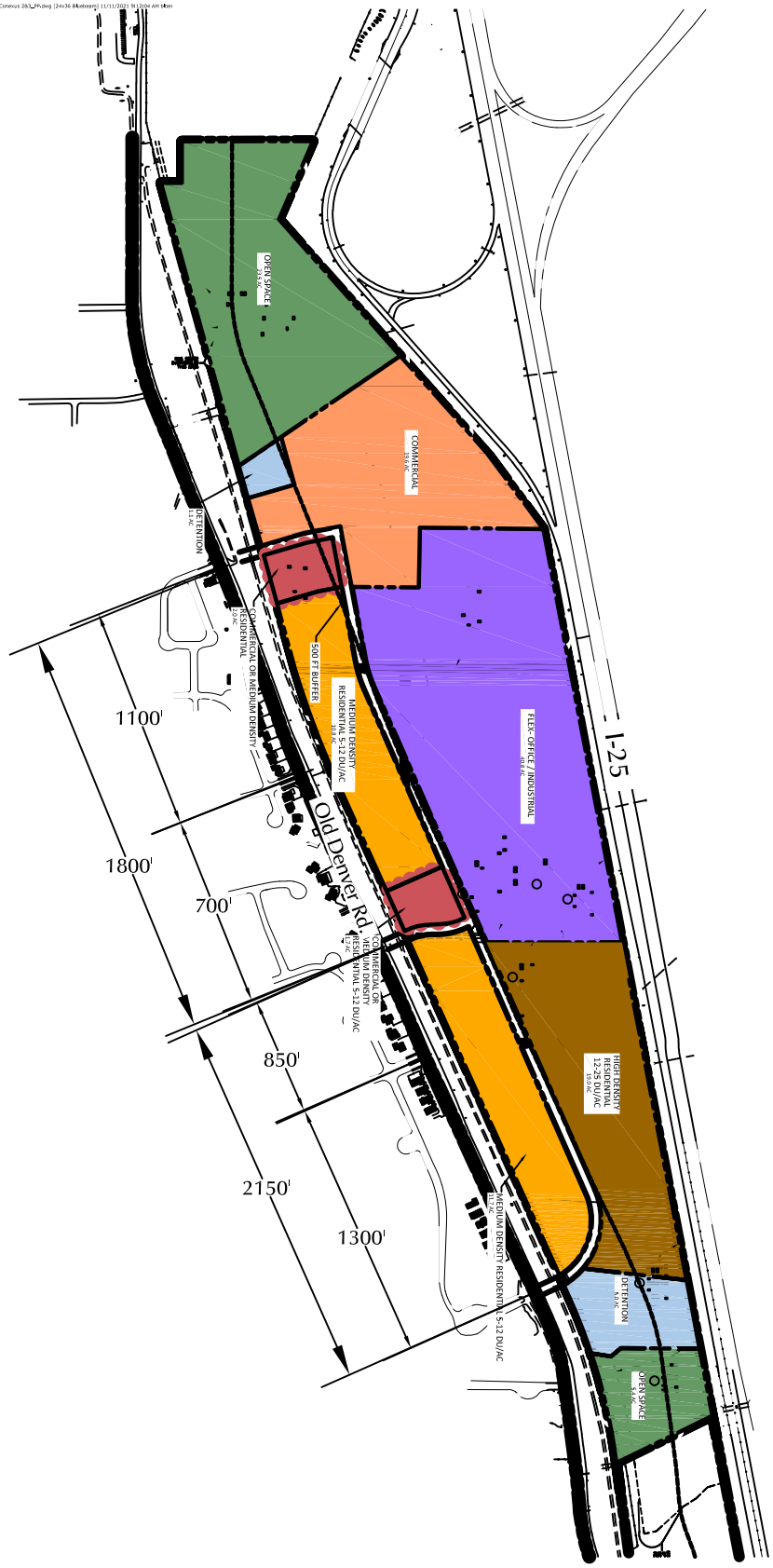


Figure 1

Vicinity Map

CoNexus Phases 2 and 3 (LSC #S214980)



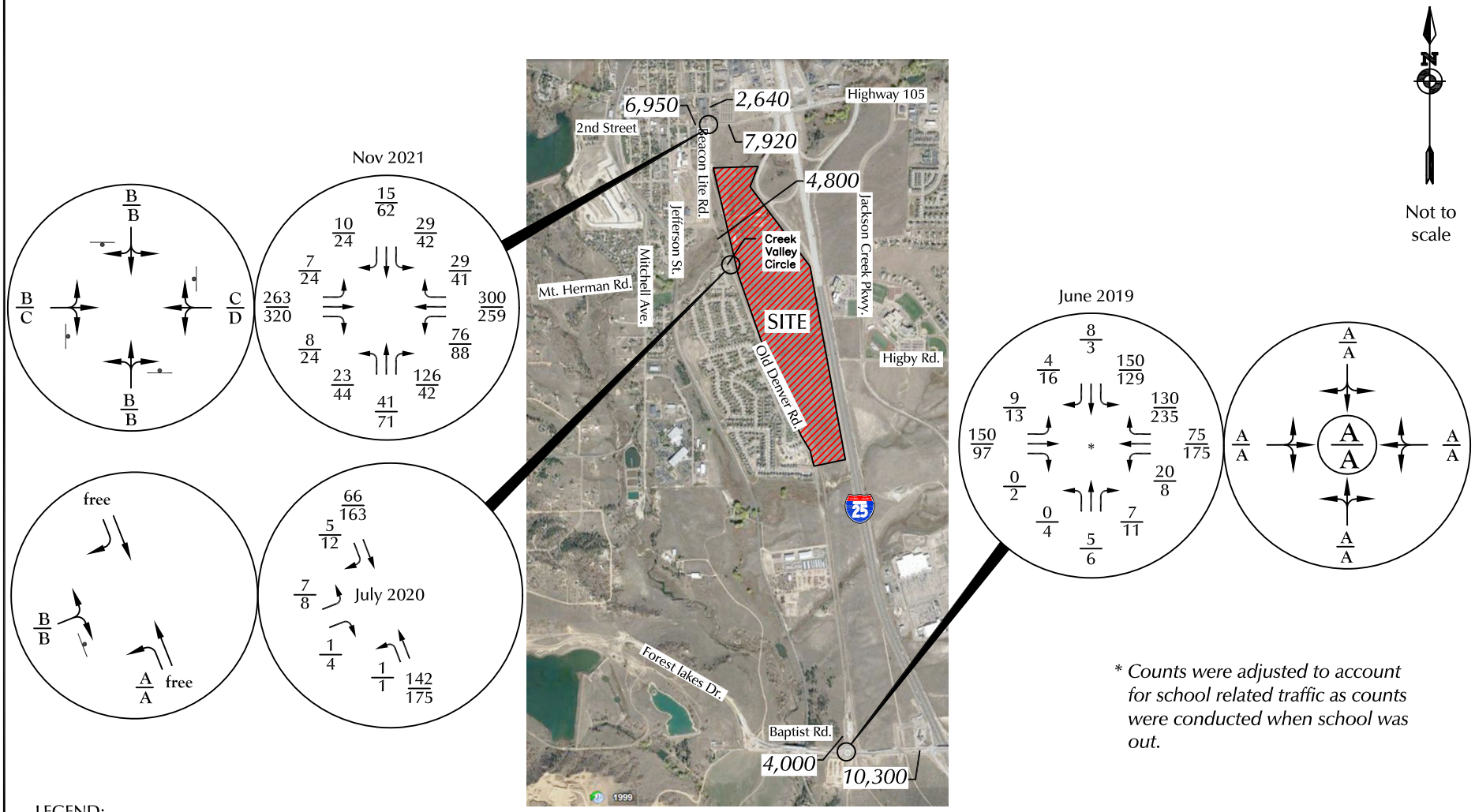
Not to scale

Figure 2

Site Plan

CoNexus Phases 2 and 3 (LSC #S214980)

LSC TRANSPORTATION CONSULTANTS, INC.



* *Counts were adjusted to account for school related traffic as counts were conducted when school was out.*

LEGEND:

= Stop Sign

= Modern Roundabout

$\frac{XX}{XX}$ = $\frac{\text{AM Weekday Peak-Hour Traffic (vehicles per hour)}}{\text{PM Weekday Peak-Hour Traffic (vehicles per hour)}}$

$\frac{A}{B}$ = $\frac{\text{AM Individual Movement Peak-Hour Level of Service}}{\text{PM Individual Movement Peak-Hour Level of Service}}$

XXX = Average Weekday Traffic (vehicles per day)

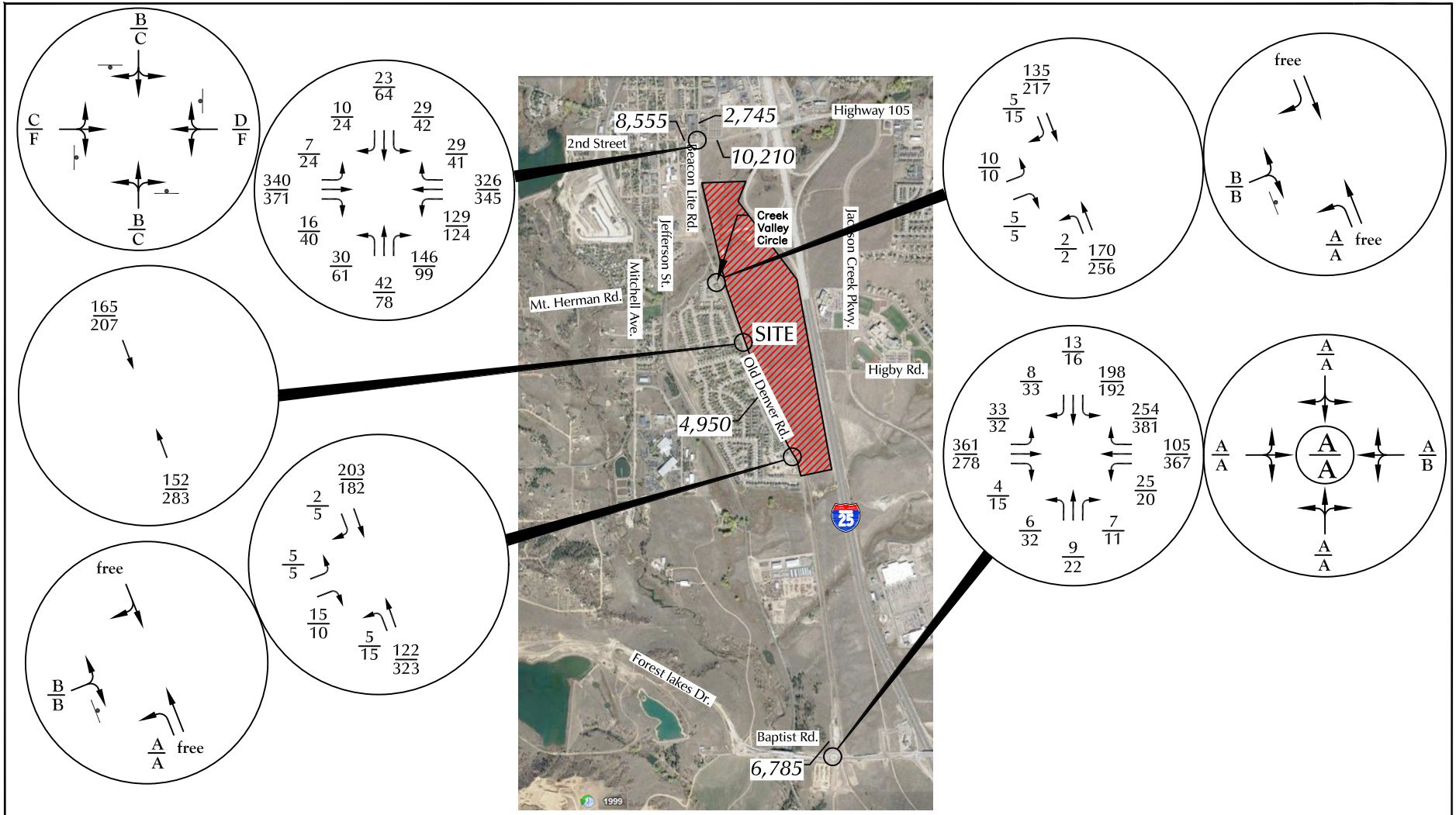
Based on counts by LSC conducted between June 2019 and June 2021

LSC TRANSPORTATION CONSULTANTS, INC.

