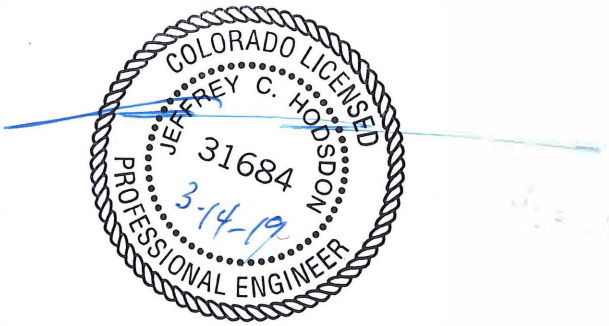
LSC TRANSPORTATION CONSULTANTS, INC.
545 East Pikes Peak Avenue, Suite 210
Colorado Springs, CO 80903
(719) 633-2868
FAX (719) 633-5430
E-mail: lsc@lsctrans.com
Website: http://www.lsctrans.com

See comment letter for PPR-19-009.

Monument Academy
Traffic Impact Study
(LSC #184820)
March 14, 2019

Traffic Engineer's Statement

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



Developer's Statement

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

Initial comments have been made on this report for the approval of location application. The balance of comments will be provided with the site development plan application PPR19009.

_____
Date

Add PCD File No. U192 /PPR19009

LSC TRANSPORTATION CONSULTANTS, INC.
545 East Pikes Peak Avenue, Suite 210
Colorado Springs, CO 80903
(719) 633-2868
FAX (719) 633-5430
E-mail: lsc@lsctrans.com
Website: http://www.lsctrans.com

March 14, 2019

Mr. Don Griffin
Monument Academy
1150 Village Ridge Point
Monument, CO 80132

RE: Monument Academy
El Paso County, Colorado
Traffic Impact Study
LSC #184820

Dear Mr. Griffin:

LSC Transportation Consultants, Inc. has prepared this traffic impact study for the proposed development to be located east of State Highway (SH) 83 and south of Walker Road in El Paso County, Colorado. The site location is shown in Figure 1.

REPORT CONTENTS

The report contains the following:

- Recent/current street and traffic conditions in the vicinity of the site for identification of existing and planned street widths, lane geometries, traffic controls, posted speed limits, street classification, etc.
- Existing traffic volumes at the key intersections in the vicinity of the site and estimates of 2040 background traffic volumes.
- The projected average weekday and peak-hour vehicle trips to be generated by the proposed development.
- The assignment of the projected trips to the existing and planned street system.
- The resulting short-term and 2040 total traffic volumes on the street system.
- The resulting traffic impacts. The traffic impacts have been quantified by determining the future levels of service at the intersection of SH 83/Walker, the future intersection of Walker Road and a proposed north-south collector, and the proposed site access point intersections.
- An estimate of the on-site vehicle stacking/queuing distances needed to accommodate buses and morning and afternoon peak parent drop-off and pick-up queues.
- Recommendations for street functional classification, traffic controls, and auxiliary turn lanes.

SITE DEVELOPMENT, LAND USE, AND ACCESS

The site is located south of Walker Road and east of SH 83. Access is proposed via an extension of Pinehurst Circle that will continue from the approved extension through the approved Walden development located east of the site to SH 83 about 1,675 feet south of Walker Road. This intersection would be restricted to right-in/right-out only. A new north-south Collector is planned to be extended north through the site to Walker Road about 700 feet east of SH 83. This intersection is planned to be constructed as a one-lane modern roundabout.

Short -Term Land Use and Access

The short-term development is planned to include a building that will house both a charter school and a YMCA. The short-term site plan is shown in Figure 2. At buildout the charter school is planned to support about 1,000 students. Phase 1 is planned to open in August 2020 and will comprise about 600 students in grades 6 to 9. Phase 2 is planned to open 2025 and will comprise an additional 400 students in grades 10-12.

The YMCA will also be opened in two phases. Phase 1 will be about 12,000 square feet of floor space and will include gyms, fitness centers, multi-purpose rooms, group exercise space, community meeting space, etc. The YMCA anticipates approximately 330 daily gate visits (members who scan in) with an additional 50-100 users such as community classes, school groups, etc. Phase 2 will be an additional 20,000 square feet comprising mostly a competitive aquatics center.

Two full-movement access points are proposed to the new north-south Collector and one full-movement access point is proposed to Pinehurst Circle. The north parking lot is planned for school staff and student parking. The southeast parking lot is planned for school staff and visitor parking. This parking area will also be the location of student pick-ups and drop-offs by private (parent) vehicles. The southwest lot will primarily be for the YMCA.

Long-Term Land Use and Access

The remaining portion of the site is planned to be developed with a mix of commercial, office, and residential land uses. Figure 3 shows the Year 20 Concept Master Plan. The potential future land uses assumed in this traffic analysis are shown in Table 1.

ROADWAY AND TRAFFIC CONDITIONS

Area Roadways

Figure 1 shows the roadways in the vicinity of the site. The major roadways are identified below followed by a brief description of each.

It appears that the proposed roundabout encroaches onto the property to the north. Will the developer purchase this land to allow for this? Provide discussion on this. Additionally provide a complete roundabout analysis.

- **State Highway 83** extends from Colorado Springs north to Parker and areas of southeast Denver. In the vicinity of the site, SH 83 is classified as a Regional Highway (R-A). At this location SH 83 is a two-lane rural highway with two- to four-foot shoulders and a speed limit of 60 miles per hour (mph). The intersection with Walker Road is signalized.

- **Highway 105** is a Principal Arterial that extends east from Interstate 25 to State Highway 83. Highway 105 is currently a two-lane roadway but the *Major Transportation Corridors Plan* (MTCP) shows a future four-lane cross section.

- **Walker Road** is a paved, "unimproved" rural roadway that extends east from Highway 83. Walker Road currently is a two-lane roadway. Walker Road is shown as a 4-lane Minor Arterial roadway on the *MTCP 2040 Roadway Plan*. LSC and the applicant have requested that County staff investigate the reasons behind the MTCP classification as a four-lane roadway and a potential revision to the MTCP to change Walker Road to a two-lane roadway rather than a four-lane roadway in the future.

Provide justification as to why it should be a two-lane roadway as opposed to a 4-lane per MTCP 2040 Roadway plan

Existing Traffic Volumes

Figure 4 shows the recent traffic volumes at the intersection of SH 83/Walker. In addition to the typical morning and afternoon peak hours, Figure 4 also shows the existing traffic volumes during the typical school dismissal time (2:00 to 3:00 pm). These traffic volumes were based on traffic counts conducted by LSC in August 2018. The 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 Delay Ranges

Level of Service	Signalized Intersections		Unsignalized Intersections
	Average Control Delay (seconds per vehicle)	V/C[1]	Average Control Delay (seconds per vehicle)[2]
A	10.0 sec or less	less than 0.60	10.0 sec or less
B	10.1-20.0 sec	0.60-0.69	10.1-15.0 sec
C	20.1-35.0 sec	0.70-0.79	15.1-25.0 sec
D	35.1-55.0 sec	0.80-0.89	25.1-35.0 sec
E	55.1-80.0 sec	0.90-0.99	35.1-50.0 sec
F	80.1 sec or more	1.00 and greater	50.1 sec or more

(1) Source: *Transportation Research Circular 212*
(2) 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 intersection of SH 83/Highway 105/Walker was analyzed to determine the existing levels of service using Synchro. Figure 4 shows the level of service analysis results. As shown on the figure, all movements this intersection are level of service D or better during the peak hours. The level of service (LOS) reports are attached.

BACKGROUND TRAFFIC

Background traffic is the traffic estimated to be on the adjacent roadways and at adjacent intersections without the proposed development's trip generation of site-generated traffic volumes. Background traffic includes the through traffic and the traffic generated by nearby developments but assumes zero traffic generated by the site.

Figure 5 shows the short-term (year 2025) background traffic volumes. The background volumes are estimate by LSC based on the existing traffic volumes shown in Figure 4 with a yearly growth rate of two percent per year.

Figure 6a shows the projected 2040 background traffic volumes. The 2040 background traffic volumes are estimates by LSC based on the Colorado Department of Transportation (CDOT) twenty-year growth factor on SH 83 adjacent to the site and previous work completed by LSC in the area including work done for the Walden development. The 2040 background volumes assume full buildout of the street network within the site including the extension of Pinehurst Circle to a right-in/right-out-only intersection with SH 83 and the proposed north-south collector from Pinehurst Circle to Walden Road.

Figure 6b shows the lane geometry, traffic control, and level of service at the key area intersections based on the 2040 background traffic volumes.

TRIP GENERATION

Estimates of the traffic volumes expected to be generated by the site have been made using the nationally published trip generation rates found in *Trip Generation, 10th Edition, 2017* by the Institute of Transportation Engineers (ITE). Table 1 shows the results of the trip generation estimates. Off-peak trip generation rates are based on hourly distribution tables published by ITE in August 2018. The trip generation estimate for the future gas station located within Tract B is based on ITE Land Use 945 Gasoline/Service Station with a Convenience Market. When a final development plan is proposed it should be determined if the trip generation rates for Land Use 960 Super Convenience Market/Gas Station would be more appropriate.

The total number of vehicle-trips generated by the future 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 1 shows the percentage of trips assumed to be internal to the site for each land use. The internal trip reduction is an estimate by LSC based on The National Cooperative Highway Research Program (NCHRP) internal trip capture estimation tool.

The total number of external new impact vehicle-trips generated by the site has 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 on Table 1 are from *the Trip Generation Handbook - An ITE Proposed Recommended Practice, 3rd Edition, 2017* by ITE.

As shown in Table 1, in the short term, with development of the school and YMCA only, the site is projected to generate about 3,392 new vehicle-trips on the average weekday, with about one-half of the vehicles entering and one-half of the vehicles exiting in a 24-hour period. During the morning peak hour, which was assumed to occur between 7:45 and 8:45 a.m., about 551 vehicles would enter and 344 vehicles would exit the site. During the afternoon peak hour of the school, which was assumed to occur for one hour between 2:00 to 3:00 p.m., about 228 vehicles would enter and 309 vehicles would exit the site. During the afternoon peak hour of the adjacent street traffic, which generally occurs for one hour between 4:30 and 6:30 p.m., about 121 vehicles would enter and 151 vehicles would exit the site.

At buildout the site is projected to generate about 14,149 new vehicle-trips on the average weekday, with about one-half of the vehicles entering and one-half of the vehicles exiting in a 24-hour period. During the morning peak hour about 1,148 vehicles would enter and 820 vehicles would exit the site. During the afternoon peak hour of the school, which was assumed to occur for one hour between 2:00 to 3:00 p.m., about 852 vehicles would enter and 932 vehicles would exit the site. During the afternoon peak hour of the adjacent street traffic about 797 vehicles would enter and 896 vehicles would exit the site.

TRIP DISTRIBUTION AND ASSIGNMENT

The directional distribution of the site-generated traffic volumes on the street and roadway system serving the site is one of the most important factors in determining the site's traffic impacts. Figure 7 shows the directional distribution estimates for the Phase 1 and 2 site-generated traffic volumes. Figure 8 shows the long-term directional distribution estimates for the future land uses. The estimates have been based on the following factors: the recent traffic count data; the site's location with respect to the nearby residential, employment, commercial, and activity centers; the site's proposed land use; the site's proposed access points; and the phasing of the existing and future roadway system serving the site. The short-term distribution estimate assumes the new section of Pinehurst Circle has been constructed east from SH 83 to the east boundary of the site but does not connect to the Walden development. The long-term distribution estimate assumes Pinehurst Circle has been completed from Walden Way to the east boundary of the site.

When the distribution percentages (from Figures 7 and 8) were applied to the trip generation estimates (from Table 1), the site-generated traffic volumes on the area roadways were determined. Figure 9 shows the short-term Phases 1 and 2 only site-generated traffic volumes. These volumes assume buildout of the school and the YMCA only. Figure 10 shows the long-term site-generated traffic volumes. These volumes assume buildout of the site.

PROJECTED TOTAL TRAFFIC

Figure 11a shows the short-term total (Phases 1 and 2 only) traffic volumes. These volumes are the sum of the short-term background traffic volumes (from Figure 5) plus the short-term (Phases 1 and 2 only) site-generated traffic volumes (from Figure 9). These volumes assume the section of Pinehurst Circle has been constructed from SH 83 through the site to the school access only and does not connect to the existing section south of Walden Way.

Figure 11b shows the projected level of service based on the short-term total volumes for the key intersections in the vicinity of the site.

Figure 12a shows the 2040 total traffic volumes. These volumes are the sum of the 2040 background traffic volumes (from Figure 6a) plus the long-term buildout site-generated traffic volumes (from Figure 10). These volumes assume Pinehurst Circle has been extended from its current terminus through the approved Walden development and the currently proposed development to SH 83.

Figure 12b shows the projected level of service based on the 2040 total volumes for the key intersections in the vicinity of the site.

PROJECTED LEVELS OF SERVICE

The intersection of SH 83/Walker, the proposed intersections of the new north-south Collector with Walker Road and Pinehurst Circle and the Phase 1 and 2 site access points have been analyzed to determine the projected levels of service for the short-term and 2040 background and total traffic volumes based on the signalized method of analysis from Synchro and the unsignalized method of analysis procedures outlined in the *Highway Capacity Manual, 2010 Edition* by the Transportation Research Board. The level of service reports are attached. The results of the analysis are shown in Figures 5, 6b, 11b and 12b.

SH 83/Walker/Highway 105

All movements at the signal-controlled SH 83/Walden/Highway 106 intersection are projected to operate at a level of service D or better based on the short-term total traffic conditions. This analysis assumes the addition of eastbound and westbound left-turn lanes approaching this intersection and protected phasing for those movements. **Note: The LOS analysis results are based on signal timing assumptions within the model – specifically the allowable signal phase time for the side street. CDOT would need to find these assumptions acceptable for use in the field.**

Based on the projected 2040 total traffic volumes and the lane geometry shown in Figures 12a and b, the intersection of SH 83/Walker/Highway 105 is projected to operate at an overall LOS D during the peak hours. The westbound and southbound left-turn movements and the eastbound through movement are projected to operate at LOS E during the morning peak hour. These movements have projected delays in the LOS E range simply because of the likelihood of arrival at the traffic signal at the beginning of the red phase at an intersection with many phases and a long cycle length. This movement would not be considered "failing" since the volume-to-capacity ratio is less than one. The justification is that to progress through traffic along an arterial corridor, the traffic signal offsets and left-turn and side street phase times have been adjusted to favor the through traffic band, which can often result in higher delay for the left-turn movements even though there is sufficient capacity for them. This analysis is based on the trip generation estimate for the future land uses shown in Table 1. These land uses are conceptual only and are subject to change. The need for future improvements at the intersection of SH 83/Walker should be reevaluated when development plans for the future tracts are submitted.

Walker/New North-South Collector

The proposed intersection of Walker Road and the new north-south Collector is planned to be constructed as a one-lane modern roundabout. All movements at this intersection are projected to operate at LOS C or better during the peak hours based on the projected short-term and 2040 total traffic volumes.

The proximity of the existing Shannon Road to the proposed roundabout would adversely impact traffic along Walker Road. Please address this along with the future realignment of Shannon Road.

Pinehurst/New North-South Collector

The intersection of Pinehurst Circle and the new north-south Collector is projected to operate at LOS D or better for all movements during the peak hours based on the projected short-term total traffic volumes as a stop-sign-controlled intersection.

By 2040, if this intersection remains stop-sign controlled, the southbound left-turn movement is projected to operate at LOS F during the morning peak hour and LOS D during the school afternoon peak hour and the afternoon peak hour of the adjacent street traffic. If this intersection is converted to all-way stop-sign control, all movements are projected to operate at LOS C or better during the peak hours. If this intersection were reconstructed as a one-lane modern roundabout all movements are projected to operate at LOS B or better. The 2040 total traffic volumes are based on the trip generation estimate for the future land uses shown in Table 1. These land uses are conceptual only and are subject to change. Traffic control for this intersection should be reevaluated when development plans for the future tracts are submitted.

Site Access Points

Provide an exhibit of the sight distance for the access points on Pinehurst and the new north-south collector.

The site access points to Pinehurst Circle and the new north-south Collector are projected to operate at LOS D or better for all movements during the peak hours based on the projected short-term total traffic volumes as stop-sign-controlled intersections.

The 2040 total traffic volumes assume access to Tract B aligning with the proposed school and YMCA access points on the new north-south Collector. Based on this assumption and based on the trip generation estimate for the future land uses shown in Table 1, the eastbound approach at the school access (to Tract B) is projected to operate at LOS E during the morning and afternoon school peak hours. These land uses are conceptual only and are subject to change. Traffic control for this intersection should be reevaluated when development plans for the future tracts are submitted.

Please address access to Tract C and the impacts to Pinehurst Circle.

Provide a road classification exhibit.

Street Classifications

Provide a deviation for this road classification with proper justification.

Both the proposed north/south collector and Pinehurst from Highway 83 to the southeast school access are proposed as "Hybrid"/Modified Rural Major Collector roads. These would be similar to an Urban Non-Residential Collector in terms of design speed, function, and intersection spacing, but would be constructed with roadside ditch sections instead of curb and gutter. Pavement design would be based on the ADT and anticipated vehicle mix.

- List all deviations from the ECM that the applicant will be making.
- State whether the MTCP or other approved corridor study calls for the construction of improvements in the immediate area.
- If applicable list other studies in the area of interest within the past 5 years. State whether the current study is consistent with those studies and explain any discrepancies. If there are none then state as such.
- Provide a pedestrian/bicycle route analysis.
- State what the current applicable transportation impact fees are and what option will be selected for payment. If there are none or it is not applicable then state as such.

CONCLUSIONS AND RECOMMENDATIONS

Trip Generation

- Following Phases 1 and 2 only with development of the proposed school and YMCA only, the site is projected to generate about 3,392 new vehicle-trips on the average weekday, with about one-half of the vehicles entering and one-half of the vehicles exiting in a 24-hour period. During the morning peak hour, which generally occurs for one hour between 6:30 and 8:30 a.m., about 551 vehicles would enter and 344 vehicles would exit the site. During the afternoon peak hour of the school, which was assumed to occur for one hour between 2:00 and 3:00 p.m., about 228 vehicles would enter and 309 vehicles would exit the site. During the afternoon peak hour of the adjacent street traffic, which generally occurs for one hour between 4:30 and 6:30 p.m., about 121 vehicles would enter and 151 vehicles would exit the site.

- At buildout the site is projected to generate about 14,149 new vehicle-trips on the average weekday, with about one-half of the vehicles entering and one-half of the vehicles exiting in a 24-hour period. During the morning peak hour about 1,148 vehicles would enter and 820 vehicles would exit the site. During the afternoon peak hour of the school, which was assumed to occur for one hour between 2:00 to 3:00 p.m., about 852 vehicles would enter and 932 vehicles would exit the site. During the afternoon peak hour of the adjacent street traffic about 797 vehicles would enter and 896 vehicles would exit the site.

Projected Levels of Service

- All movements at the signal-controlled SH 83/Walden/Highway 106 intersection are projected to operate at a level of service D or better based on the short-term total traffic conditions. This analysis assumes the addition of eastbound and westbound left-turn lanes approaching this intersection and protected phasing for those movements. **Note: The LOS analysis results are based on signal timing assumptions within the model – specifically the allowable signal phase time for the side street. CDOT would need to find these assumptions acceptable for use in the field.**

- The signal-controlled SH 83/Walker/Highway 105 intersection is projected to operate at a level of service D overall or better based on the 2040 background and total traffic conditions. The eastbound through and westbound and southbound left-turn movements are projected to operate at LOS E during the morning peak hour and LOS D or better during the other hours analyzed. All other movements are projected to operate at LOS D or better. This analysis assumes the addition of eastbound and westbound left-turn lanes approaching this intersection and protected phasing for those movements. By 2040 two northbound and two southbound through lanes and potentially dual northbound and westbound left-turn lanes will be needed at this intersection to maintain an acceptable level of service. This intersection should be reevaluated when development plans for the future tracts within Walden North are submitted.

Figure 12b indicates a single northbound lane.

Please indicate the level of service

- The proposed one-lane modern roundabout intersection of Walker Road and the new north-south Collector is projected to operate at a satisfactory level of service during the peak hours based on the projected short-term and 2040 total traffic volumes.

- The site access points to Pinehurst Circle and the new north-south Collector and the intersection of Pinehurst Circle and the new north-south Collector are projected to operate at a satisfactory level of service as stop-sign-controlled intersections based on the projected short-term total traffic volumes. Traffic control for these intersections may need to be reevaluated when development plans for the future tracts are submitted.

Traffic Circulation

Provide a traffic circulation analysis of the school.

Provide discussion of 2040 volumes

- Exiting traffic at the southeast school access to Pinehurst Circle will likely need to be restricted to right-out traffic turning movements only to prevent a significant amount of cut-through traffic on Pinehurst Circle for motorists wishing to travel south. Pinehurst Circle is a Rural Local road through the Walden Preserve development to the south.

Recommended Auxiliary Turn Lanes

- Table 3 shows a summary of the off-site improvements needed in the vicinity of the site. Table 3 also identifies the time frame each improvement will likely be needed and the party responsible for that improvement.

- The proposed future access point to SH 83 and any future improvements to the intersection of SH 83/Walker/Highway 105 will require a Colorado Department of Transportation (CDOT) Access permit. Any design features or elements needed for these improvements including those needed to prohibit left turns at the proposed access will be addressed through the access permit process.

- Based on the existing traffic volumes and the criteria contained in the *El Paso County Engineering Criteria Manual (ECM) eastbound and westbound left-turn lanes and a westbound right-turn lane are currently required on Walker Road and Highway 105 approaching SH 83*. This is an existing deficiency based on the turning volume thresholds requiring turn lanes.

- Based on the projected short-term total traffic volumes and the criteria contained in the *State of Colorado Highway Access Code*, a northbound right-turn deceleration lane would be required on SH 83 approaching Pinehurst Circle. Based on a posted speed limit of 60 miles per hour, the prescribed lane length for the deceleration lane is 400 feet long plus a 300-foot taper.

- Based on the projected short-term total traffic volumes and the criteria contained in the *State of Colorado Highway Access Code*, a northbound right-turn acceleration lane would be

required on SH 83 at Pinehurst Circle. Based on a posted speed limit of 60 miles per hour, the prescribed lane length for the acceleration lane is 870 feet long plus a 300-foot taper. This lane would be constructed to connect to the existing northbound right-turn deceleration lane approaching Walker Road and, as such, the lane would be a continuous acceleration/ deceleration lane between Pinehurst Circle and Walker Road.

- No auxiliary turn lanes would be required on Walker Road approaching the proposed north-south Collector as this intersection is planned to be designed as a one-lane modern roundabout.

- Based on the projected short-term total traffic volumes and the criteria contained in the ECM, an eastbound left-turn lane would be required on Pinehurst Circle approaching the north-south Collector. Based on a design speed limit of 40 miles per hour, the prescribed lane length for the deceleration lane is 455 feet long (including 300 feet of stacking distance) plus a 160-foot taper. This turn lane would not be needed if this intersection is constructed as a one-lane modern roundabout.

- Based on the projected short-term total traffic volumes and the criteria contained in the *El Paso County Engineering Criteria Manual* (ECM), a westbound right-turn deceleration lane would be required on Pinehurst Circle approaching the north-south Collector. Based on a design speed limit of 40 miles per hour, the prescribed lane length for the deceleration lane is 155 feet long plus a 160-foot taper. This turn lane would not be needed if this intersection is constructed as a one-lane modern roundabout.

- Based on the projected 2040 total traffic volumes and the criteria contained in the ECM, an eastbound left-turn lane would be required on Pinehurst Circle approaching the site access point. Based on a design speed limit of 40 miles per hour, the prescribed lane length for the deceleration lane is 465 feet long (including 310 feet of stacking distance) plus a 160-foot taper.

- Based on the projected 2040 total traffic volumes and the criteria contained in the ECM, westbound right-turn lanes would **not** be required on Pinehurst Circle approaching the site access point.

- Based on the projected short-term total traffic volumes and the criteria contained in the ECM, a southbound left-turn lane would be required on the north-south Collector approaching the north (school) site access point. Based on a design speed limit of 40 miles per hour, the prescribed lane length for the lane is 255 feet long (including 100 feet of stacking distance) plus a 160-foot taper.

- Based on the projected short-term total traffic volumes and the criteria contained in the ECM, a southbound left-turn lane would be required on the north-south Collector approaching the south (YMCA) site access point. Based on a design speed limit of 40 miles per hour, the

prescribed lane length for the lane is 205 feet long (including 50 feet of stacking distance) plus a 160-foot taper.

- Based on the projected short-term total traffic volumes and the criteria contained in the ECM, a northbound right-turn deceleration lane would be required on the north-south Collector approaching the north (school) and south (YMCA) site access points. Based on a design speed limit of 40 miles per hour, the prescribed lane length for these lanes is 155 feet long plus a 160-foot taper.

- Additional auxiliary turn lanes, and potentially additional second through lanes on one or two approaches at SH 83/Walker, may be needed with development of Tracts B-E. The required lane and turn lane lengths should be determined when more detailed plans are submitted for these tracts.

* * * * *

Please contact me if you have any questions or need further assistance.

Sincerely,

LSC TRANSPORTATION CONSULTANTS, INC.