Figure 3

Existing Traffic, Lane Geometry, Traffic Control and Level of Service

CoNexus Phases 2 and 3 (LSC #S214980)



LEGEND:

= Stop Sign

= Modern Roundabout

$\frac{XX}{XX}$ = $\frac{\text{AM Weekday Peak-Hour Traffic (vehicles per hour)}}{\text{PM Weekday Peak-Hour Traffic (vehicles per hour)}}$

$\frac{A}{B}$ = $\frac{\text{AM Individual Movement Peak-Hour Level of Service}}{\text{PM Individual Movement Peak-Hour Level of Service}}$

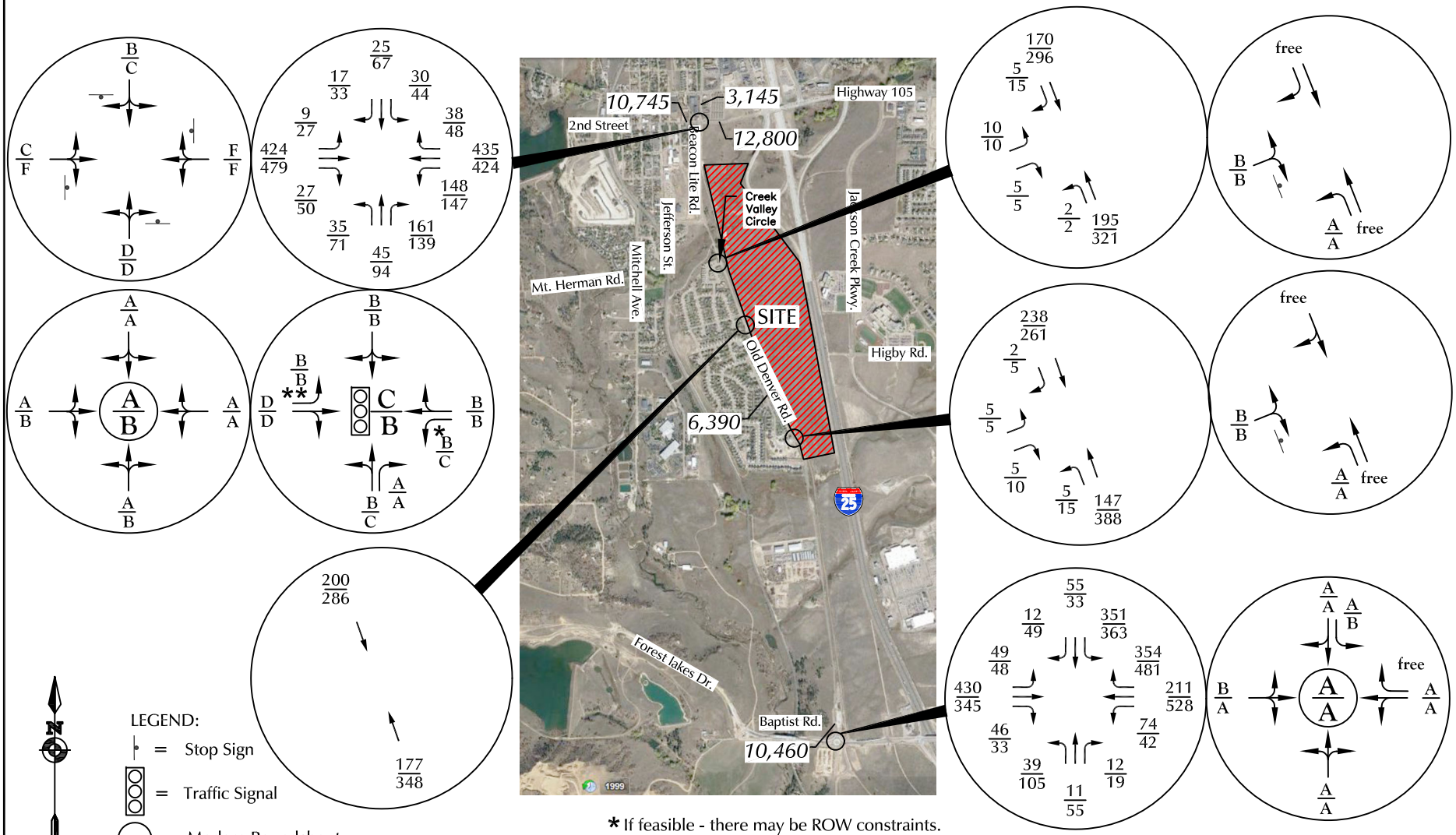
XXX = Average Weekday Traffic (vehicles per day)

LSC TRANSPORTATION CONSULTANTS, INC.

Figure 4

Short-Term Background Traffic, Lane Geometry, Traffic Control, and Level of Service

CoNexus Phases 2 and 3 (LSC #S214980)



* If feasible - there may be ROW constraints.

** Redirect tapers potentially combined with a short left-turn bay to match a potential westbound left turn lane (if feasible - there may be ROW constraints).

Figure 5

Year 2040 Background Traffic, Lane Geometry, Traffic Control and Level of Service

CoNexus Phases 2 and 3 (LSC #S214980)

Not to scale

*Traffic split between Santa Fe Avenue and 2nd Street

LEGEND:

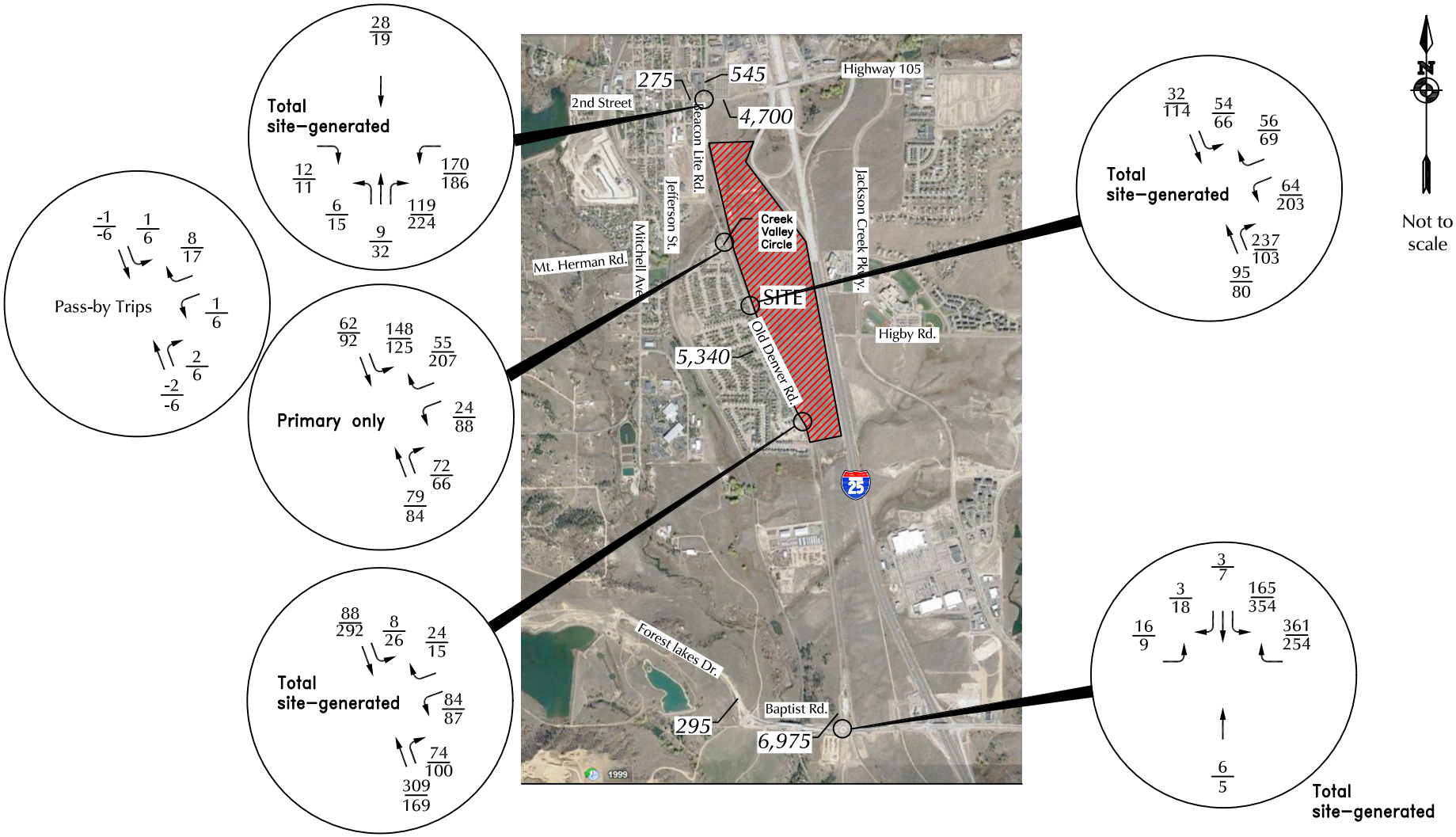
$$\frac{XX\%}{XX\%}{}_{XX\%} = \frac{\text{Percent Commercial Directional Distribution}}{\text{Percent Business Park Directional Distribution}}{}_{\text{Percent Residential and Hotel Directional Distribution}}$$

LSC TRANSPORTATION CONSULTANTS, INC.

Figure 6

Directional Distribution of Site-Generated Traffic

CoNexus Phases 2 and 3 (LSC #S214980)



LEGEND:

$\frac{XX}{XX}$ = AM Weekday Peak-Hour Traffic (vehicles per hour) / PM Weekday Peak-Hour Traffic (vehicles per hour)

XXX = Average Weekday Traffic (vehicles per day)

LSC TRANSPORTATION CONSULTANTS, INC.

Figure 7

Assignment of Full-Buildout Site-Generated Traffic

CoNexus Phases 2 and 3 (LSC #S214980)

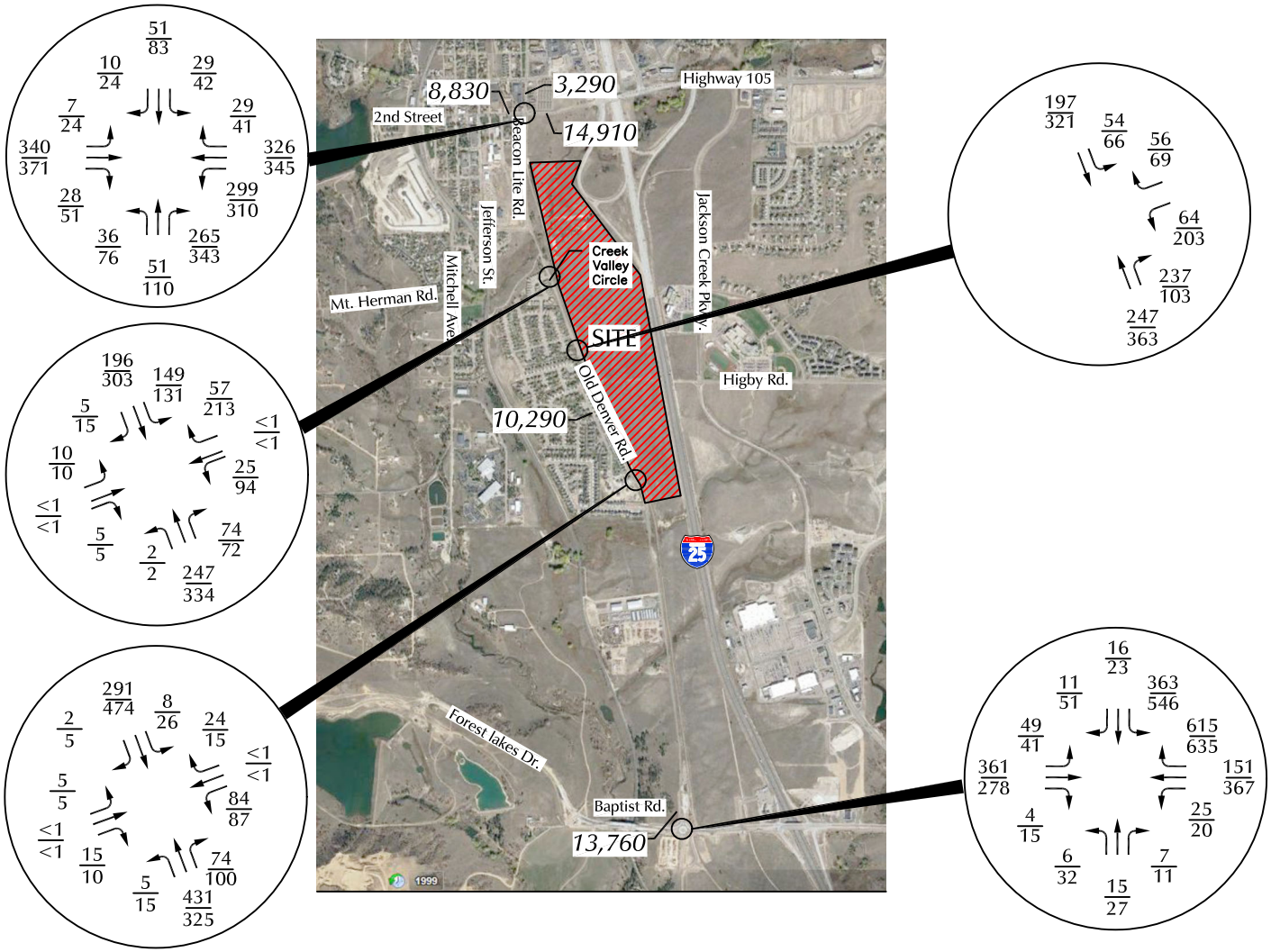


Figure 8

Short-Term Background Plus Site-Generated Traffic Volumes

CoNexus Phases 2 and 3 (LSC #S214980)

LEGEND:

$\frac{XX}{XX}$ = AM Weekday Peak-Hour Traffic (vehicles per hour) / PM Weekday Peak-Hour Traffic (vehicles per hour)

XXX = Average Weekday Traffic (vehicles per day)

LSC TRANSPORTATION CONSULTANTS, INC.