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

JCH:KDF:bjwb

Enclosures: Tables 1 and 3
Figures 1-12b
Traffic Count Reports
Level of Service Reports

Table 1
Trip Generation Estimate
Monument Academy

Tract	Land Use Code	Land Use Description	Trip Generation Units	Trip Generation Rates [1] Average Weekday Traffic	Morning Peak Hour In	Morning Peak Hour Out	Mid-Afternoon Peak Hour In	Mid-Afternoon 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	Mid-Afternoon Peak Hour In	Mid-Afternoon Peak Hour Out	Afternoon Peak Hour In	Afternoon Peak Hour Out	Internal Trips[2] (%)	Total "External" Trips Generated Average Weekday Traffic	Morning Peak Hour In	Morning Peak Hour Out	Mid-Afternoon Peak Hour In	Mid-Afternoon Peak Hour Out	Afternoon Peak Hour In	Afternoon Peak Hour Out	Passby Trips[3] (%)	Average Weekday Traffic
Short-Term Land Uses																											
Phase 1 - Initial Land Uses																											
A	536	Private School (K-12)	600 Students	2.48	0.49	0.31	0.21	0.30	0.07	0.10	1,488	291	186	128	177	44	58	0%	1,488	291	186	128	177	44	58	0%	1,488
	495	Recreational Community Center	12 KSF[4]	28.52	2.05	1.06	0.46	0.43	1.51	1.70	342	25	13	5	5	18	20	0%	342	25	13	5	5	18	20	0%	342
										Phase 1 Total	**1,830**	**316**	**199**	**133**	**182**	**62**	**78**		**1,830**	**316**	**199**	**133**	**182**	**62**	**78**		**1,830**
Phase 2 (Future) - Additional Land Uses																											
A	536	Private School (K-12)	400 Students	2.48	0.49	0.31	0.21	0.30	0.07	0.10	992	194	124	86	118	29	39	0%	992	194	124	86	118	29	39	0%	992
	495	Recreational Community Center	20 KSF	28.52	2.05	1.06	0.46	0.43	1.51	1.70	570	41	21	9	9	30	34	0%	570	41	21	9	9	30	34	0%	570
										Phase 2 Total	**1,562**	**235**	**145**	**95**	**127**	**59**	**73**		**1,562**	**235**	**145**	**95**	**127**	**59**	**73**		**1,562**
										Tract A Total (Phases 1 and 2)	**3,392**	**551**	**344**	**228**	**309**	**121**	**151**		**3,392**	**551**	**344**	**228**	**309**	**121**	**151**		**3,392**
Long-Term/Future - Additional Land Uses																											
	945	Gasoline/Service Station with Convenience Market	5 KSF	1440.02	38.75	37.24	46.80	46.08	45.06	43.29	7,200	194	186	234	230	225	216	15%	6,120	165	158	199	196	191	184	56%	2,693
	820	Shopping Center	57 KSF	71.94	1.96	1.20	3.20	3.31	3.02	3.27	4,105	112	69	183	189	172	187	15%	3,489	95	59	156	161	146	159	34%	2,303
	934	Fast-Food Restaurant with Drive-Through Window	5 KSF	470.95	20.50	19.69	13.66	15.07	16.99	15.68	2,355	102	98	68	75	85	78	15%	2,002	87	83	58	64	72	66	50%	1,001
B	932	High-Turnover (Sit-Down) Restaurant	4 KSF	112.18	5.47	4.47	2.19	2.69	6.06	3.71	449	22	18	9	11	24	15	15%	382	19	15	8	9	20	13	43%	218
	912	Drive-in Bank	10 KSF	100.03	5.51	3.99	4.65	4.70	10.23	10.23	1,000	55	40	47	47	102	102	15%	850	47	34	40	40	87	87	35%	553
	710	General Office Building	57 KSF	10.79	1.21	0.20	0.44	0.35	0.19	0.98	616	69	11	25	20	11	56	15%	524	59	9	21	17	9	48	0%	524
	720	Medical-Dental Office Building	61 KSF	36.98	1.84	0.52	1.68	1.70	0.96	2.46	2,255	112	32	103	104	58	150	15%	1,917	95	27	88	88	49	128	0%	1,917
										Total Tract B	**17,980**	**666**	**454**	**669**	**676**	**677**	**804**		**15,284**	**567**	**385**	**570**	**575**	**574**	**685**		**9,209**
C	210	Single-Family Detached Housing	164 DU[5]	9.44	0.19	0.56	0.33	0.29	0.62	0.37	1,548	30	91	54	48	102	60	0%	1,548	30	91	54	48	102	60	0%	1,548
										Grand Total	**22,920**	**1,247**	**889**	**951**	**1,033**	**900**	**1,015**		**20,224**	**1,148**	**820**	**852**	**932**	**797**	**896**		**14,149**

Notes:

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

(2) See attached NCHRP 684 Internal Trip Capture Estimation Tool

(3) Source: "Trip Generation Handbook - An ITE Proposed Recommended Practice, 3rd Edition, 2017" by ITE

(4) KSF = thousand square feet of floor space

(5) DU = dwelling unit

Source: LSC Transportation Consultants, Inc.

Table 3
Monument Academy
Roadway Improvements

Item #	Improvement	Timing	Responsibility
	Roadway Segment Improvements		
1	Construct new north-south Collector from Pinehurst Circle to Walker Road as a "Hybrid"/Modified Rural Major Collector(1) roadway.	**Phase 1**	Monument Academy
2	Construct Pinehurst Circle from SH 83 to east boundary of the Monument Academy site as a "Hybrid"/Modified Rural Major Collector* roadway.	**Phase 1**	Monument Academy
3	Construct Pinehurst Circle from current terminus to east boundary of the Monument Academy site as a Rural Local roadway.	Long Term	Walden
	SH 83/Walker/Highway 105		
4	Add eastbound and westbound left-turn lanes.	**Phase 1**	Monument Academy
5	Add westbound right-turn deceleration lane.	**Phase 1**	Monument Academy
6	Add a 2nd westbound left-turn lane.	Long Term (to be determined with the future development plans for Tracts B-E)	Future Developer
7	Add a 2nd northbound left-turn lane.	Long Term (to be determined with the future development plans for Tracts B-E)	Future Developer
8	Add a 2nd eastbound through-lane on the approach to the intersection for capacity at the intersection. The two "receiving" eastbound through lanes east of the intersection would merge back to one eastbound through lane before the proposed roundabout on Walker to the east **or** this lane could potentially end at the roundabout as a right-turn "bypass" lane or exclusive eastbound right-turn-only lane at the roundabout.	Long Term (to be determined with the future development plans for Tracts B-E)	Future Developer
9	Add a 2nd southbound through-lane on the approach to the intersection for capacity at the intersection (the two "receiving" through lanes south of the intersection would merge back to one southbound through lane to the south.	Long Term (to be determined with the future development plans for Tracts B-E)	Future Developer
	SH 83/Pinehurst Circle		
10	Construct new intersection as a restricted right-in/right-out access (right-turn island as designed may require a waiver to the *State of Colorado Highway Access Code*).	**Phase 1**	Monument Academy
11	Construct northbound right-turn deceleration lane on SH 83 approaching Pinehurst Circle.	**Phase 1**	Monument Academy
12	Construct northbound right-turn acceleration lane on SH 83 at Pinehurst Circle. Note: This would result in a "continuous" northbound acceleration/deceleration lane between Pinehurst Circle and Walker Road.	**Phase 1**	Monument Academy
	Walker/New North-South Collector		
13	Construct new intersection as a one-lane modern roundabout.	**Phase 1**	Monument Academy
	Pinehurst/New North-South Collector		
14	Construct a westbound left-turn lane on Pinehurst approacing the new north-south Collector (not needed if this intersection is constructed as a modern one-lane roundabout).	**Phase 1**	Monument Academy
15	Construct as eastbound right-turn deceleration lane on Pinehurst approacing the new north-south Collector (not needed if this intersection is constructed as a modern one-lane roundabout).	**Phase 1**	Monument Academy
16	Potential future one-Lane roundabout (if needed for acceptable southbound left turn level of service in the future).	Long Term (to be determined with the development plan for Tract B)	Future Developer
	Pinehurst/School Access		
17	Construct a westbound left-turn lane on Pinehurst approacing the school site access.	**Phase 1**	Monument Academy
18	Implement measures to effectively force a right-turn only for southbound traffic (exiting the school). If the school can effectively allow left turns only by residents north of Hodgen Road (and east of SH 83) while prohibiting all other left turning traffic, that would be acceptable.	With Pinehurst Circle connection to its north terminus within Walden Preserve.	Monument Academy
	New North-South Collector/North (School) Access		
19	Construct a southbound left-turn lane(2) on the new north-south Collector approaching the north (school) access.	**Phase 1**	Monument Academy
20	Construct a northbound right-turn deceleration lane on the new north-south Collector approaching the north (school) access.	**Phase 1**	Monument Academy
21	Construct a northbound left-turn lane(2) on the new north-south Collector approaching the future commercial access alinging with the north (school) access	Long Term (to be determined with the development plan for Tract B)	Future Developer
22	Construct a southbound right-turn deceleration lane on the new north-south Collector approaching the future commercial access alinging with the north (school) access.	Long Term (to be determined with the development plan for Tract B)	Future Developer
	New North-South Collector/South (YMCA) Access		
23	Construct a southbound left-turn lane(2) on the new north-south Collector approaching the south (YMCA) access.	**Phase 1**	Monument Academy
24	Construct a northbound right-turn deceleration lane on the new north-south Collector approaching the south (YMCA) access.	**Phase 1**	Monument Academy
25	Construct a northbound left-turn lane(2) on the new north-south Collector approaching the future commercial access alinging with the south (YMCA) access.	Long Term (to be determined with the development plan for Tract B)	Monument Academy
26	Construct a southbound right-turn deceleration lane on the new north-south Collector approaching the future commercial access alinging with the south (YMCA) access.	Long Term (to be determined with the development plan for Tract B)	Future Developer

Notes:

(1) The proposed "Hybrid"/Modified Rural Major Collector would be similar to an Urban Non-Residential Collector in terms of design speed, function and intersection spacing, but would be constructed with roadside ditch sections instead of curb and gutter. Pavement design would be based on the ADT and anticipated vehicle mix.

(2) The Standard Rural Major Collecotor Cross-section does not include a median that could be used for these left-turn lanes. It is likely that at buildout a full lane width lane will be needed for left-turn lanes for the entire lengh of the new north-south Collector.

Source: LSC Transportation Consultants, Inc.

should this be westbound?

Should this be eastbound

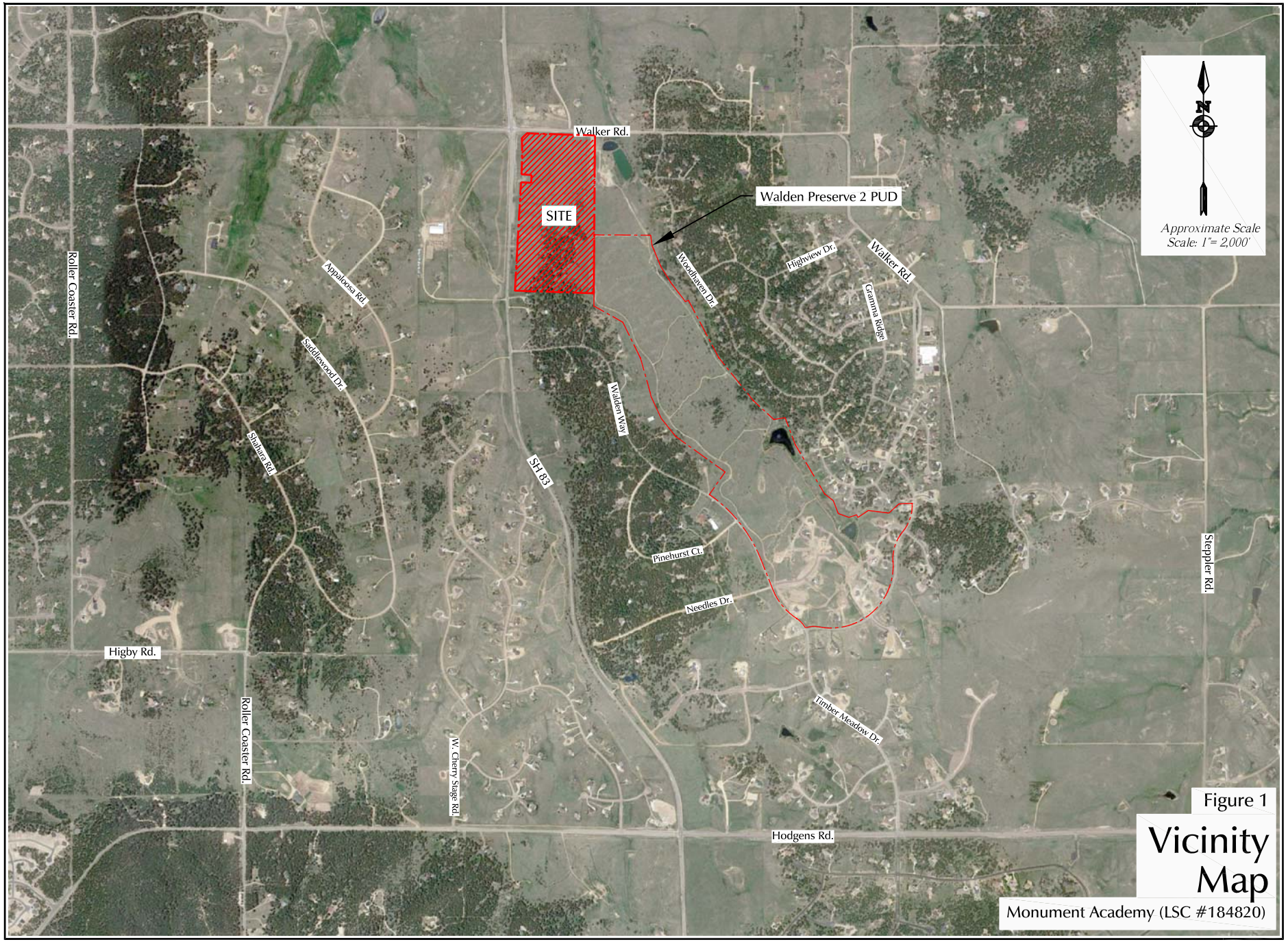


Figure 1

Vicinity Map

Monument Academy (LSC #184820)

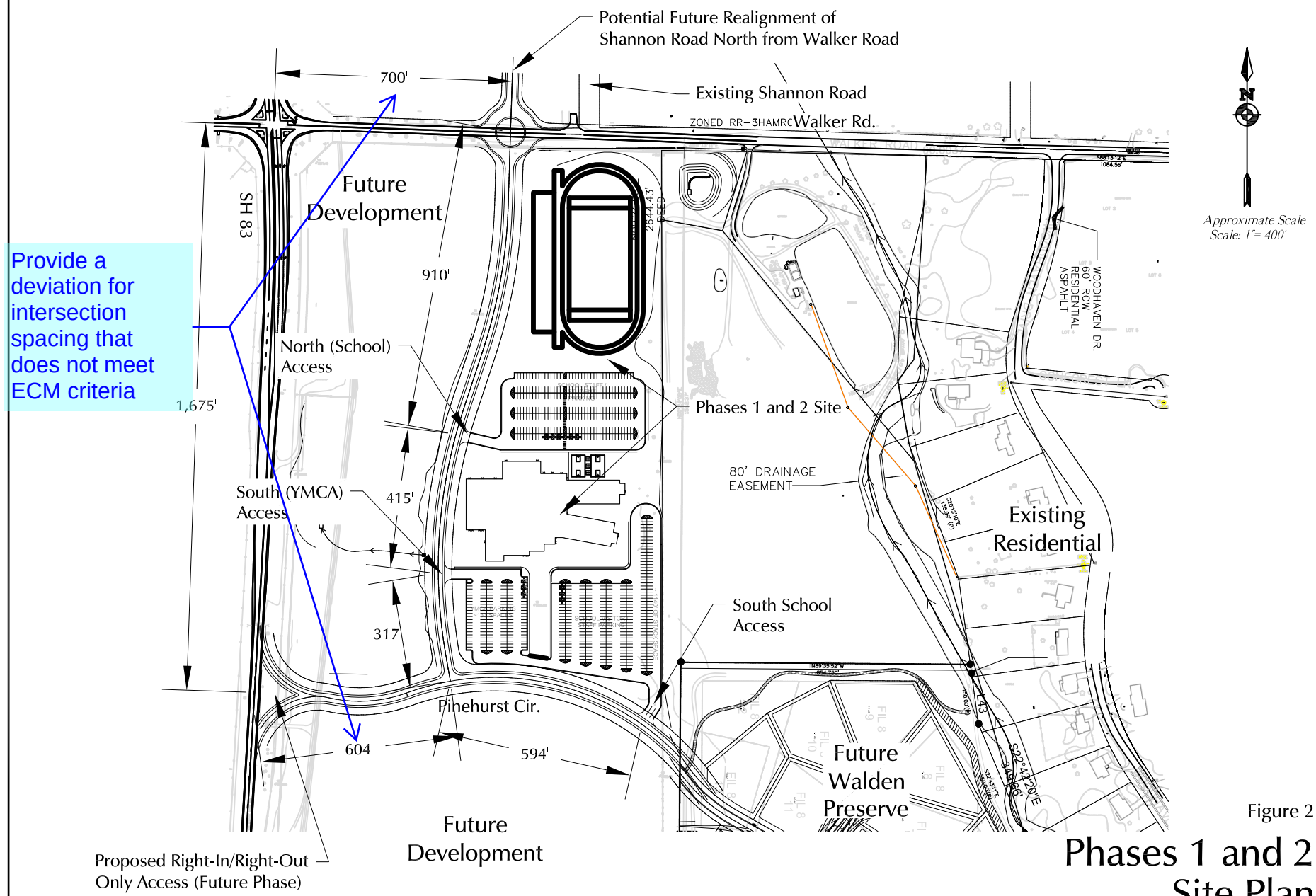


Figure 2

Phases 1 and 2 Site Plan

Monument Academy (LSC #184820)

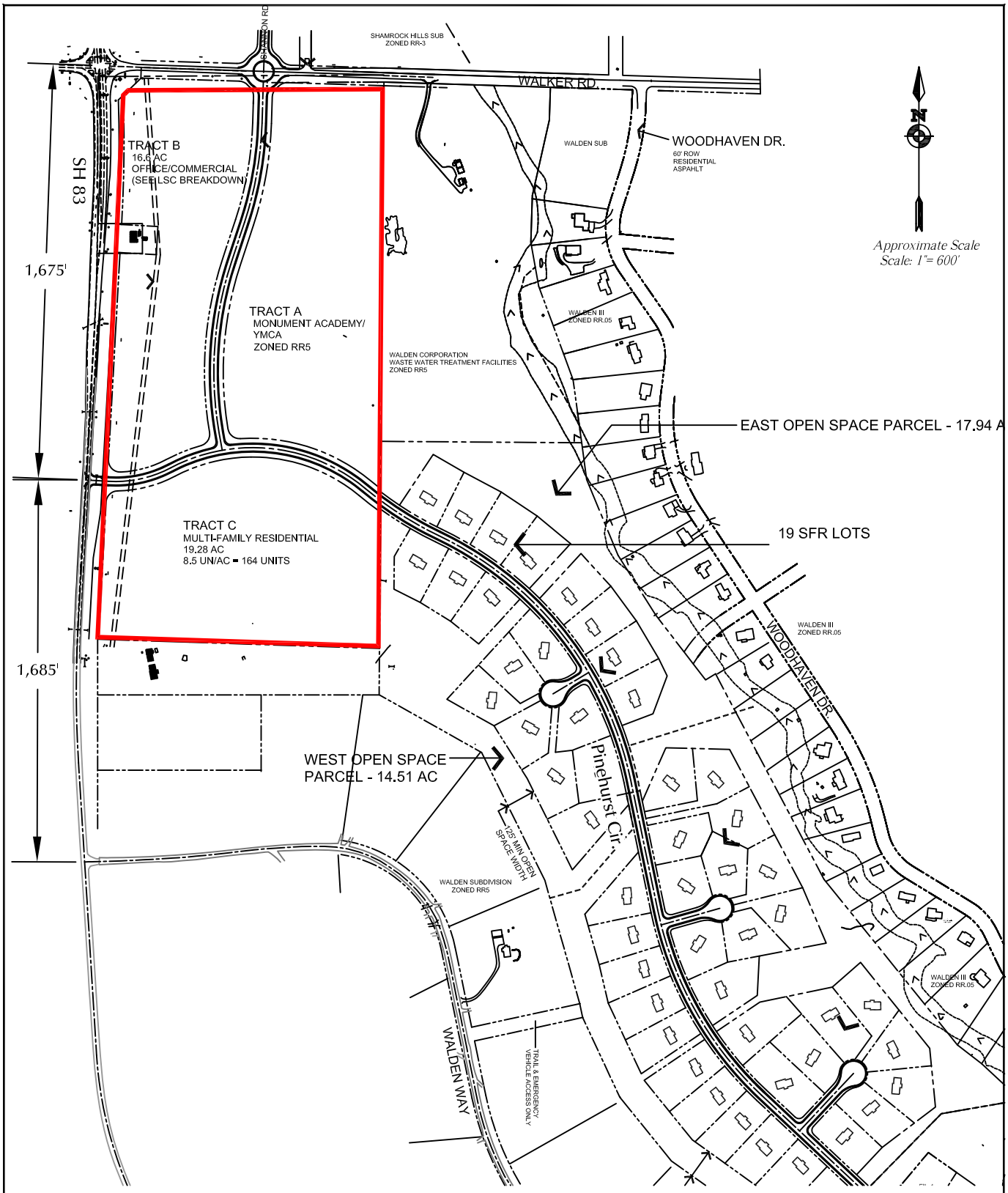
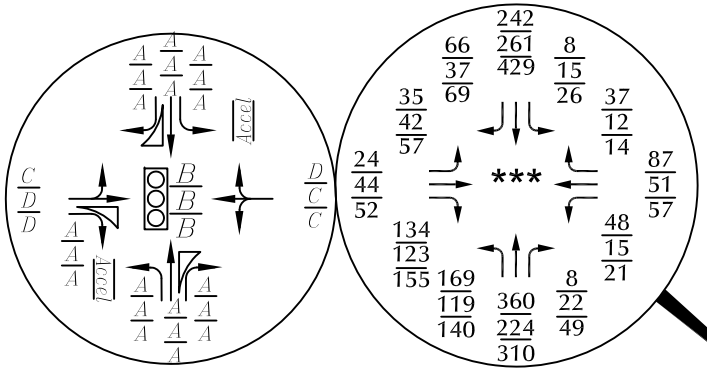


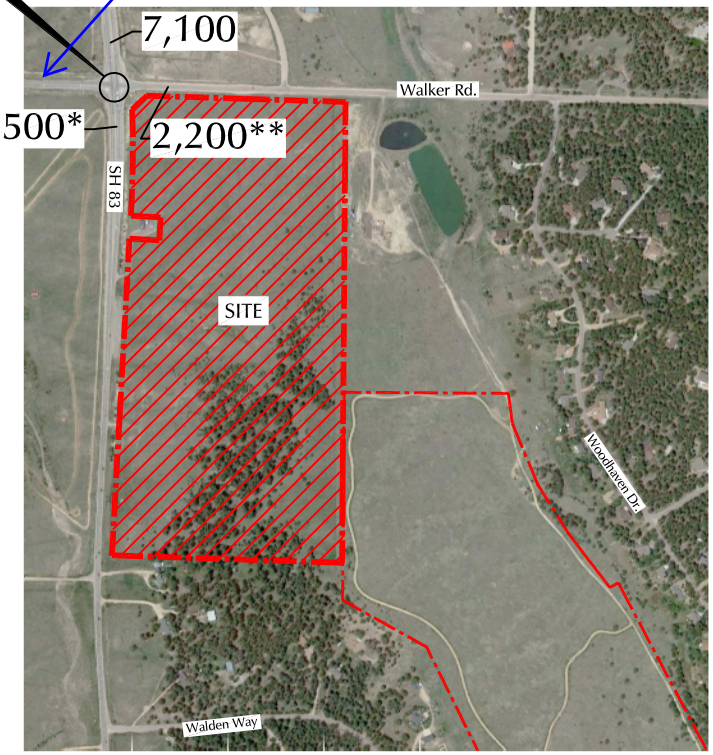
Figure 3

Year 20 Concept Master Plan

Monument Academy (LSC #184820)



Provide ADT on HWY 105 for all exhibits



Approximate Scale
Scale: 1"= 1,000'

* CDOT 2017 AADT
** Estimates by LSC
*** Southbound through volume adjusted based on more recent count at Walden/SH 83

LEGEND:

= Traffic Signal

$\frac{XX}{XX}$ = $\frac{\text{AM Weekday Peak-Hour Traffic (6:45-7:45am)(vehicles per hour)}}{\text{School Peak-Hour Traffic (2:00-3:00pm)}}$
$\frac{XX}{XX}$ = $\frac{\text{School Peak-Hour Traffic (2:00-3:00pm)}}{\text{PM Weekday Peak-Hour Traffic (vehicles per hour)}}$