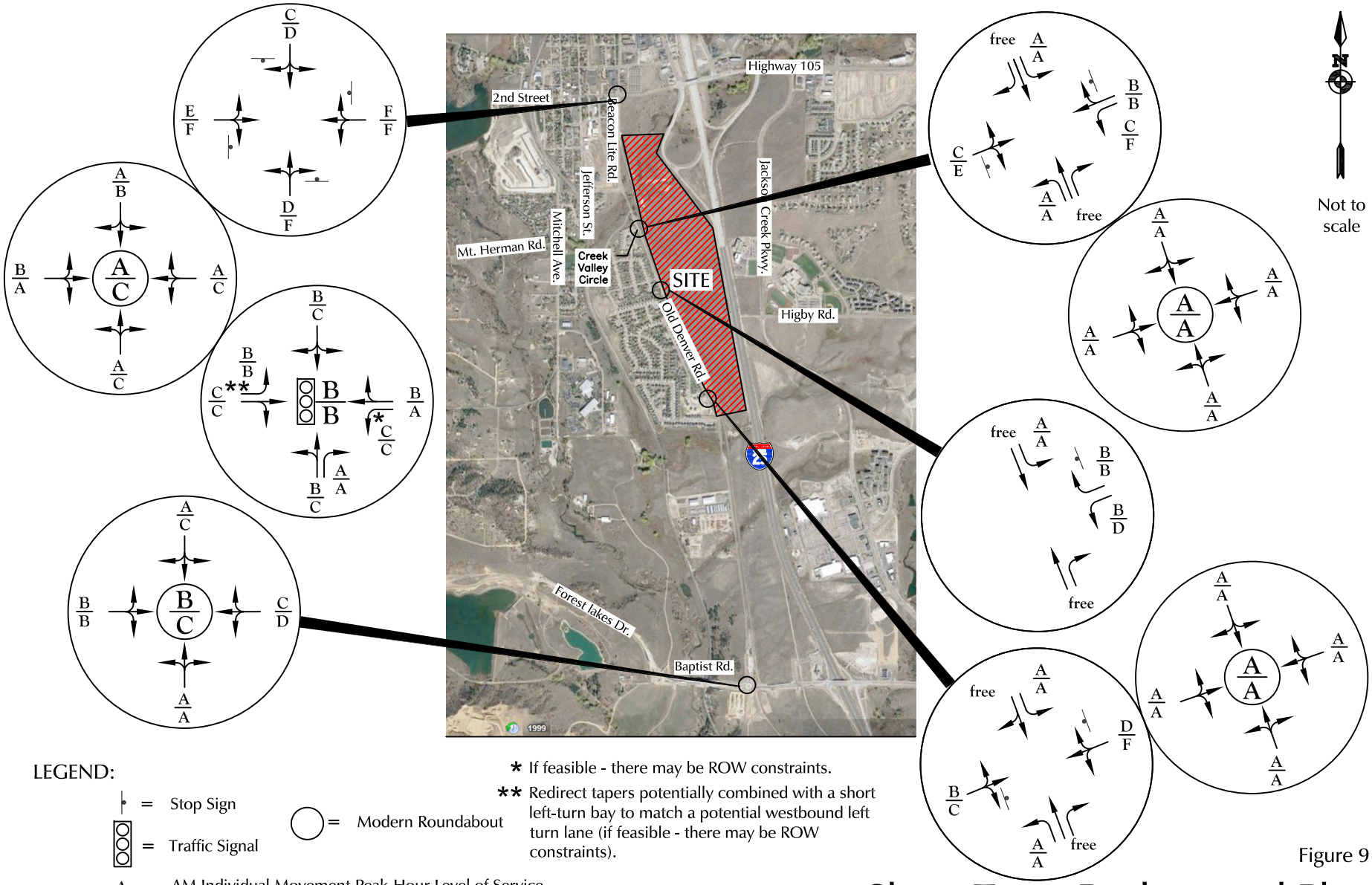
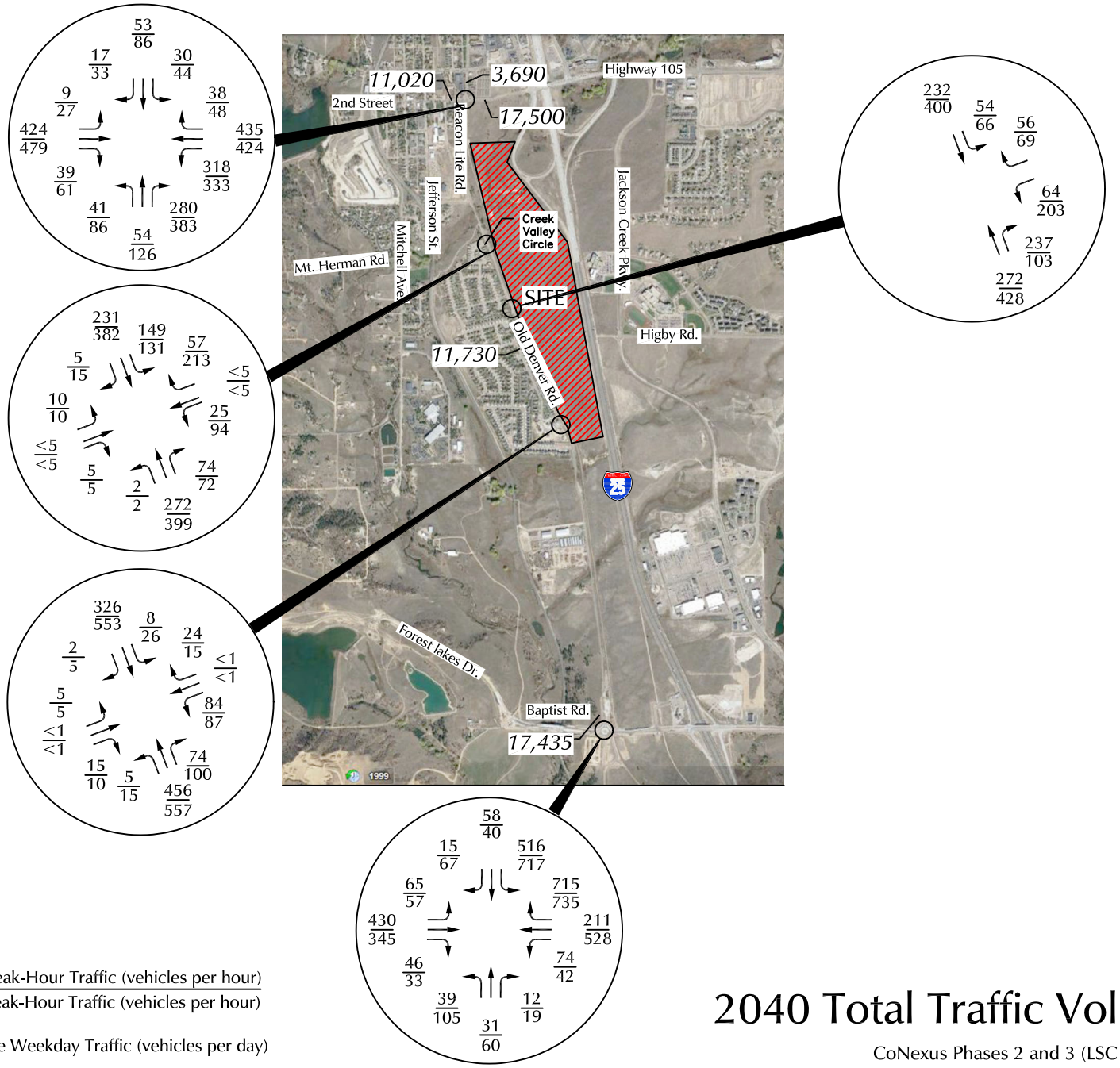


Figure 9

Short-Term Background Plus Site-Generated Levels of Service

CoNexus Phases 2 and 3 (LSC #S214980)



Not to scale

LEGEND:

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

XXX = Average Weekday Traffic (vehicles per day)

LSC TRANSPORTATION CONSULTANTS, INC.

Figure 10

2040 Total Traffic Volumes

CoNexus Phases 2 and 3 (LSC #S214980)

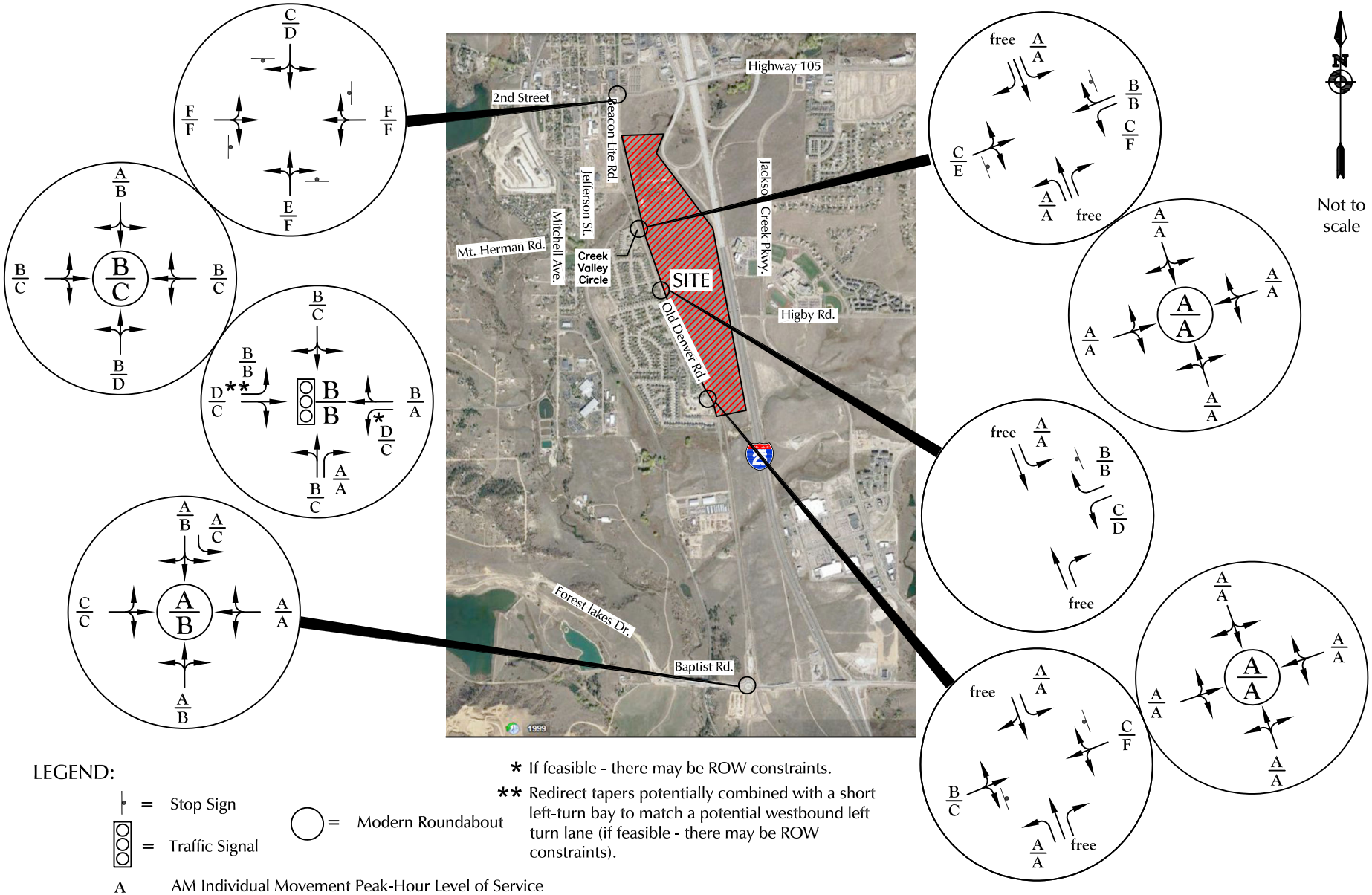


Figure 11

2040 Total Traffic Levels of Service

CoNexus Phases 2 and 3 (LSC #S214980)

Traffic Counts

TRANSPORTATION
CONSULTANTS, INC.