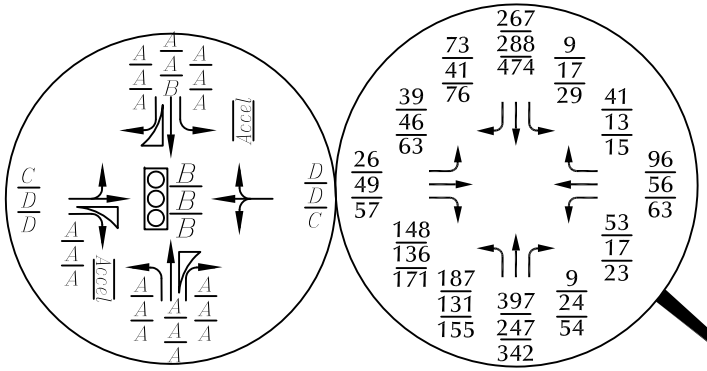
$\frac{A}{B}$ = $\frac{\text{AM Individual Movement Peak-Hour Level of Service}}{\text{School Individual Movement Peak-Hour Level of Service}}$
$\frac{A}{B}$ = $\frac{\text{School Individual Movement Peak-Hour Level of Service}}{\text{PM Individual Movement Peak-Hour Level of Service}}$
$\frac{C}{C}$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

X,XXX= Average Daily Traffic (vehicles per day)

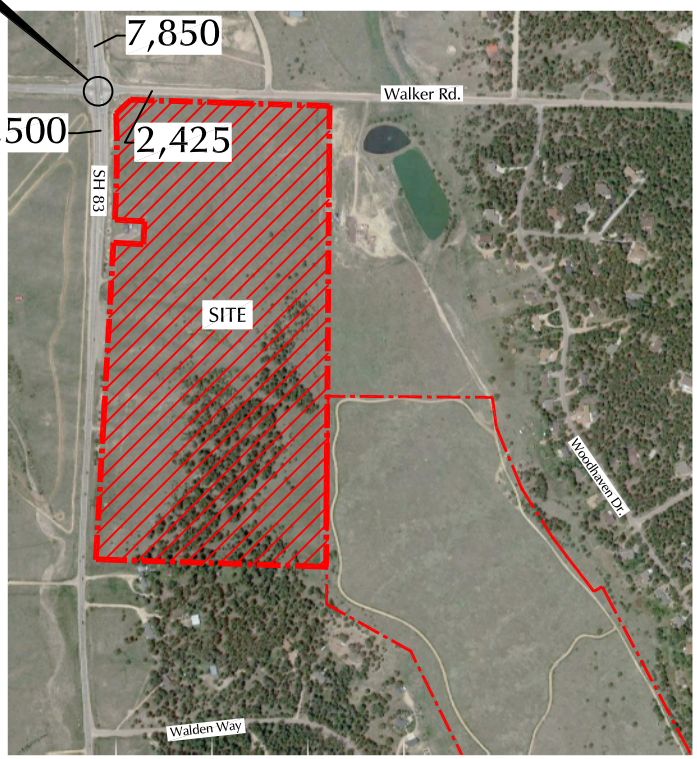
Figure 4

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

Monument Academy (LSC #184820)



Approximate Scale
Scale: 1"= 1,000'



LEGEND:

= Traffic Signal

$\frac{XX}{XX}{=}\frac{XX}{XX}$ = AM Weekday Peak-Hour Traffic (vehicles per hour) / School Peak-Hour Traffic (2:00-3:00pm) / PM Weekday Peak-Hour Traffic (vehicles per hour)

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

$\frac{C}{C}{=}\frac{C}{C}$ = AM Entire Intersection Peak-Hour Level of Service / School Entire Intersection Peak-Hour Level of Service / PM Entire Intersection Peak-Hour Level of Service

X,XXX= Average Daily Traffic (vehicles per day)

Figure 5

Year 2025 Background Traffic, Lane Geometry, Traffic Control and Level of Service

Monument Academy (LSC #184820)

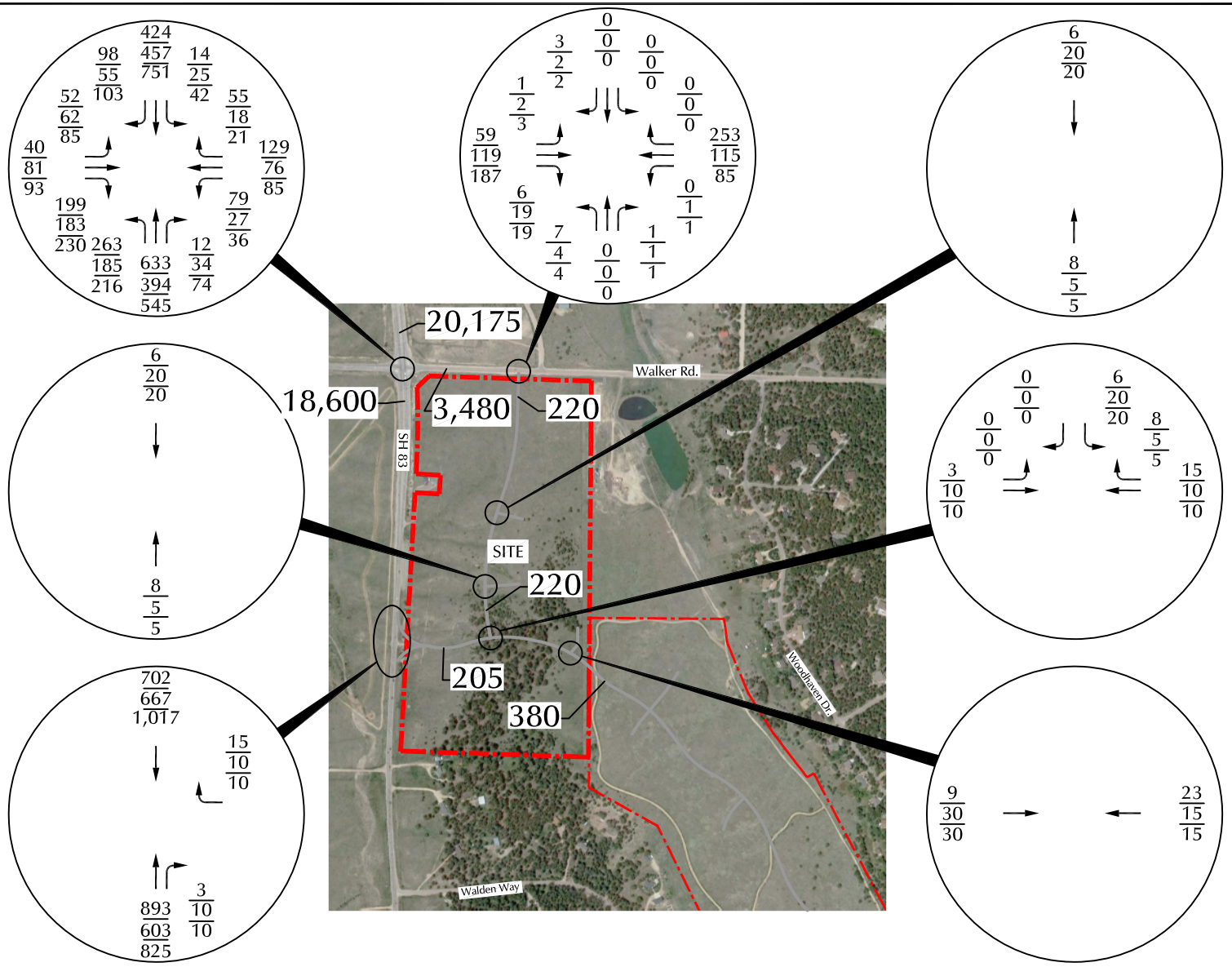


Figure 6a

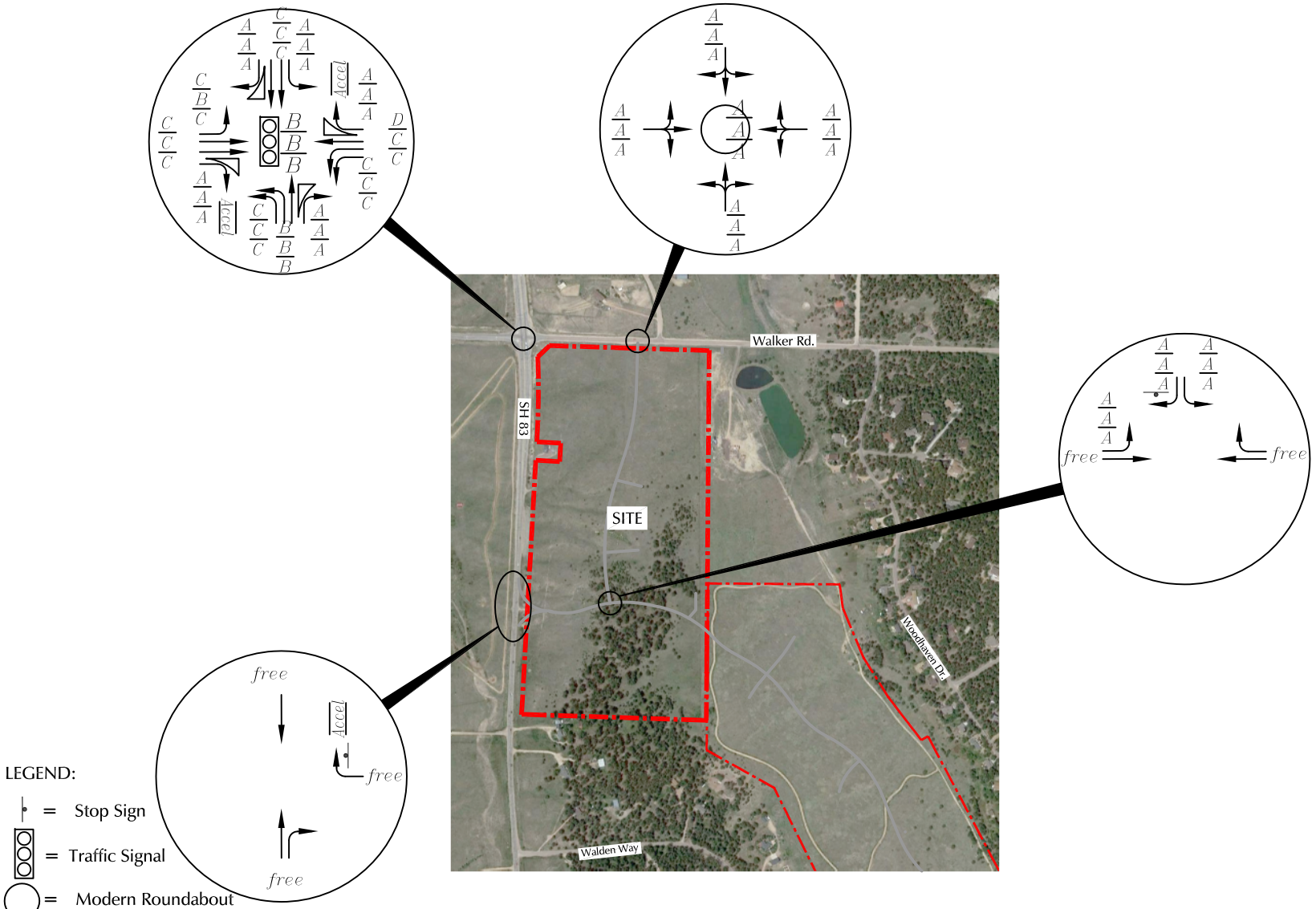
Year 2040 Background Traffic

Monitor Academy (LSC #184820)

LEGEND:

$\frac{XX}{XX}{}_{XX}$ = AM Weekday Peak-Hour Traffic (vehicles per hour) / School Peak-Hour Traffic (2:00-3:00pm) / PM Weekday Peak-Hour Traffic (vehicles per hour)

X,XXX= Average Daily Traffic (vehicles per day)



LEGEND:

= Stop Sign

= Traffic Signal

= Modern Roundabout

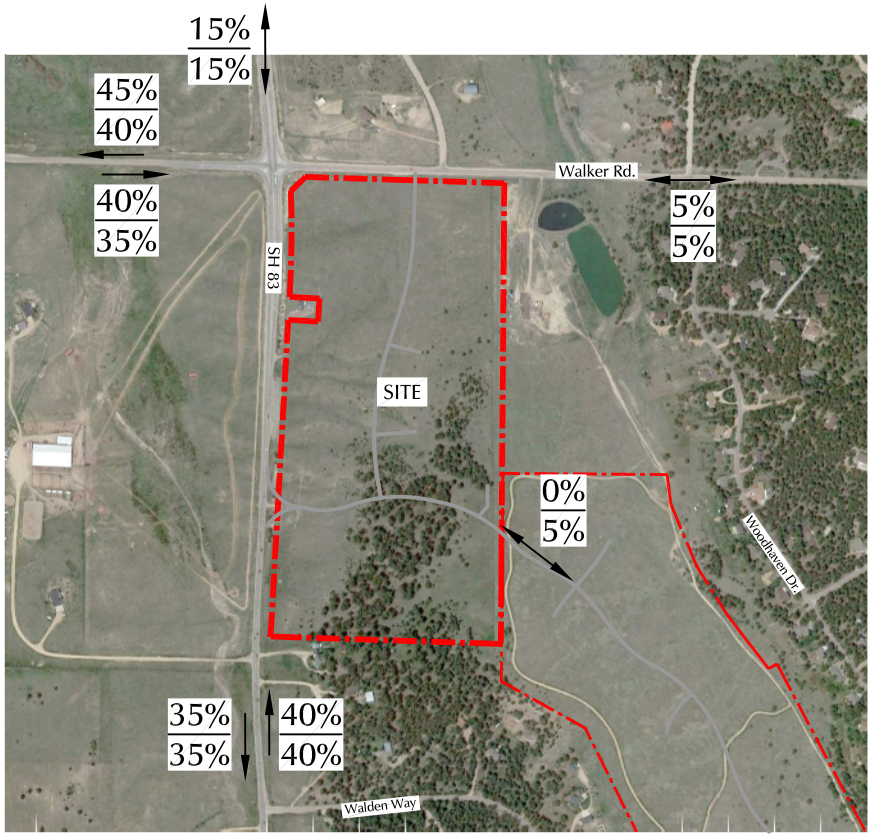
$\frac{A}{B}{C}$ = AM Individual Movement Peak-Hour Level of Service / School Individual Movement Peak-Hour Level of Service / PM Individual Movement Peak-Hour Level of Service