LSC Transportation Consultants, Inc.

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

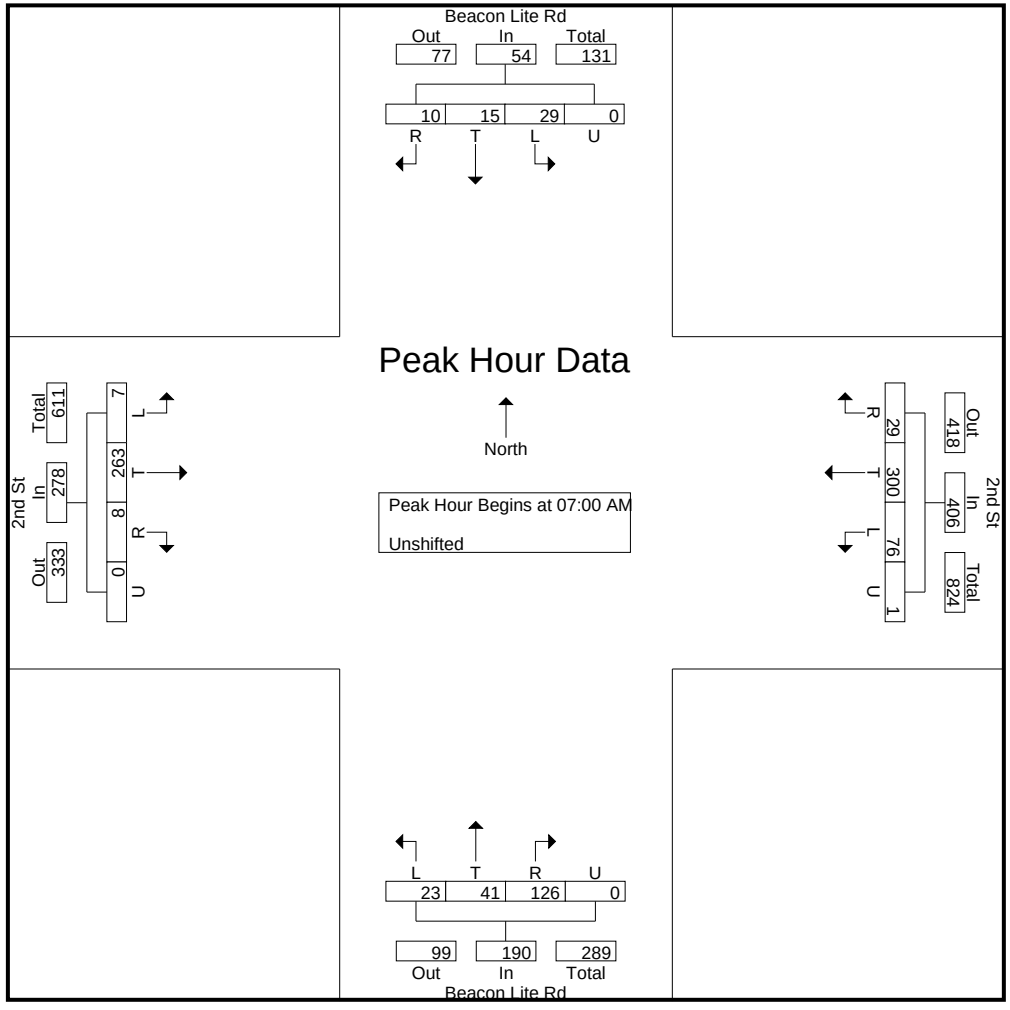
File Name : Beacon Lite Rd - 2nd St AM 11-21
Site Code : S214980
Start Date : 11/16/2021
Page No : 1

Groups Printed- Unshifted

	Beacon Lite Rd Southbound					2nd St Westbound					Beacon Lite Rd Northbound					2nd St Eastbound					
Start Time	**L**	**T**	**R**	**U**	**App. Total**	**L**	**T**	**R**	**U**	**App. Total**	**L**	**T**	**R**	**U**	**App. Total**	**L**	**T**	**R**	**U**	**App. Total**	**Int. Total**
06:30 AM	5	1	2	0	8	2	30	2	0	34	0	5	6	0	11	1	29	0	0	30	83
06:45 AM	4	1	3	0	8	3	35	9	0	47	3	12	39	0	54	1	34	1	0	36	145
Total	9	2	5	0	16	5	65	11	0	81	3	17	45	0	65	2	63	1	0	66	228
07:00 AM	12	2	2	0	16	22	53	4	1	80	2	7	37	0	46	0	65	0	0	65	207
07:15 AM	7	6	1	0	14	17	72	10	0	99	5	10	40	0	55	2	73	0	0	75	243
07:30 AM	5	2	2	0	9	20	78	9	0	107	7	9	24	0	40	2	47	3	0	52	208
07:45 AM	5	5	5	0	15	17	97	6	0	120	9	15	25	0	49	3	78	5	0	86	270
Total	29	15	10	0	54	76	300	29	1	406	23	41	126	0	190	7	263	8	0	278	928
08:00 AM	2	7	3	0	12	8	73	11	0	92	4	7	11	0	22	6	51	4	0	61	187
08:15 AM	4	6	4	0	14	13	45	5	0	63	4	4	14	0	22	2	45	2	0	49	148
Grand Total	44	30	22	0	96	102	483	56	1	642	34	69	196	0	299	17	422	15	0	454	1491
Apprch %	45.8	31.2	22.9	0		15.9	75.2	8.7	0.2		11.4	23.1	65.6	0		3.7	93	3.3	0		
Total %	3	2	1.5	0	6.4	6.8	32.4	3.8	0.1	43.1	2.3	4.6	13.1	0	20.1	1.1	28.3	1	0	30.4	

LSC Transportation Consultants, Inc.
545 E Pikes Peak Ave, Suite 210
Colorado Springs, CO 80905
719-633-2868

File Name : Beacon Lite Rd - 2nd St AM 11-21
Site Code : S214980
Start Date : 11/16/2021
Page No : 3



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Colorado Springs, CO 80905
719-633-2868

File Name : Beacon Lite Rd - 2nd St PM 11-21
Site Code : S214890
Start Date : 11/16/2021
Page No : 1

Groups Printed- Unshifted

	Beacon Lite Rd Southbound					2nd St Westbound					Beacon Lite Rd Northbound					2nd St Eastbound					
Start Time	**L**	**T**	**R**	**U**	**App. Total**	**L**	**T**	**R**	**U**	**App. Total**	**L**	**T**	**R**	**U**	**App. Total**	**L**	**T**	**R**	**U**	**App. Total**	**Int. Total**
04:00 PM	12	19	5	0	36	26	74	17	0	117	10	17	16	0	43	6	67	7	0	80	276
04:15 PM	6	16	9	0	31	24	60	11	0	95	9	22	6	0	37	6	95	5	0	106	269
04:30 PM	8	15	3	0	26	21	61	10	0	92	11	13	7	0	31	9	81	9	0	99	248
04:45 PM	16	12	7	0	35	17	64	3	0	84	14	19	13	0	46	3	77	3	0	83	248
Total	42	62	24	0	128	88	259	41	0	388	44	71	42	0	157	24	320	24	0	368	1041
05:00 PM	24	14	2	0	40	18	68	8	0	94	11	14	14	0	39	3	76	4	0	83	256
05:15 PM	14	18	4	0	36	18	62	5	0	85	12	14	21	0	47	5	64	4	0	73	241
05:30 PM	9	8	5	0	22	19	75	3	0	97	4	13	15	0	32	3	43	3	0	49	200
05:45 PM	0	5	2	0	7	13	77	4	0	94	11	9	17	0	37	7	52	4	0	63	201
Total	47	45	13	0	105	68	282	20	0	370	38	50	67	0	155	18	235	15	0	268	898
Grand Total	89	107	37	0	233	156	541	61	0	758	82	121	109	0	312	42	555	39	0	636	1939
Apprch %	38.2	45.9	15.9	0		20.6	71.4	8	0		26.3	38.8	34.9	0		6.6	87.3	6.1	0		
Total %	4.6	5.5	1.9	0	12	8	27.9	3.1	0	39.1	4.2	6.2	5.6	0	16.1	2.2	28.6	2	0	32.8	

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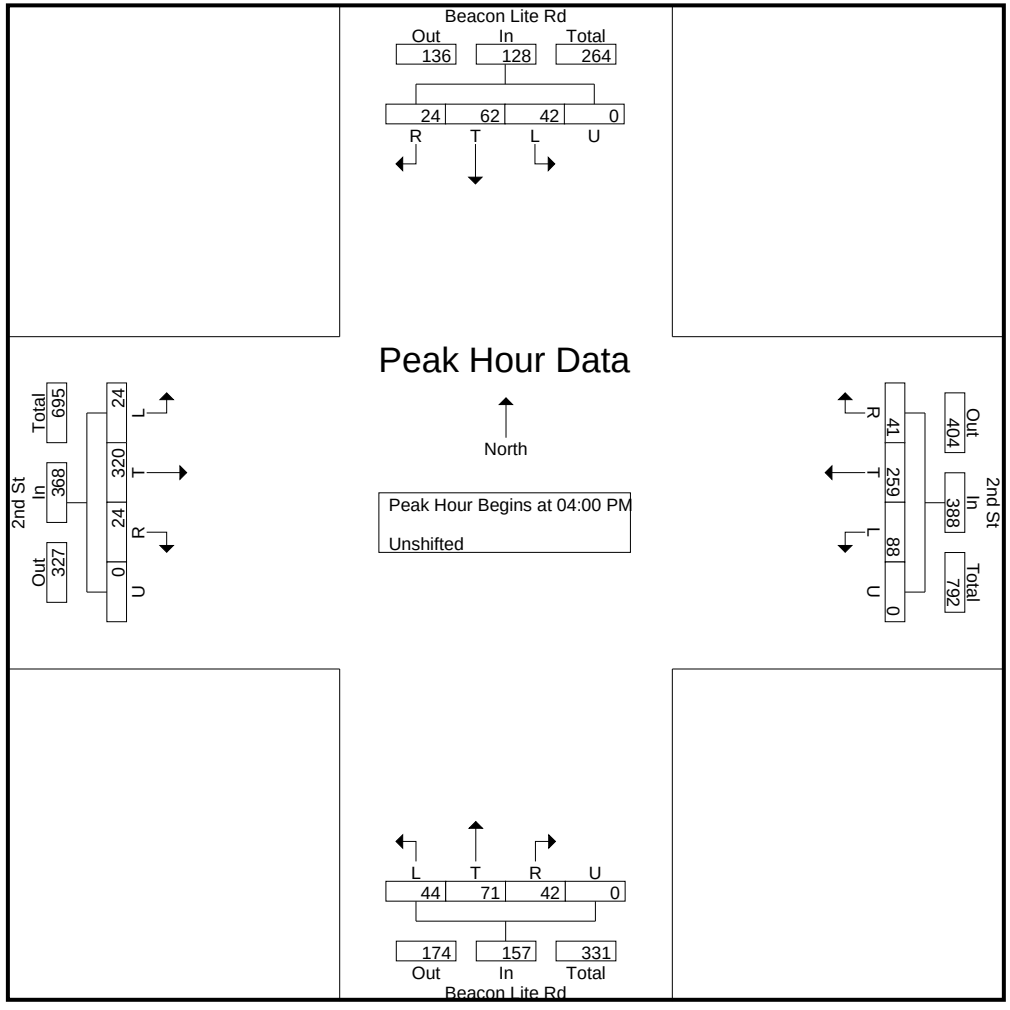


Levels of Service

TRANSPORTATION
CONSULTANTS, INC.