$\frac{C}{C}{C}$ = AM Entire Intersection Peak-Hour Level of Service / School Entire Intersection Peak-Hour Level of Service / PM Entire Intersection Peak-Hour Level of Service

Figure 6b

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

Monument Academy (LSC #184820)



Approximate Scale
Scale: 1"= 1,000'

Figure 7

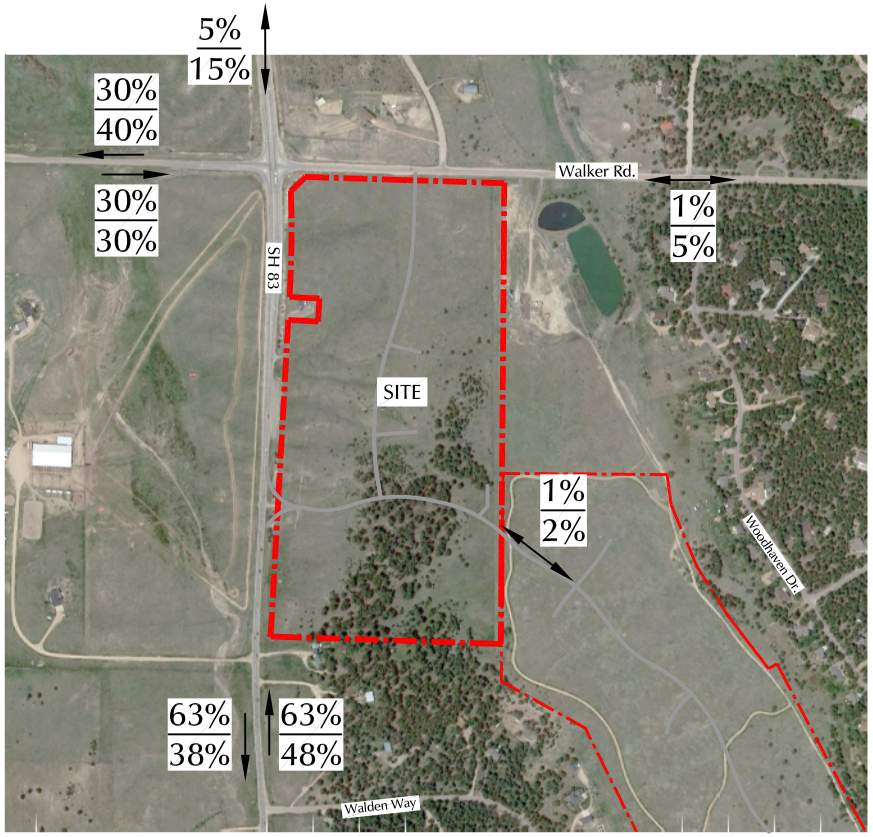
Directional Distribution of Phase 1 Site-Generated Traffic

Monument Academy (LSC #184820)

LEGEND:

XX%
XX%
= Short-Term Percent Directional Distribution / Long-Term Percent Directional Distribution

Per the narrative this should be Phase 1 and 2.



Approximate Scale
Scale: 1"= 1,000'

Figure 8

Directional Distribution of Future Phases Site-Generated Traffic

Monument Academy (LSC #184820)

LEGEND:

XX% / XX% = Residential Percent Directional Distribution / Non-Residential Percent Directional Distribution

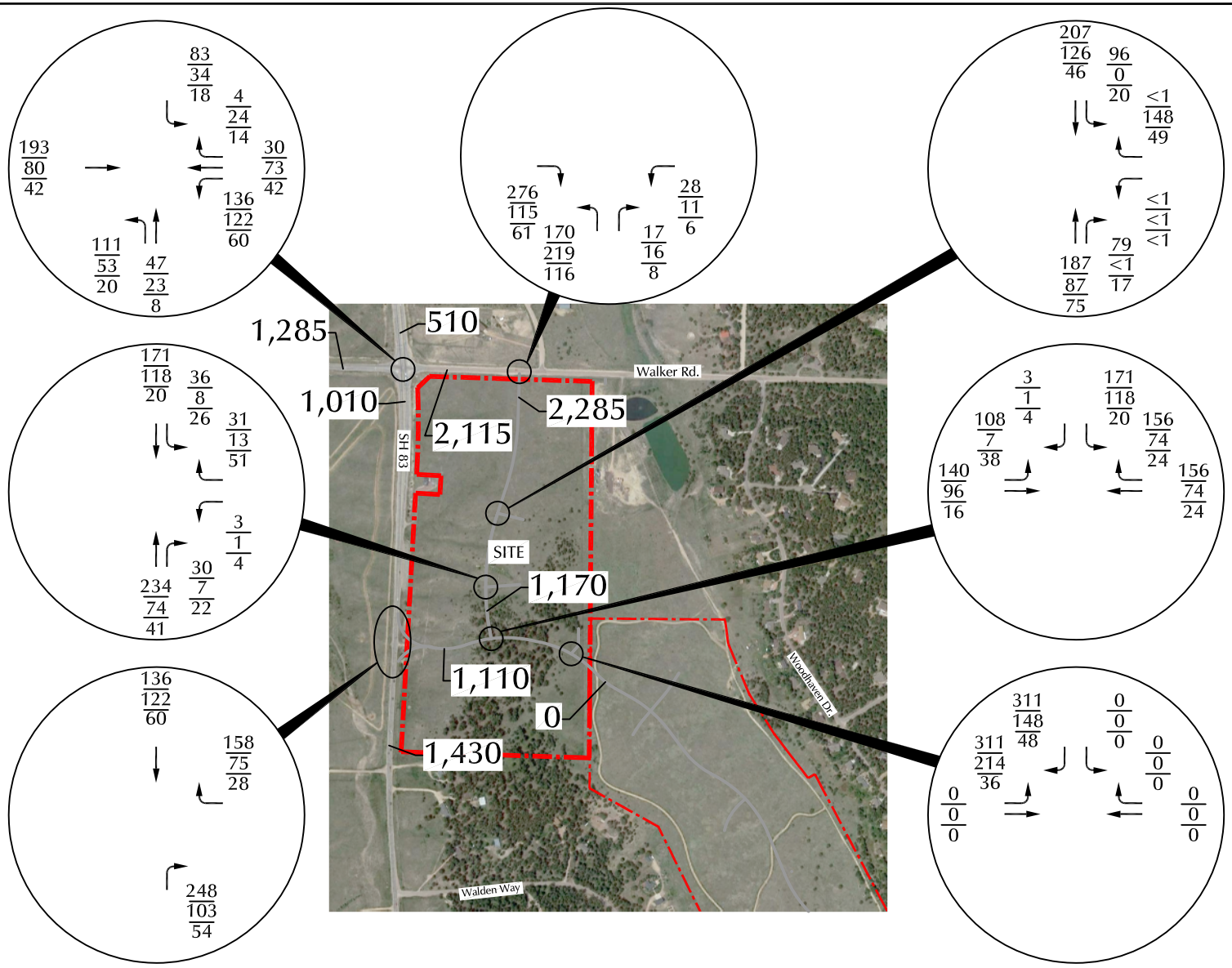


Figure 9

Short-Term Assignment of Phases 1 and 2 Site-Generated Traffic

Monument Academy (LSC #184820)

LEGEND:

$\frac{XX}{XX}{XX}$ = AM Weekday Peak-Hour Traffic (vehicles per hour) / School Peak-Hour Traffic (2:00-3:00pm) / PM Weekday Peak-Hour Traffic (vehicles per hour)

X,XXX= Average Daily Traffic (vehicles per day)

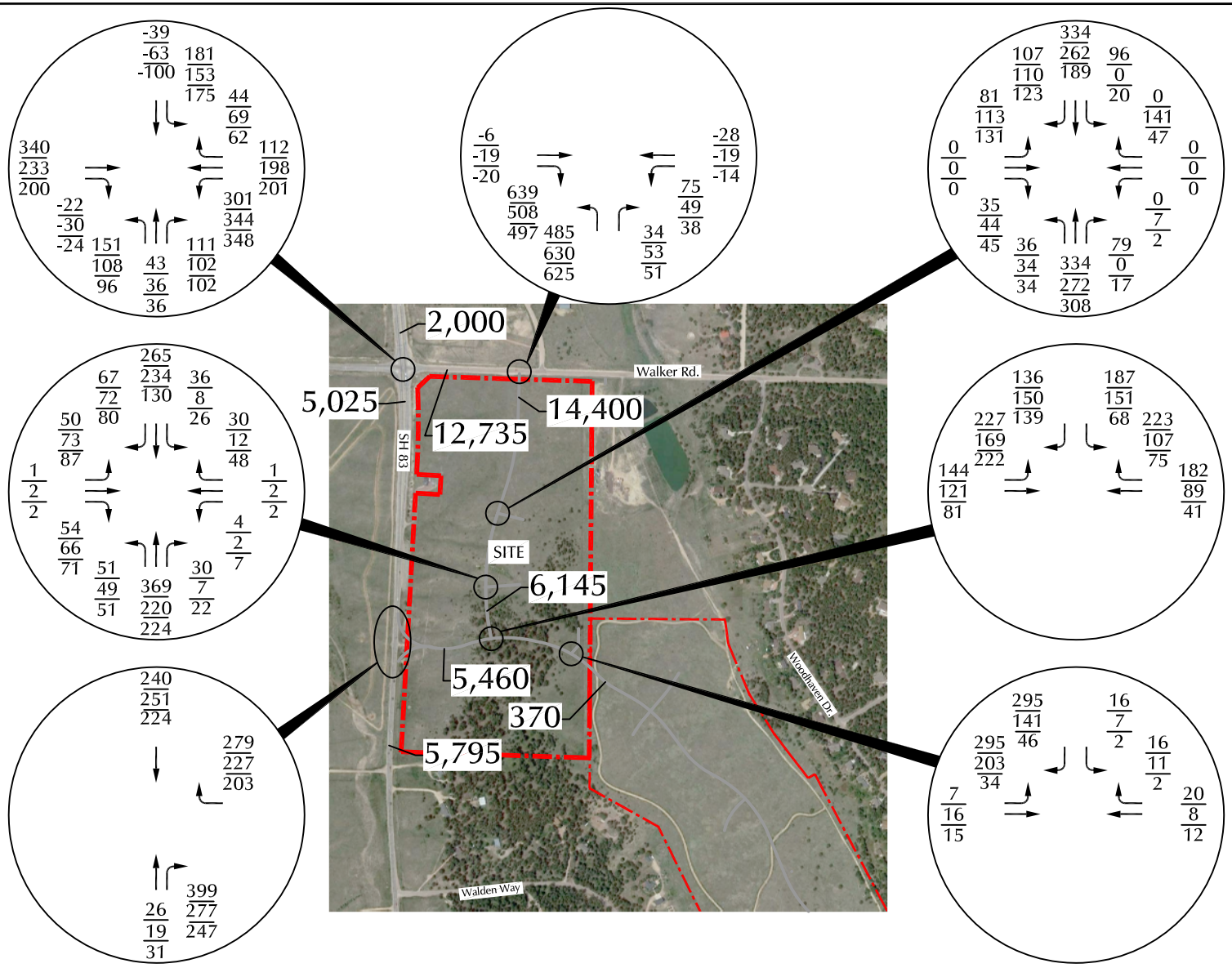


Figure 10

Buildout Assignment of Site-Generated Traffic

Monument Academy (LSC #184820)

LEGEND:

XX / XX / XX = AM Weekday Peak-Hour Traffic (vehicles per hour) / School Peak-Hour Traffic (2:00-3:00pm) / PM Weekday Peak-Hour Traffic (vehicles per hour)

X,XXX= Average Daily Traffic (vehicles per day)

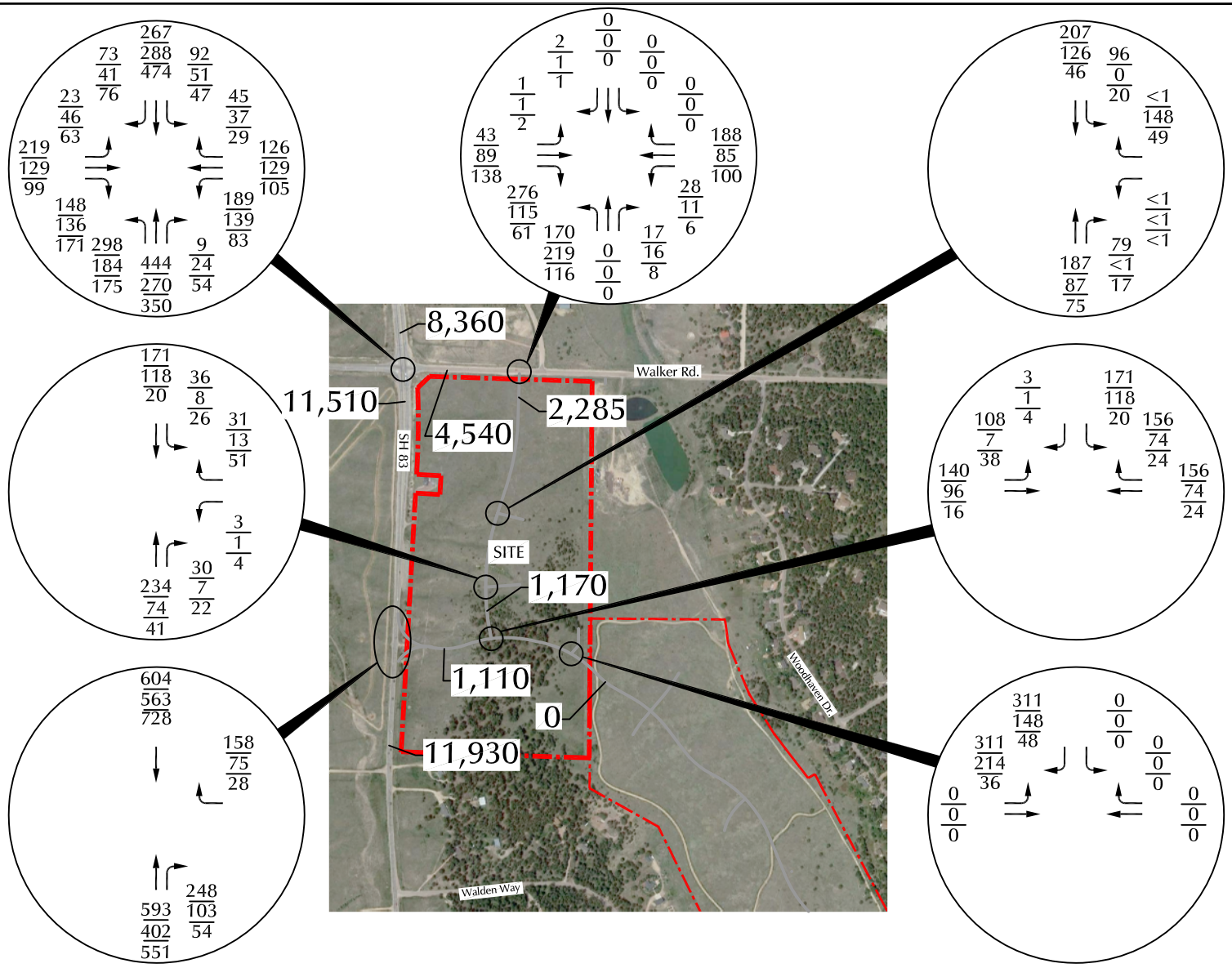


Figure 11a

Short-Term (Phase 1 and 2 Only) Total Traffic

Monument Academy (LSC #184820)

LEGEND:

XX / XX / XX = AM Weekday Peak-Hour Traffic (vehicles per hour) / School Peak-Hour Traffic (2:00-3:00pm) / PM Weekday Peak-Hour Traffic (vehicles per hour)

X,XXX= Average Daily Traffic (vehicles per day)

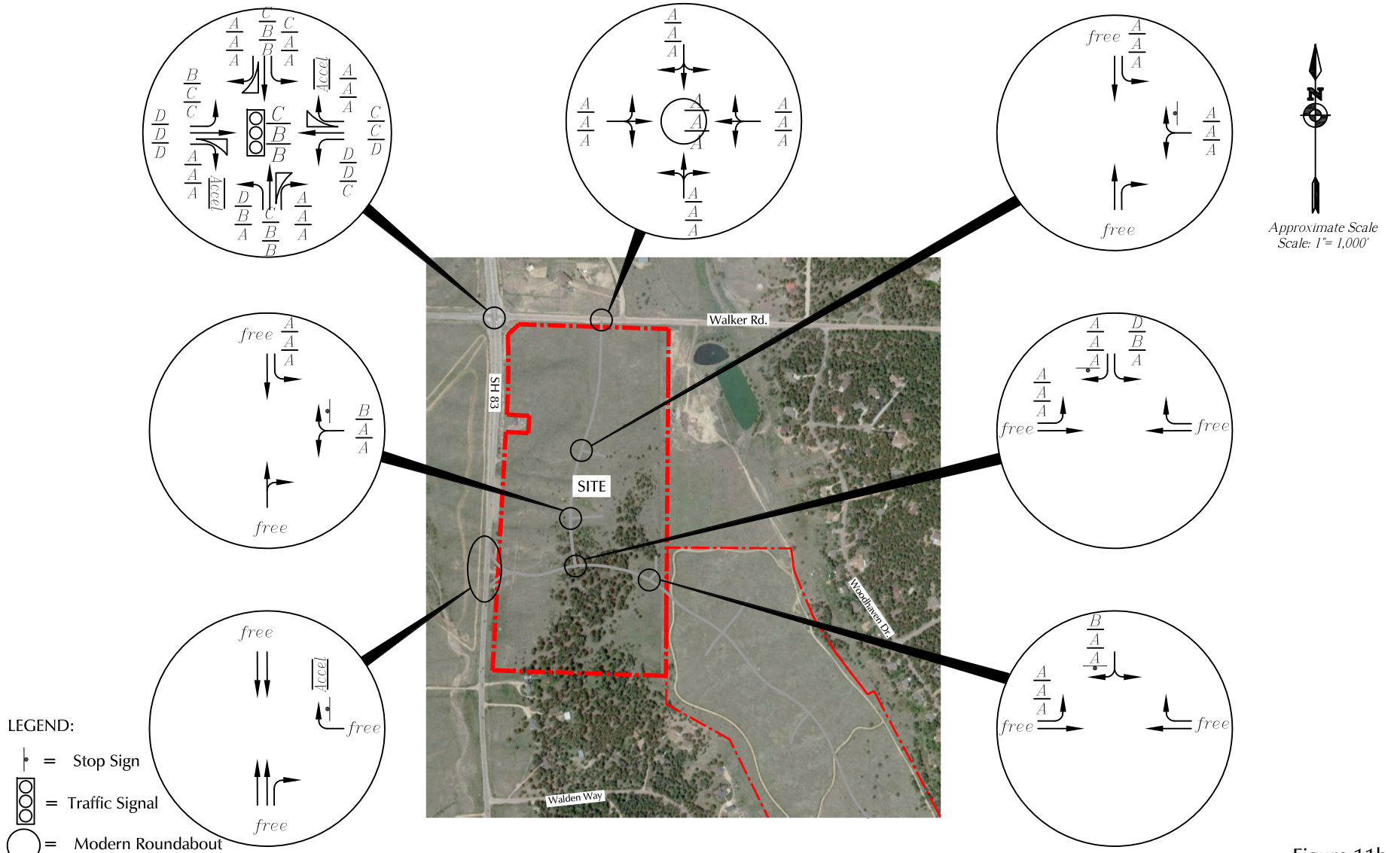


Figure 11b

Short-Term (Phases 1 and 2) Lane Geometry, Traffic Control and Level of Service

Monument Academy (LSC #184820)

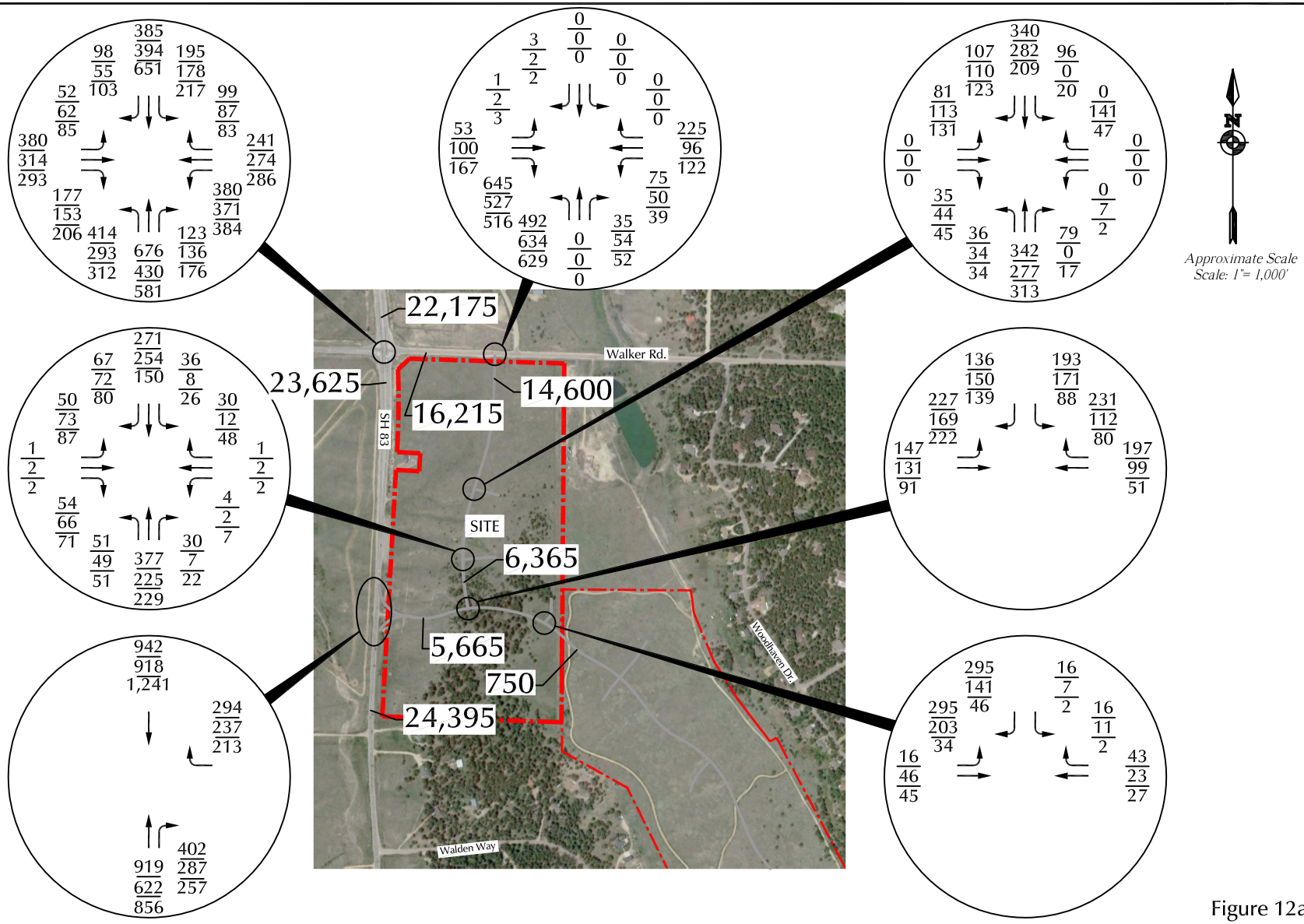


Figure 12a

Year 2040 Total Traffic

Monument Academy (LSC #184820)

LEGEND:

$\frac{XX}{\frac{XX}{XX}}$ = AM Weekday Peak-Hour Traffic (vehicles per hour) / School Peak-Hour Traffic (2:00-3:00pm) / PM Weekday Peak-Hour Traffic (vehicles per hour)

X,XXX= Average Daily Traffic (vehicles per day)