Intersection	
Intersection Delay, s/veh	17
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	7	263	8	76	300	29	23	41	126	29	15	10
Future Vol, veh/h	7	263	8	76	300	29	23	41	126	29	15	10
Peak Hour Factor	0.81	0.81	0.81	0.84	0.84	0.84	0.83	0.83	0.83	0.78	0.78	0.78
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	9	325	10	90	357	35	28	49	152	37	19	13
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	15	21.5	12.5	10.8
HCM LOS	B	C	B	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	12%	3%	19%	54%
Vol Thru, %	22%	95%	74%	28%
Vol Right, %	66%	3%	7%	19%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	190	278	405	54
LT Vol	23	7	76	29
Through Vol	41	263	300	15
RT Vol	126	8	29	10
Lane Flow Rate	229	343	482	69
Geometry Grp	1	1	1	1
Degree of Util (X)	0.375	0.534	0.724	0.131
Departure Headway (Hd)	5.892	5.6	5.405	6.787
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	604	638	665	532
Service Time	3.981	3.677	3.475	4.787
HCM Lane V/C Ratio	0.379	0.538	0.725	0.13
HCM Control Delay	12.5	15	21.5	10.8
HCM Lane LOS	B	B	C	B
HCM 95th-tile Q	1.7	3.2	6.2	0.4

Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	7	1	1	142	66	5
Future Vol, veh/h	7	1	1	142	66	5
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	-	140	-	-	155
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	67	67	72	72	78	78
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	10	1	1	197	85	6

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	284	85	91	0	-	0
Stage 1	85	-	-	-	-	-
Stage 2	199	-	-	-	-	-
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	706	974	1504	-	-	-
Stage 1	938	-	-	-	-	-
Stage 2	835	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	705	974	1504	-	-	-
Mov Cap-2 Maneuver	705	-	-	-	-	-
Stage 1	937	-	-	-	-	-
Stage 2	835	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	10	0.1	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1504	-	730	-	-
HCM Lane V/C Ratio	0.001	-	0.016	-	-
HCM Control Delay (s)	7.4	-	10	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Intersection	
Intersection Delay, s/veh	4.5
Intersection LOS	A

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	173	288	13	176
Demand Flow Rate, veh/h	176	294	13	179
Vehicles Circulating, veh/h	204	15	342	126
Vehicles Exiting, veh/h	101	340	38	183
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	4.7	4.5	3.8	4.3
Approach LOS	A	A	A	A

Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976	4.976
Entry Flow, veh/h	176	294	13	179
Cap Entry Lane, veh/h	1121	1359	974	1213
Entry HV Adj Factor	0.982	0.980	0.992	0.982
Flow Entry, veh/h	173	288	13	176
Cap Entry, veh/h	1100	1332	966	1192
V/C Ratio	0.157	0.216	0.013	0.148
Control Delay, s/veh	4.7	4.5	3.8	4.3
LOS	A	A	A	A
95th %tile Queue, veh	1	1	0	1

Intersection	
Intersection Delay, s/veh	21.6
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	24	320	24	88	259	41	44	71	42	42	62	24
Future Vol, veh/h	24	320	24	88	259	41	44	71	42	42	62	24
Peak Hour Factor	0.87	0.87	0.87	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	28	368	28	106	312	49	53	86	51	51	75	29
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	22.5	26.6	13.9	13.2
HCM LOS	C	D	B	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	28%	7%	23%	33%
Vol Thru, %	45%	87%	67%	48%
Vol Right, %	27%	7%	11%	19%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	157	368	388	128
LT Vol	44	24	88	42
Through Vol	71	320	259	62
RT Vol	42	24	41	24
Lane Flow Rate	189	423	467	154
Geometry Grp	1	1	1	1
Degree of Util (X)	0.362	0.708	0.774	0.303
Departure Headway (Hd)	6.89	6.027	5.957	7.063
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	520	596	608	506
Service Time	4.961	4.086	4.013	5.139
HCM Lane V/C Ratio	0.363	0.71	0.768	0.304
HCM Control Delay	13.9	22.5	26.6	13.2
HCM Lane LOS	B	C	D	B
HCM 95th-tile Q	1.6	5.7	7.2	1.3

Intersection	
Int Delay, s/veh	0.4

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	8	4	1	175	163	12
Future Vol, veh/h	8	4	1	175	163	12
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	-	140	-	-	155
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	78	78	88	88	87	87
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	10	5	1	199	187	14

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	388	187	201	0	-	0
Stage 1	187	-	-	-	-	-
Stage 2	201	-	-	-	-	-
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	616	855	1371	-	-	-
Stage 1	845	-	-	-	-	-
Stage 2	833	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	615	855	1371	-	-	-
Mov Cap-2 Maneuver	615	-	-	-	-	-
Stage 1	844	-	-	-	-	-
Stage 2	833	-	-	-	-	-

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

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1371	-	678	-	-
HCM Lane V/C Ratio	0.001	-	0.023	-	-
HCM Control Delay (s)	7.6	-	10.4	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Intersection	
Intersection Delay, s/veh	5.3
Intersection LOS	A

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	131	454	36	178
Demand Flow Rate, veh/h	133	463	36	181
Vehicles Circulating, veh/h	171	32	289	210
Vehicles Exiting, veh/h	220	293	15	285
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	4.1	5.9	3.8	4.7
Approach LOS	A	A	A	A

Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976	4.976
Entry Flow, veh/h	133	463	36	181
Cap Entry Lane, veh/h	1159	1336	1028	1114
Entry HV Adj Factor	0.983	0.981	0.995	0.983
Flow Entry, veh/h	131	454	36	178
Cap Entry, veh/h	1139	1310	1022	1095
V/C Ratio	0.115	0.347	0.035	0.163
Control Delay, s/veh	4.1	5.9	3.8	4.7
LOS	A	A	A	A
95th %tile Queue, veh	0	2	0	1

Intersection	
Intersection Delay, s/veh	23.8
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	7	340	16	129	326	29	30	42	146	29	23	10
Future Vol, veh/h	7	340	16	129	326	29	30	42	146	29	23	10
Peak Hour Factor	0.89	0.89	0.89	0.91	0.91	0.91	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	8	382	18	142	358	32	33	46	159	32	25	11
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	20	32.6	13.9	11.5
HCM LOS	C	D	B	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	14%	2%	27%	47%
Vol Thru, %	19%	94%	67%	37%
Vol Right, %	67%	4%	6%	16%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	218	363	484	62
LT Vol	30	7	129	29
Through Vol	42	340	326	23
RT Vol	146	16	29	10
Lane Flow Rate	237	408	532	67
Geometry Grp	1	1	1	1
Degree of Util (X)	0.418	0.668	0.848	0.136
Departure Headway (Hd)	6.352	5.896	5.737	7.288
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	566	616	633	490
Service Time	4.408	3.916	3.753	5.363
HCM Lane V/C Ratio	0.419	0.662	0.84	0.137
HCM Control Delay	13.9	20	32.6	11.5
HCM Lane LOS	B	C	D	B
HCM 95th-tile Q	2.1	5	9.4	0.5

Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	10	5	2	170	135	5
Future Vol, veh/h	10	5	2	170	135	5
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	-	100	-	-	100
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	12	6	2	200	159	6

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	363	159	165	0	-	0
Stage 1	159	-	-	-	-	-
Stage 2	204	-	-	-	-	-
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	636	886	1413	-	-	-
Stage 1	870	-	-	-	-	-
Stage 2	830	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	635	886	1413	-	-	-
Mov Cap-2 Maneuver	635	-	-	-	-	-
Stage 1	869	-	-	-	-	-
Stage 2	830	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	10.3	0.1	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1413	-	701	-	-
HCM Lane V/C Ratio	0.002	-	0.025	-	-
HCM Control Delay (s)	7.6	-	10.3	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	5	15	5	122	203	2
Future Vol, veh/h	5	15	5	122	203	2
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	-	100	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	85	85	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	5	16	5	144	239	2

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	394	240	241	0	-	0
Stage 1	240	-	-	-	-	-
Stage 2	154	-	-	-	-	-
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	611	799	1326	-	-	-
Stage 1	800	-	-	-	-	-
Stage 2	874	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	609	799	1326	-	-	-
Mov Cap-2 Maneuver	609	-	-	-	-	-
Stage 1	797	-	-	-	-	-
Stage 2	874	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	10	0.3	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1326	-	741	-	-
HCM Lane V/C Ratio	0.004	-	0.029	-	-
HCM Control Delay (s)	7.7	-	10	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Intersection	
Intersection Delay, s/veh	7.1
Intersection LOS	A

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	432	545	25	238
Demand Flow Rate, veh/h	441	556	25	242
Vehicles Circulating, veh/h	266	54	656	235
Vehicles Exiting, veh/h	211	627	51	375
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	8.1	7.0	5.5	5.5
Approach LOS	A	A	A	A

Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976	4.976
Entry Flow, veh/h	441	556	25	242
Cap Entry Lane, veh/h	1052	1306	707	1086
Entry HV Adj Factor	0.980	0.981	0.992	0.982
Flow Entry, veh/h	432	545	25	238
Cap Entry, veh/h	1031	1280	701	1067
V/C Ratio	0.419	0.426	0.035	0.223
Control Delay, s/veh	8.1	7.0	5.5	5.5
LOS	A	A	A	A
95th %tile Queue, veh	2	2	0	1

Intersection	
Intersection Delay, s/veh	59.6
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	24	371	40	124	345	41	61	78	99	42	64	24
Future Vol, veh/h	24	371	40	124	345	41	61	78	99	42	64	24
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.84	0.84	0.84	0.72	0.72	0.72
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	26	403	43	135	375	45	73	93	118	58	89	33
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	52.1	98.4	22.9	18
HCM LOS	F	F	C	C

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	26%	6%	24%	32%
Vol Thru, %	33%	85%	68%	49%
Vol Right, %	42%	9%	8%	18%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	238	435	510	130
LT Vol	61	24	124	42
Through Vol	78	371	345	64
RT Vol	99	40	41	24
Lane Flow Rate	283	473	554	181
Geometry Grp	1	1	1	1
Degree of Util (X)	0.607	0.928	1.106	0.418
Departure Headway (Hd)	8.137	7.408	7.183	8.806
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	448	492	510	412
Service Time	6.137	5.408	5.183	6.806
HCM Lane V/C Ratio	0.632	0.961	1.086	0.439
HCM Control Delay	22.9	52.1	98.4	18
HCM Lane LOS	C	F	F	C
HCM 95th-tile Q	3.9	11	18.1	2

Intersection	
Int Delay, s/veh	0.4

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	10	5	2	256	217	15
Future Vol, veh/h	10	5	2	256	217	15
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	-	100	-	-	100
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	12	6	2	301	255	18

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	560	255	273	0	-	0
Stage 1	255	-	-	-	-	-
Stage 2	305	-	-	-	-	-
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	489	784	1290	-	-	-
Stage 1	788	-	-	-	-	-
Stage 2	748	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	488	784	1290	-	-	-
Mov Cap-2 Maneuver	488	-	-	-	-	-
Stage 1	786	-	-	-	-	-
Stage 2	748	-	-	-	-	-

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

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1290	-	558	-	-
HCM Lane V/C Ratio	0.002	-	0.032	-	-
HCM Control Delay (s)	7.8	-	11.7	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	5	10	15	323	182	5
Future Vol, veh/h	5	10	15	323	182	5
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	-	200	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	85	85	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	5	11	16	380	214	5

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	629	217	219	0	-	0
Stage 1	217	-	-	-	-	-
Stage 2	412	-	-	-	-	-
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	446	823	1350	-	-	-
Stage 1	819	-	-	-	-	-
Stage 2	669	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	441	823	1350	-	-	-
Mov Cap-2 Maneuver	441	-	-	-	-	-
Stage 1	809	-	-	-	-	-
Stage 2	669	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	10.8	0.3	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1350	-	639	-	-
HCM Lane V/C Ratio	0.012	-	0.026	-	-
HCM Control Delay (s)	7.7	-	10.8	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Intersection	
Intersection Delay, s/veh	10.0
Intersection LOS	A

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	353	835	71	262
Demand Flow Rate, veh/h	360	851	72	267
Vehicles Circulating, veh/h	252	96	557	465
Vehicles Exiting, veh/h	480	533	55	482
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	6.9	12.3	5.6	7.8
Approach LOS	A	B	A	A

Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976	4.976
Entry Flow, veh/h	360	851	72	267
Cap Entry Lane, veh/h	1067	1251	782	859
Entry HV Adj Factor	0.980	0.981	0.980	0.980
Flow Entry, veh/h	353	835	71	262
Cap Entry, veh/h	1046	1228	766	842
V/C Ratio	0.337	0.680	0.092	0.311
Control Delay, s/veh	6.9	12.3	5.6	7.8
LOS	A	B	A	A
95th %tile Queue, veh	2	6	0	1

Intersection	
Intersection Delay, s/veh	56.9
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	9	424	27	148	435	38	35	45	161	30	25	17
Future Vol, veh/h	9	424	27	148	435	38	35	45	161	30	25	17
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	9	446	28	156	458	40	37	47	169	32	26	18
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	32.8	95.5	16.5	12.9
HCM LOS	D	F	C	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	15%	2%	24%	42%
Vol Thru, %	19%	92%	70%	35%
Vol Right, %	67%	6%	6%	24%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	241	460	621	72
LT Vol	35	9	148	30
Through Vol	45	424	435	25
RT Vol	161	27	38	17
Lane Flow Rate	254	484	654	76
Geometry Grp	1	1	1	1
Degree of Util (X)	0.477	0.825	1.113	0.166
Departure Headway (Hd)	7.14	6.432	6.128	8.259
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	507	567	595	437
Service Time	5.14	4.432	4.133	6.259
HCM Lane V/C Ratio	0.501	0.854	1.099	0.174
HCM Control Delay	16.5	32.8	95.5	12.9
HCM Lane LOS	C	D	F	B
HCM 95th-tile Q	2.5	8.4	20.3	0.6

Intersection	
Intersection Delay, s/veh	8.4
Intersection LOS	A

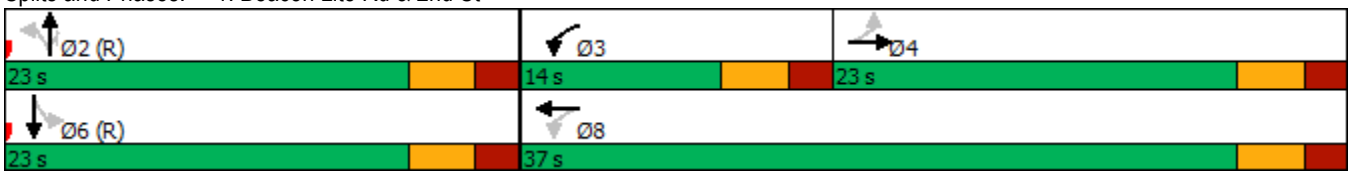
Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	483	654	253	76
Demand Flow Rate, veh/h	493	667	258	78
Vehicles Circulating, veh/h	219	95	497	664
Vehicles Exiting, veh/h	523	660	215	98
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	8.2	8.9	7.9	6.4
Approach LOS	A	A	A	A

Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976	4.976
Entry Flow, veh/h	493	667	258	78
Cap Entry Lane, veh/h	1104	1252	831	701
Entry HV Adj Factor	0.980	0.980	0.981	0.980
Flow Entry, veh/h	483	654	253	76
Cap Entry, veh/h	1081	1228	815	687
V/C Ratio	0.447	0.533	0.310	0.111
Control Delay, s/veh	8.2	8.9	7.9	6.4
LOS	A	A	A	A
95th %tile Queue, veh	2	3	1	0

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	9	424	148	435	35	45	161	30	25
Future Volume (vph)	9	424	148	435	35	45	161	30	25
Turn Type	Perm	NA	pm+pt	NA	Perm	NA	Perm	Perm	NA
Protected Phases		4	3	8		2			6
Permitted Phases	4		8		2		2	6	
Detector Phase	4	4	3	8	2	2	2	6	6
Switch Phase									
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	23.0	23.0	10.0	23.0	23.0	23.0	23.0	23.0	23.0
Total Split (s)	23.0	23.0	14.0	37.0	23.0	23.0	23.0	23.0	23.0
Total Split (%)	38.3%	38.3%	23.3%	61.7%	38.3%	38.3%	38.3%	38.3%	38.3%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0		0.0	0.0		0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0		5.0	5.0		5.0
Lead/Lag	Lag	Lag	Lead						
Lead-Lag Optimize?	Yes	Yes	Yes						
Recall Mode	None	None	None	None	C-Max	C-Max	C-Max	C-Max	C-Max
Act Effct Green (s)	17.7	17.7	28.4	28.4		21.6	21.6		21.6
Actuated g/C Ratio	0.30	0.30	0.47	0.47		0.36	0.36		0.36
v/c Ratio	0.03	0.87	0.45	0.57		0.14	0.25		0.13
Control Delay	15.3	38.7	12.1	13.2		16.4	4.3		13.3
Queue Delay	0.0	0.0	0.0	0.0		0.0	0.0		0.0
Total Delay	15.3	38.7	12.1	13.2		16.4	4.3		13.3
LOS	B	D	B	B		B	A		B
Approach Delay		38.3		12.9		8.3			13.3
Approach LOS		D		B		A			B

Intersection Summary	
Cycle Length: 60	
Actuated Cycle Length: 60	
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	
Natural Cycle: 60	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.87	
Intersection Signal Delay: 20.5	Intersection LOS: C
Intersection Capacity Utilization 55.3%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 1: Beacon Lite Rd & 2nd St



Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	10	5	2	195	170	5
Future Vol, veh/h	10	5	2	195	170	5
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	-	100	-	-	100
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	11	5	2	205	179	5

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	388	179	184	0	-	0
Stage 1	179	-	-	-	-	-
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	616	864	1391	-	-	-
Stage 1	852	-	-	-	-	-
Stage 2	826	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	615	864	1391	-	-	-
Mov Cap-2 Maneuver	615	-	-	-	-	-
Stage 1	851	-	-	-	-	-
Stage 2	826	-	-	-	-	-

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

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1391	-	680	-	-
HCM Lane V/C Ratio	0.002	-	0.023	-	-
HCM Control Delay (s)	7.6	-	10.4	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	5	15	5	147	238	2
Future Vol, veh/h	5	15	5	147	238	2
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	-	200	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	5	16	5	155	251	2

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	417	252	253	0	-	0
Stage 1	252	-	-	-	-	-
Stage 2	165	-	-	-	-	-
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	592	787	1312	-	-	-
Stage 1	790	-	-	-	-	-
Stage 2	864	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	590	787	1312	-	-	-
Mov Cap-2 Maneuver	590	-	-	-	-	-
Stage 1	787	-	-	-	-	-
Stage 2	864	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	10.1	0.3	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1312	-	726	-	-
HCM Lane V/C Ratio	0.004	-	0.029	-	-
HCM Control Delay (s)	7.8	-	10.1	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Intersection	
Intersection Delay, s/veh	6.8
Intersection LOS	A

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	2
Conflicting Circle Lanes	2	2	2	2
Adj Approach Flow, veh/h	553	673	80	440
Demand Flow Rate, veh/h	564	686	82	448
Vehicles Circulating, veh/h	515	122	891	348
Vehicles Exiting, veh/h	281	851	188	80
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	13.3	2.2	6.9	5.8
Approach LOS	B	A	A	A

Lane	Left	Left	Bypass	Left	Left	Right
Designated Moves	LTR	LT	R	LTR	L	LTR
Assumed Moves	LTR	LT	R	LTR	L	LTR
RT Channelized			Free			
Lane Util	1.000	1.000		1.000	0.529	0.471
Follow-Up Headway, s	2.535	2.535		2.535	2.667	2.535
Critical Headway, s	4.328	4.328	380	4.328	4.645	4.328
Entry Flow, veh/h	564	306	1938	82	237	211
Cap Entry Lane, veh/h	917	1280	0.980	666	980	1056
Entry HV Adj Factor	0.980	0.979	373	0.981	0.984	0.980
Flow Entry, veh/h	553	300	1900	80	233	207
Cap Entry, veh/h	899	1253	0.196	653	964	1035
V/C Ratio	0.615	0.239	0.0	0.123	0.242	0.200
Control Delay, s/veh	13.3	5.0	A	6.9	6.1	5.3
LOS	B	A	1	A	A	A
95th %tile Queue, veh	4	1		0	1	1

Intersection	
Intersection Delay, s/veh	116.3
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	27	479	50	147	424	48	71	94	139	44	67	33
Future Vol, veh/h	27	479	50	147	424	48	71	94	139	44	67	33
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	28	504	53	155	446	51	75	99	146	46	71	35
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	122.8	176.2	28.6	18.6
HCM LOS	F	F	D	C

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	23%	5%	24%	31%
Vol Thru, %	31%	86%	68%	47%
Vol Right, %	46%	9%	8%	23%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	304	556	619	144
LT Vol	71	27	147	44
Through Vol	94	479	424	67
RT Vol	139	50	48	33
Lane Flow Rate	320	585	652	152
Geometry Grp	1	1	1	1
Degree of Util (X)	0.684	1.168	1.308	0.364
Departure Headway (Hd)	8.724	7.771	7.604	9.961
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	416	474	482	364
Service Time	6.724	5.771	5.604	7.961
HCM Lane V/C Ratio	0.769	1.234	1.353	0.418
HCM Control Delay	28.6	122.8	176.2	18.6
HCM Lane LOS	D	F	F	C
HCM 95th-tile Q	5	19.9	26.9	1.6

Intersection	
Intersection Delay, s/veh	10.7
Intersection LOS	B

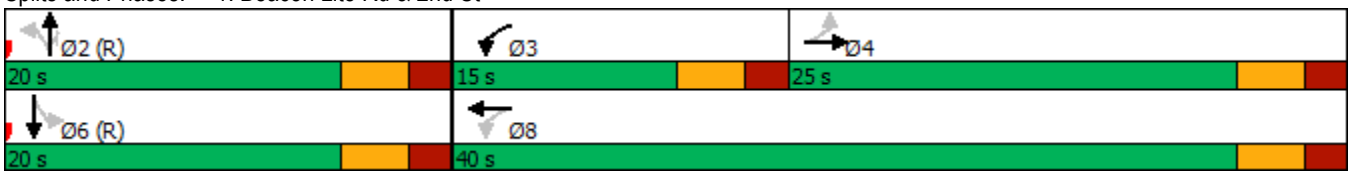
Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	585	652	320	152
Demand Flow Rate, veh/h	597	665	326	155
Vehicles Circulating, veh/h	277	206	590	689
Vehicles Exiting, veh/h	567	710	284	182
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	11.0	11.0	10.6	8.1
Approach LOS	B	B	B	A

Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976	4.976
Entry Flow, veh/h	597	665	326	155
Cap Entry Lane, veh/h	1040	1118	756	683
Entry HV Adj Factor	0.980	0.981	0.982	0.978
Flow Entry, veh/h	585	652	320	152
Cap Entry, veh/h	1019	1097	742	668
V/C Ratio	0.574	0.595	0.431	0.227
Control Delay, s/veh	11.0	11.0	10.6	8.1
LOS	B	B	B	A
95th %tile Queue, veh	4	4	2	1

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	27	479	147	424	71	94	139	44	67
Future Volume (vph)	27	479	147	424	71	94	139	44	67
Turn Type	Perm	NA	pm+pt	NA	Perm	NA	Perm	Perm	NA
Protected Phases		4	3	8		2			6
Permitted Phases	4		8		2		2	6	
Detector Phase	4	4	3	8	2	2	2	6	6
Switch Phase									
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	23.0	23.0	10.0	23.0	10.0	10.0	10.0	10.0	10.0
Total Split (s)	25.0	25.0	15.0	40.0	20.0	20.0	20.0	20.0	20.0
Total Split (%)	41.7%	41.7%	25.0%	66.7%	33.3%	33.3%	33.3%	33.3%	33.3%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0		0.0	0.0		0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0		5.0	5.0		5.0
Lead/Lag	Lag	Lag	Lead						
Lead-Lag Optimize?	Yes	Yes	Yes						
Recall Mode	None	None	None	None	C-Max	C-Max	C-Max	C-Max	C-Max
Act Effct Green (s)	20.8	20.8	31.5	31.5		18.5	18.5		18.5
Actuated g/C Ratio	0.35	0.35	0.52	0.52		0.31	0.31		0.31
v/c Ratio	0.09	0.87	0.45	0.51		0.37	0.25		0.30
Control Delay	14.3	35.2	10.4	10.3		21.4	5.2		17.6
Queue Delay	0.0	0.0	0.0	0.0		0.0	0.0		0.0
Total Delay	14.3	35.2	10.4	10.3		21.4	5.2		17.6
LOS	B	D	B	B		C	A		B
Approach Delay		34.2		10.3		14.0			17.6
Approach LOS		C		B		B			B

Intersection Summary	
Cycle Length: 60	
Actuated Cycle Length: 60	
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	
Natural Cycle: 50	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.87	
Intersection Signal Delay: 19.8	Intersection LOS: B
Intersection Capacity Utilization 63.5%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 1: Beacon Lite Rd & 2nd St



Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	10	5	2	321	296	15
Future Vol, veh/h	10	5	2	321	296	15
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	-	100	-	-	100
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	11	5	2	338	312	16

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	654	312	328	0	-	0
Stage 1	312	-	-	-	-	-
Stage 2	342	-	-	-	-	-
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	431	728	1232	-	-	-
Stage 1	742	-	-	-	-	-
Stage 2	719	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	430	728	1232	-	-	-
Mov Cap-2 Maneuver	529	-	-	-	-	-
Stage 1	741	-	-	-	-	-
Stage 2	719	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	11.4	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1232	-	582	-	-
HCM Lane V/C Ratio	0.002	-	0.027	-	-
HCM Control Delay (s)	7.9	-	11.4	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Intersection	
Int Delay, s/veh	0.4

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	5	10	15	388	261	5
Future Vol, veh/h	5	10	15	388	261	5
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	-	200	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	5	11	16	408	275	5

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	718	278	280	0	-	0
Stage 1	278	-	-	-	-	-
Stage 2	440	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	396	761	1283	-	-	-
Stage 1	769	-	-	-	-	-
Stage 2	649	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	391	761	1283	-	-	-
Mov Cap-2 Maneuver	495	-	-	-	-	-
Stage 1	760	-	-	-	-	-
Stage 2	649	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	10.7	0.3	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1283	-	645	-	-
HCM Lane V/C Ratio	0.012	-	0.024	-	-
HCM Control Delay (s)	7.8	-	10.7	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Intersection	
Intersection Delay, s/veh	7.1
Intersection LOS	A

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	2
Conflicting Circle Lanes	2	2	2	2
Adj Approach Flow, veh/h	449	1106	189	469
Demand Flow Rate, veh/h	458	1128	192	479
Vehicles Circulating, veh/h	471	224	812	725
Vehicles Exiting, veh/h	733	780	117	111
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	9.8	4.9	8.4	9.3
Approach LOS	A	A	A	A

Lane	Left	Left	Bypass	Left	Left	Right
Designated Moves	LTR	LT	R	LTR	L	LTR
Assumed Moves	LTR	LT	R	LTR	L	LTR
RT Channelized			Free			
Lane Util	1.000	1.000		1.000	0.530	0.470
Follow-Up Headway, s	2.535	2.535		2.535	2.667	2.535
Critical Headway, s	4.328	4.328	516	4.328	4.645	4.328
Entry Flow, veh/h	458	612	1938	192	254	225
Cap Entry Lane, veh/h	952	1174	0.980	712	693	767
Entry HV Adj Factor	0.980	0.980	506	0.984	0.979	0.980
Flow Entry, veh/h	449	600	1900	189	249	221
Cap Entry, veh/h	932	1151	0.266	700	678	752
V/C Ratio	0.481	0.521	0.0	0.270	0.367	0.293
Control Delay, s/veh	9.8	9.1	A	8.4	10.2	8.2
LOS	A	A	1	A	B	A
95th %tile Queue, veh	3	3		1	2	1

Intersection	
Intersection Delay, s/veh	181
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	9	424	39	318	435	38	41	54	280	30	53	17
Future Vol, veh/h	9	424	39	318	435	38	41	54	280	30	53	17
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	9	446	41	335	458	40	43	57	295	32	56	18
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	68.5	337.1	36.9	17.6
HCM LOS	F	F	E	C

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	11%	2%	40%	30%
Vol Thru, %	14%	90%	55%	53%
Vol Right, %	75%	8%	5%	17%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	375	472	791	100
LT Vol	41	9	318	30
Through Vol	54	424	435	53
RT Vol	280	39	38	17
Lane Flow Rate	395	497	833	105
Geometry Grp	1	1	1	1
Degree of Util (X)	0.791	0.984	1.688	0.261
Departure Headway (Hd)	8.517	8.322	7.3	10.819
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	430	442	500	335
Service Time	6.517	6.322	5.374	8.819
HCM Lane V/C Ratio	0.919	1.124	1.666	0.313
HCM Control Delay	36.9	68.5	337.1	17.6
HCM Lane LOS	E	F	F	C
HCM 95th-tile Q	7	12.2	48.4	1

Intersection	
Intersection Delay, s/veh	12.0
Intersection LOS	B

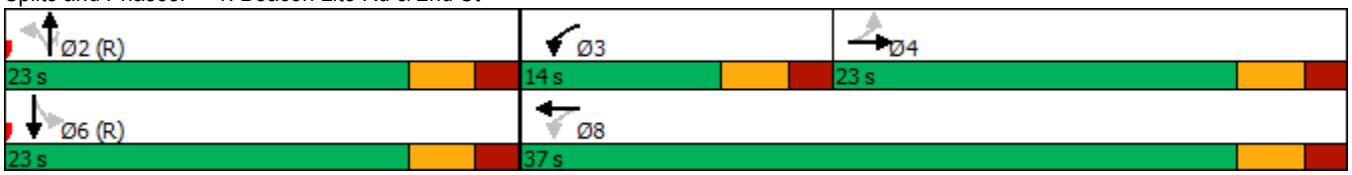
Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	496	833	395	106
Demand Flow Rate, veh/h	506	850	403	108
Vehicles Circulating, veh/h	432	111	497	853
Vehicles Exiting, veh/h	529	789	441	108
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	12.3	12.8	10.9	8.7
Approach LOS	B	B	B	A

Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976	4.976
Entry Flow, veh/h	506	850	403	108
Cap Entry Lane, veh/h	888	1232	831	578
Entry HV Adj Factor	0.980	0.980	0.980	0.980
Flow Entry, veh/h	496	833	395	106
Cap Entry, veh/h	871	1207	814	567
V/C Ratio	0.570	0.690	0.485	0.187
Control Delay, s/veh	12.3	12.8	10.9	8.7
LOS	B	B	B	A
95th %tile Queue, veh	4	6	3	1

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	9	424	318	435	41	54	280	30	53
Future Volume (vph)	9	424	318	435	41	54	280	30	53
Turn Type	Perm	NA	pm+pt	NA	Perm	NA	Perm	Perm	NA
Protected Phases		4	3	8		2			6
Permitted Phases	4		8		2		2	6	
Detector Phase	4	4	3	8	2	2	2	6	6
Switch Phase									
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	23.0	23.0	10.0	23.0	23.0	23.0	23.0	23.0	23.0
Total Split (s)	23.0	23.0	14.0	37.0	23.0	23.0	23.0	23.0	23.0
Total Split (%)	38.3%	38.3%	23.3%	61.7%	38.3%	38.3%	38.3%	38.3%	38.3%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0		0.0	0.0		0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0		5.0	5.0		5.0
Lead/Lag	Lag	Lag	Lead						
Lead-Lag Optimize?	Yes	Yes	Yes						
Recall Mode	None	None	None	None	C-Max	C-Max	C-Max	C-Max	C-Max
Act Effct Green (s)	17.5	17.5	31.5	31.5		18.5	18.5		18.5
Actuated g/C Ratio	0.29	0.29	0.52	0.52		0.31	0.31		0.31
v/c Ratio	0.03	0.90	0.86	0.51		0.20	0.43		0.20
Control Delay	15.4	43.0	35.3	11.2		17.1	4.6		14.7
Queue Delay	0.0	0.0	0.0	0.0		0.0	0.0		0.0
Total Delay	15.4	43.0	35.3	11.2		17.1	4.6		14.7
LOS	B	D	D	B		B	A		B
Approach Delay		42.5		20.9		7.8			14.7
Approach LOS		D		C		A			B

Intersection Summary	
Cycle Length: 60	
Actuated Cycle Length: 60	
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	
Natural Cycle: 60	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.90	
Intersection Signal Delay: 23.5	Intersection LOS: C
Intersection Capacity Utilization 66.9%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 1: Beacon Lite Rd & 2nd St



Intersection	
Int Delay, s/veh	3.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	10	0	5	25	0	57	2	272	74	149	231	5
Future Vol, veh/h	10	0	5	25	0	57	2	272	74	149	231	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	0	-	-	100	-	100	150	-	100
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	11	0	5	26	0	60	2	286	78	157	243	5

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	916	925	243	852	852	286	248	0	0	364	0	0
Stage 1	557	557	-	290	290	-	-	-	-	-	-	-
Stage 2	359	368	-	562	562	-	-	-	-	-	-	-
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	253	269	796	280	297	753	1318	-	-	1195	-	-
Stage 1	515	512	-	718	672	-	-	-	-	-	-	-
Stage 2	659	621	-	512	510	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	209	233	796	250	257	753	1318	-	-	1195	-	-
Mov Cap-2 Maneuver	209	233	-	250	257	-	-	-	-	-	-	-
Stage 1	514	445	-	717	671	-	-	-	-	-	-	-
Stage 2	606	620	-	442	443	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	18.8	13.5	0	3.3
HCM LOS	C	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1318	-	-	277	250	753	1195	-	-
HCM Lane V/C Ratio	0.002	-	-	0.057	0.105	0.08	0.131	-	-
HCM Control Delay (s)	7.7	-	-	18.8	21.1	10.2	8.5	-	-
HCM Lane LOS	A	-	-	C	C	B	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.2	0.3	0.3	0.5	-	-

Intersection	
Intersection Delay, s/veh	5.7
Intersection LOS	A

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	16	86	366	405
Demand Flow Rate, veh/h	16	88	374	413
Vehicles Circulating, veh/h	435	305	171	29
Vehicles Exiting, veh/h	7	240	280	364
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	4.2	4.4	6.3	5.5
Approach LOS	A	A	A	A

Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976	4.976
Entry Flow, veh/h	16	88	374	413
Cap Entry Lane, veh/h	885	1011	1159	1340
Entry HV Adj Factor	1.000	0.977	0.979	0.981
Flow Entry, veh/h	16	86	366	405
Cap Entry, veh/h	885	988	1135	1314
V/C Ratio	0.018	0.087	0.323	0.308
Control Delay, s/veh	4.2	4.4	6.3	5.5
LOS	A	A	A	A
95th %tile Queue, veh	0	0	1	1

Intersection	
Int Delay, s/veh	2.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	64	56	272	237	54	232
Future Vol, veh/h	64	56	272	237	54	232
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	-	100	100	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	67	59	286	249	57	244

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	644	286	0	0	535	0
Stage 1	286	-	-	-	-	-
Stage 2	358	-	-	-	-	-
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	437	753	-	-	1033	-
Stage 1	763	-	-	-	-	-
Stage 2	707	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	413	753	-	-	1033	-
Mov Cap-2 Maneuver	413	-	-	-	-	-
Stage 1	763	-	-	-	-	-
Stage 2	668	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	13	0	1.6
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	413	753	1033	-
HCM Lane V/C Ratio	-	-	0.163	0.078	0.055	-
HCM Control Delay (s)	-	-	15.4	10.2	8.7	-
HCM Lane LOS	-	-	C	B	A	-
HCM 95th %tile Q(veh)	-	-	0.6	0.3	0.2	-

Intersection	
Int Delay, s/veh	2.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	5	0	15	84	0	24	5	456	74	8	326	2
Future Vol, veh/h	5	0	15	84	0	24	5	456	74	8	326	2
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	-	-	-	-	-	-	200	-	150	150	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	5	0	16	88	0	25	5	480	78	8	343	2

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	902	928	344	858	851	480	345	0	0	558	0	0
Stage 1	360	360	-	490	490	-	-	-	-	-	-	-
Stage 2	542	568	-	368	361	-	-	-	-	-	-	-
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	259	268	699	277	297	586	1214	-	-	1013	-	-
Stage 1	658	626	-	560	549	-	-	-	-	-	-	-
Stage 2	525	506	-	652	626	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	246	265	699	268	293	586	1214	-	-	1013	-	-
Mov Cap-2 Maneuver	246	265	-	268	293	-	-	-	-	-	-	-
Stage 1	655	621	-	558	547	-	-	-	-	-	-	-
Stage 2	500	504	-	632	621	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	12.9	23.7	0.1	0.2
HCM LOS	B	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1214	-	-	479	305	1013	-	-
HCM Lane V/C Ratio	0.004	-	-	0.044	0.373	0.008	-	-
HCM Control Delay (s)	8	-	-	12.9	23.7	8.6	-	-
HCM Lane LOS	A	-	-	B	C	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.1	1.7	0	-	-

Intersection	
Intersection Delay, s/veh	6.2
Intersection LOS	A

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	21	113	563	353
Demand Flow Rate, veh/h	21	116	575	360
Vehicles Circulating, veh/h	448	500	13	95
Vehicles Exiting, veh/h	7	88	456	520
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	4.3	5.9	6.8	5.5
Approach LOS	A	A	A	A

Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976	4.976
Entry Flow, veh/h	21	116	575	360
Cap Entry Lane, veh/h	874	829	1362	1252
Entry HV Adj Factor	1.000	0.974	0.980	0.981
Flow Entry, veh/h	21	113	563	353
Cap Entry, veh/h	874	807	1334	1229
V/C Ratio	0.024	0.140	0.422	0.287
Control Delay, s/veh	4.3	5.9	6.8	5.5
LOS	A	A	A	A
95th %tile Queue, veh	0	0	2	1

Intersection	
Intersection Delay, s/veh	7.8
Intersection LOS	A

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	2
Conflicting Circle Lanes	2	2	2	2
Adj Approach Flow, veh/h	569	1053	87	620
Demand Flow Rate, veh/h	580	1074	89	632
Vehicles Circulating, veh/h	696	145	1085	348
Vehicles Exiting, veh/h	284	1029	191	103
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	20.3	1.4	8.5	6.8
Approach LOS	C	A	A	A

Lane	Left	Left	Bypass	Left	Left	Right
Designated Moves	LTR	LT	R	LTR	L	LTR
Assumed Moves	LTR	LT	R	LTR	L	LTR
RT Channelized			Free			
Lane Util	1.000	1.000		1.000	0.530	0.470
Follow-Up Headway, s	2.535	2.535		2.535	2.667	2.535
Critical Headway, s	4.328	4.328	768	4.328	4.645	4.328
Entry Flow, veh/h	580	306	1938	89	335	297
Cap Entry Lane, veh/h	786	1255	0.980	565	980	1056
Entry HV Adj Factor	0.981	0.979	753	0.981	0.981	0.981
Flow Entry, veh/h	569	300	1900	87	328	291
Cap Entry, veh/h	771	1229	0.396	554	961	1036
V/C Ratio	0.738	0.244	0.0	0.158	0.342	0.281
Control Delay, s/veh	20.3	5.1	A	8.5	7.4	6.2
LOS	C	A	2	A	A	A
95th %tile Queue, veh	7	1		1	2	1

Intersection	
Intersection Delay, s/veh	290
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	27	479	61	333	424	48	86	126	383	44	86	33
Future Vol, veh/h	27	479	61	333	424	48	86	126	383	44	86	33
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	28	504	64	351	446	51	91	133	403	46	91	35
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	208.7	458.3	210.9	30.1
HCM LOS	F	F	F	D

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	14%	5%	41%	27%
Vol Thru, %	21%	84%	53%	53%
Vol Right, %	64%	11%	6%	20%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	595	567	805	163
LT Vol	86	27	333	44
Through Vol	126	479	424	86
RT Vol	383	61	48	33
Lane Flow Rate	626	597	847	172
Geometry Grp	1	1	1	1
Degree of Util (X)	1.367	1.353	1.945	0.456
Departure Headway (Hd)	10.389	11.348	10.138	15.054
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	357	328	364	242
Service Time	8.389	9.348	8.138	13.054
HCM Lane V/C Ratio	1.754	1.82	2.327	0.711
HCM Control Delay	210.9	208.7	458.3	30.1
HCM Lane LOS	F	F	F	D
HCM 95th-tile Q	23.5	21.5	47.4	2.2

Intersection	
Intersection Delay, s/veh	22.1
Intersection LOS	C

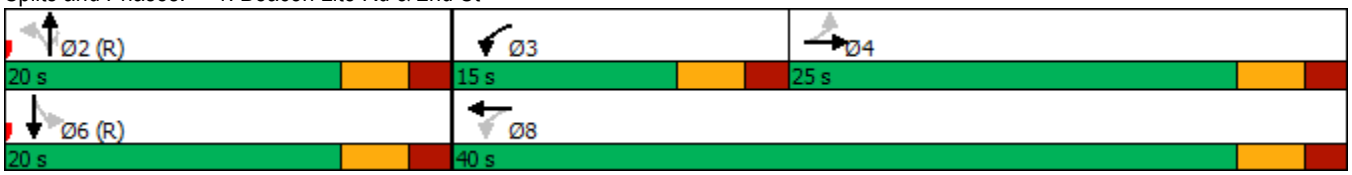
Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	596	848	627	172
Demand Flow Rate, veh/h	608	865	640	176
Vehicles Circulating, veh/h	498	258	590	906
Vehicles Exiting, veh/h	584	972	516	217
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	19.2	20.7	29.7	11.5
Approach LOS	C	C	D	B

Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976	4.976
Entry Flow, veh/h	608	865	640	176
Cap Entry Lane, veh/h	830	1061	756	548
Entry HV Adj Factor	0.980	0.980	0.980	0.978
Flow Entry, veh/h	596	848	627	172
Cap Entry, veh/h	814	1040	741	536
V/C Ratio	0.732	0.816	0.847	0.321
Control Delay, s/veh	19.2	20.7	29.7	11.5
LOS	C	C	D	B
95th %tile Queue, veh	7	10	10	1

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	27	479	333	424	86	126	383	44	86
Future Volume (vph)	27	479	333	424	86	126	383	44	86
Turn Type	Perm	NA	pm+pt	NA	Perm	NA	Perm	Perm	NA
Protected Phases		4	3	8		2			6
Permitted Phases	4		8		2		2	6	
Detector Phase	4	4	3	8	2	2	2	6	6
Switch Phase									
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	23.0	23.0	10.0	23.0	10.0	10.0	10.0	10.0	10.0
Total Split (s)	25.0	25.0	15.0	40.0	20.0	20.0	20.0	20.0	20.0
Total Split (%)	41.7%	41.7%	25.0%	66.7%	33.3%	33.3%	33.3%	33.3%	33.3%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0		0.0	0.0		0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0		5.0	5.0		5.0
Lead/Lag	Lag	Lag	Lead						
Lead-Lag Optimize?	Yes	Yes	Yes						
Recall Mode	None	None	None	None	C-Max	C-Max	C-Max	C-Max	C-Max
Act Effct Green (s)	19.7	19.7	34.7	34.7		15.3	15.3		15.3
Actuated g/C Ratio	0.33	0.33	0.58	0.58		0.26	0.26		0.26
v/c Ratio	0.10	0.93	0.84	0.47		0.59	0.57		0.42
Control Delay	14.9	45.4	31.7	8.7		27.1	6.1		20.3
Queue Delay	0.0	0.0	0.0	0.0		0.0	0.0		0.0
Total Delay	14.9	45.4	31.7	8.7		27.1	6.1		20.3
LOS	B	D	C	A		C	A		C
Approach Delay		44.0		18.2		13.6			20.3
Approach LOS		D		B		B			C

Intersection Summary	
Cycle Length: 60	
Actuated Cycle Length: 60	
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	
Natural Cycle: 60	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.93	
Intersection Signal Delay: 23.9	Intersection LOS: C
Intersection Capacity Utilization 84.4%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 1: Beacon Lite Rd & 2nd St



Intersection	
Int Delay, s/veh	7.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	10	0	5	94	0	213	2	399	72	131	382	15
Future Vol, veh/h	10	0	5	94	0	213	2	399	72	131	382	15
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	0	100	-	100	150	-	100
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	11	0	5	99	0	224	2	420	76	138	402	16

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1252	1178	402	1113	1118	420	418	0	0	496	0	0
Stage 1	678	678	-	424	424	-	-	-	-	-	-	-
Stage 2	574	500	-	689	694	-	-	-	-	-	-	-
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	149	191	648	186	207	633	1141	-	-	1068	-	-
Stage 1	442	452	-	608	587	-	-	-	-	-	-	-
Stage 2	504	543	-	436	444	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	87	166	648	166	180	633	1141	-	-	1068	-	-
Mov Cap-2 Maneuver	87	166	-	166	180	-	-	-	-	-	-	-
Stage 1	441	394	-	607	586	-	-	-	-	-	-	-
Stage 2	325	542	-	377	387	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	38.8	26.2	0	2.2
HCM LOS	E	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1141	-	-	122	166	633	1068	-	-
HCM Lane V/C Ratio	0.002	-	-	0.129	0.596	0.354	0.129	-	-
HCM Control Delay (s)	8.2	-	-	38.8	54.4	13.8	8.9	-	-
HCM Lane LOS	A	-	-	E	F	B	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.4	3.2	1.6	0.4	-	-

Intersection	
Intersection Delay, s/veh	7.8
Intersection LOS	A

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	16	323	498	556
Demand Flow Rate, veh/h	16	329	508	567
Vehicles Circulating, veh/h	652	441	152	103
Vehicles Exiting, veh/h	18	219	516	667
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	5.3	8.5	7.6	7.7
Approach LOS	A	A	A	A

Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976	4.976
Entry Flow, veh/h	16	329	508	567
Cap Entry Lane, veh/h	710	880	1182	1242
Entry HV Adj Factor	1.000	0.982	0.980	0.981
Flow Entry, veh/h	16	323	498	556
Cap Entry, veh/h	710	864	1158	1218
V/C Ratio	0.023	0.374	0.430	0.456
Control Delay, s/veh	5.3	8.5	7.6	7.7
LOS	A	A	A	A
95th %tile Queue, veh	0	2	2	2

Intersection	
Int Delay, s/veh	5.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	203	69	428	103	66	400
Future Vol, veh/h	203	69	428	103	66	400
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	-	100	100	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	214	73	451	108	69	421

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1010	451	0	0	559	0
Stage 1	451	-	-	-	-	-
Stage 2	559	-	-	-	-	-
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	266	608	-	-	1012	-
Stage 1	642	-	-	-	-	-
Stage 2	572	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	248	608	-	-	1012	-
Mov Cap-2 Maneuver	377	-	-	-	-	-
Stage 1	642	-	-	-	-	-
Stage 2	533	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	22.6	0	1.2
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	377	608	1012	-
HCM Lane V/C Ratio	-	-	0.567	0.119	0.069	-
HCM Control Delay (s)	-	-	26.3	11.7	8.8	-
HCM Lane LOS	-	-	D	B	A	-
HCM 95th %tile Q(veh)	-	-	3.4	0.4	0.2	-

Intersection	
Int Delay, s/veh	5.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	5	0	10	87	0	15	15	557	100	26	553	5
Future Vol, veh/h	5	0	10	87	0	15	15	557	100	26	553	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	200	-	150	150	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	5	0	11	92	0	16	16	586	105	27	582	5

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1318	1362	585	1262	1259	586	587	0	0	691	0	0
Stage 1	639	639	-	618	618	-	-	-	-	-	-	-
Stage 2	679	723	-	644	641	-	-	-	-	-	-	-
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	134	148	511	147	171	510	988	-	-	904	-	-
Stage 1	464	470	-	477	481	-	-	-	-	-	-	-
Stage 2	441	431	-	461	469	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	125	141	511	139	163	510	988	-	-	904	-	-
Mov Cap-2 Maneuver	125	141	-	139	163	-	-	-	-	-	-	-
Stage 1	457	456	-	469	473	-	-	-	-	-	-	-
Stage 2	420	424	-	438	455	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	20.2	67.8	0.2	0.4
HCM LOS	C	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	988	-	-	252	156	904	-	-
HCM Lane V/C Ratio	0.016	-	-	0.063	0.688	0.03	-	-
HCM Control Delay (s)	8.7	-	-	20.2	67.8	9.1	-	-
HCM Lane LOS	A	-	-	C	F	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.2	4	0.1	-	-

Intersection	
Intersection Delay, s/veh	8.4
Intersection LOS	A

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	16	108	707	614
Demand Flow Rate, veh/h	16	110	721	627
Vehicles Circulating, veh/h	716	619	33	110
Vehicles Exiting, veh/h	21	135	699	619
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	5.7	6.6	8.6	8.6
Approach LOS	A	A	A	A

Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976	4.976
Entry Flow, veh/h	16	110	721	627
Cap Entry Lane, veh/h	665	734	1334	1233
Entry HV Adj Factor	1.000	0.982	0.981	0.980
Flow Entry, veh/h	16	108	707	614
Cap Entry, veh/h	665	721	1309	1209
V/C Ratio	0.024	0.150	0.540	0.508
Control Delay, s/veh	5.7	6.6	8.6	8.6
LOS	A	A	A	A
95th %tile Queue, veh	0	1	3	3

Intersection	
Intersection Delay, s/veh	10.8
Intersection LOS	B

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	2
Conflicting Circle Lanes	2	2	2	2
Adj Approach Flow, veh/h	458	1374	194	868
Demand Flow Rate, veh/h	467	1401	197	885
Vehicles Circulating, veh/h	858	238	1201	725
Vehicles Exiting, veh/h	752	1160	124	125
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	19.5	4.1	13.5	16.2
Approach LOS	C	A	B	C

Lane	Left	Left	Bypass	Left	Left	Right
Designated Moves	LTR	LT	R	LTR	L	LTR
Assumed Moves	LTR	LT	R	LTR	L	LTR
RT Channelized			Free			
Lane Util	1.000	1.000		1.000	0.530	0.470
Follow-Up Headway, s	2.535	2.535		2.535	2.667	2.535
Critical Headway, s	4.328	4.328	789	4.328	4.645	4.328
Entry Flow, veh/h	467	612	1938	197	469	416
Cap Entry Lane, veh/h	685	1160	0.980	512	693	767
Entry HV Adj Factor	0.980	0.980	774	0.983	0.981	0.981
Flow Entry, veh/h	458	600	1900	194	460	408
Cap Entry, veh/h	671	1137	0.407	503	680	752
V/C Ratio	0.682	0.528	0.0	0.385	0.677	0.543
Control Delay, s/veh	19.5	9.3	A	13.5	19.0	13.0
LOS	C	A	2	B	C	B
95th %tile Queue, veh	5	3		2	5	3