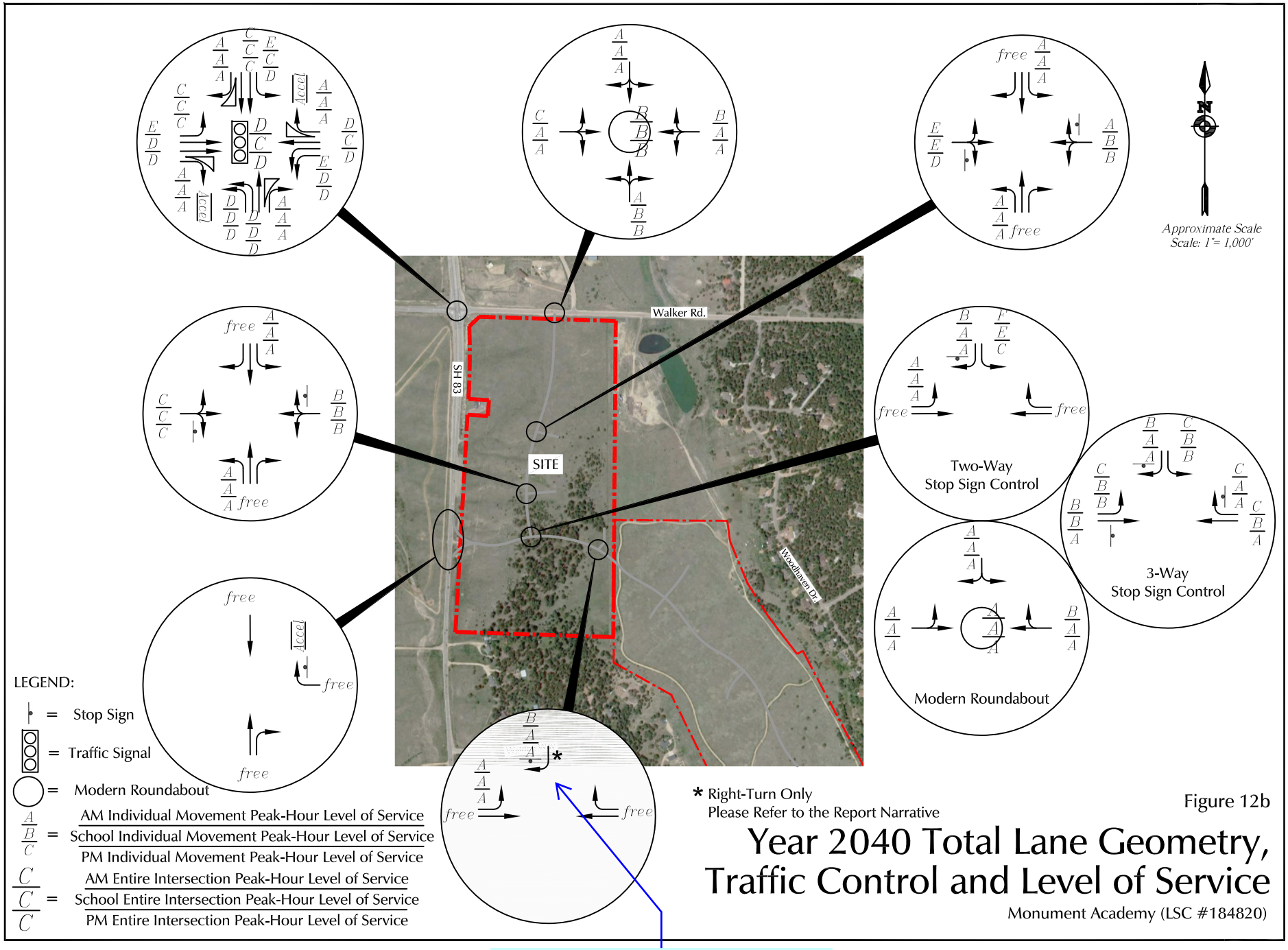


Figure 12b

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

Monument Academy (LSC #184820)

The narrative indicates this as full movement. Revise accordingly.

LSC Transportation Consultants, Inc.

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

File Name : Hwy 83 - Walden Way AM 11-18
Site Code : 184820
Start Date : 11/29/2018
Page No : 1

Groups Printed- Unshifted

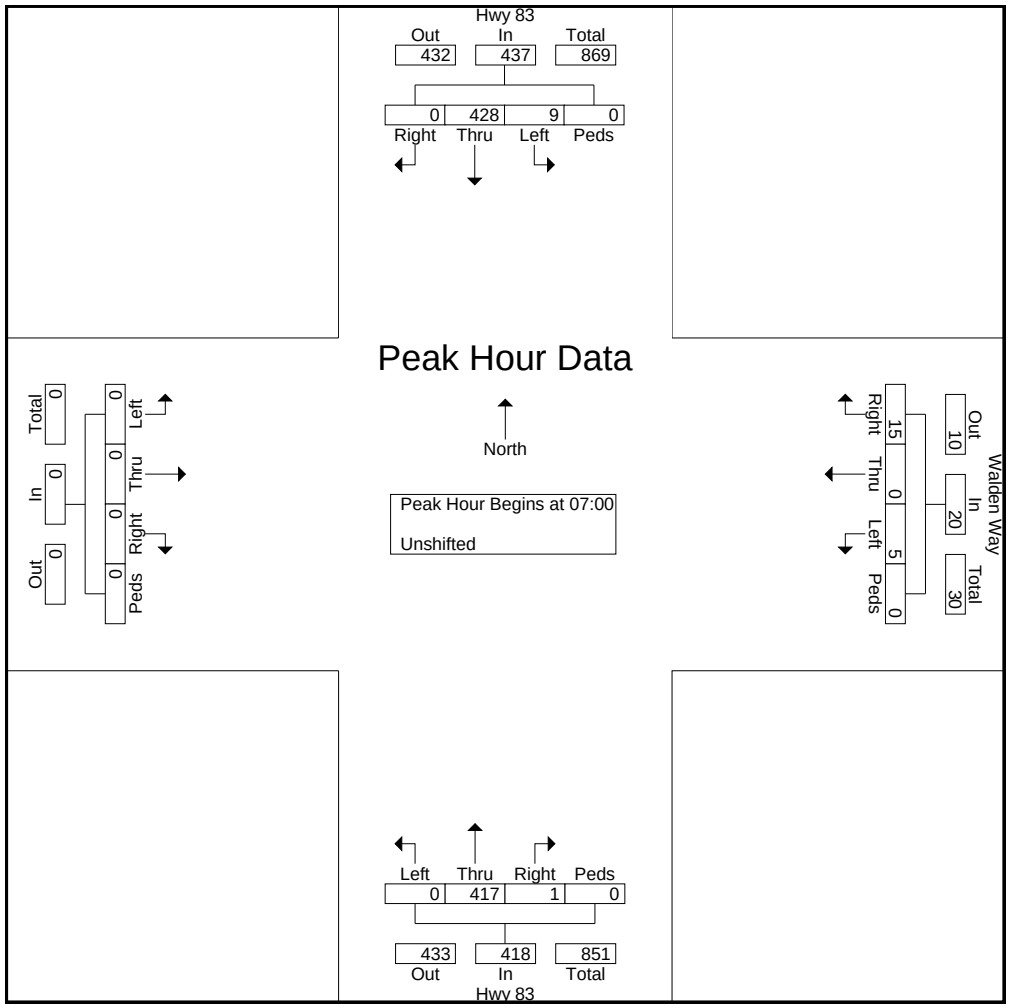
	Hwy 83 Southbound				Walden Way Westbound				Hwy 83 Northbound				Eastbound				
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Int. Total
06:30	0	85	0	0	0	0	4	0	0	91	0	0	0	0	0	0	180
06:45	1	92	0	0	1	0	5	0	0	108	0	0	0	0	0	0	207
Total	1	177	0	0	1	0	9	0	0	199	0	0	0	0	0	0	387
07:00	1	94	0	0	1	0	2	0	0	103	1	0	0	0	0	0	202
07:15	1	114	0	0	1	0	4	0	0	108	0	0	0	0	0	0	228
07:30	1	103	0	0	2	0	6	0	0	104	0	0	0	0	0	0	216
07:45	6	117	0	0	1	0	3	0	0	102	0	0	0	0	0	0	229
Total	9	428	0	0	5	0	15	0	0	417	1	0	0	0	0	0	875
08:00	3	83	0	0	0	0	4	0	0	108	1	0	0	0	0	0	199
08:15	0	101	0	0	1	0	1	0	0	121	0	0	0	0	0	0	224
Grand Total	13	789	0	0	7	0	29	0	0	845	2	0	0	0	0	0	1685
Apprch %	1.6	98.4	0	0	19.4	0	80.6	0	0	99.8	0.2	0	0	0	0	0	
Total %	0.8	46.8	0	0	0.4	0	1.7	0	0	50.1	0.1	0	0	0	0	0	

LSC Transportation Consultants, Inc.

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

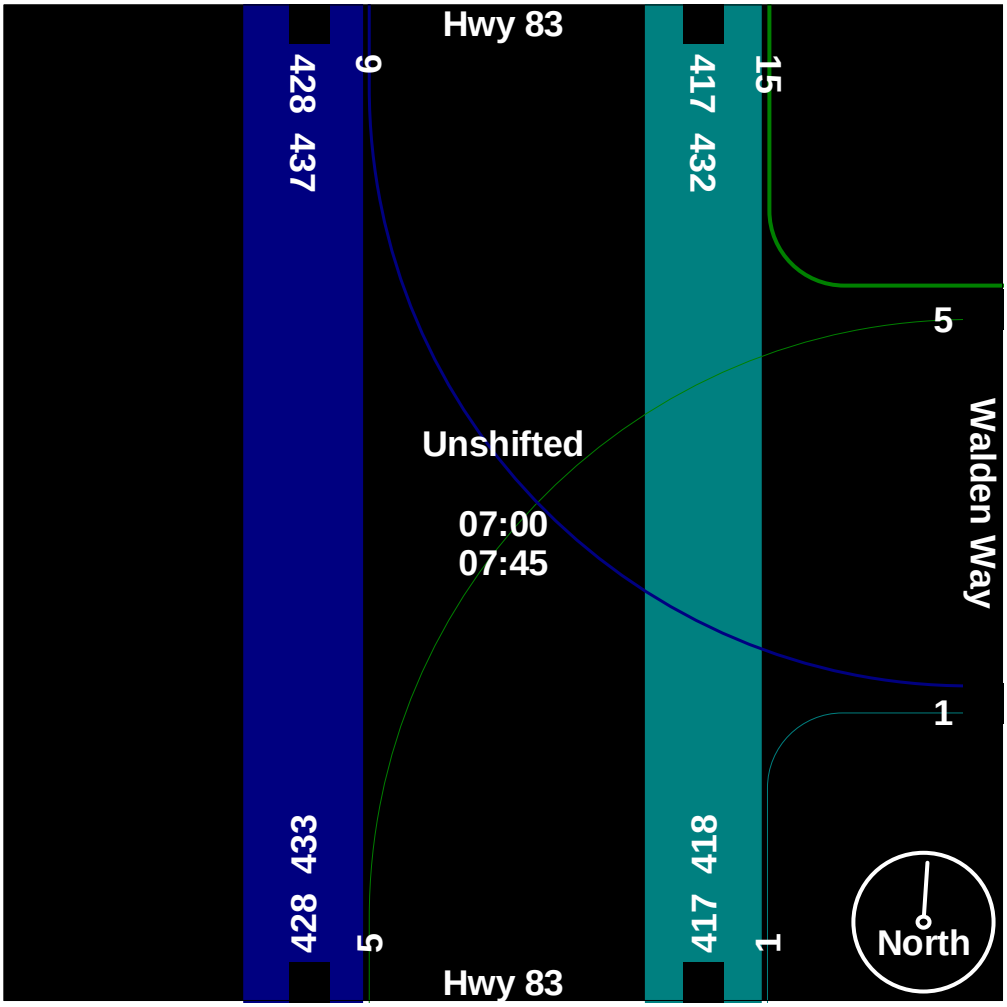
File Name : Hwy 83 - Walden Way AM 11-18
Site Code : 184820
Start Date : 11/29/2018
Page No : 2

	Hwy 83 Southbound					Walden Way Westbound					Hwy 83 Northbound					Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 06:30 to 08:15 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:00																					
07:00	1	94	0	0	95	1	0	2	0	3	0	103	**1**	0	104	0	0	0	0	0	202
07:15	1	114	0	0	115	1	0	4	0	5	0	**108**	0	0	**108**	0	0	0	0	0	228
07:30	1	103	0	0	104	**2**	0	**6**	0	**8**	0	104	0	0	104	0	0	0	0	0	216
07:45	**6**	**117**	0	0	**123**	1	0	3	0	4	0	102	0	0	102	0	0	0	0	0	**229**
Total Volume	9	428	0	0	437	5	0	15	0	20	0	417	1	0	418	0	0	0	0	0	875
% App. Total	2.1	97.9	0	0		25	0	75	0		0	99.8	0.2	0		0	0	0	0		
PHF	.375	.915	.000	.000	.888	.625	.000	.625	.000	.625	.000	.965	.250	.000	.968	.000	.000	.000	.000	.000	.955



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

File Name : Hwy 83 - Walden Way AM 11-18
Site Code : 184820
Start Date : 11/29/2018
Page No : 3



LSC Transportation Consultants, Inc.

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

File Name : Hwy 83 - Walden Way PM 11-18
Site Code : 184820
Start Date : 11/29/2018
Page No : 1

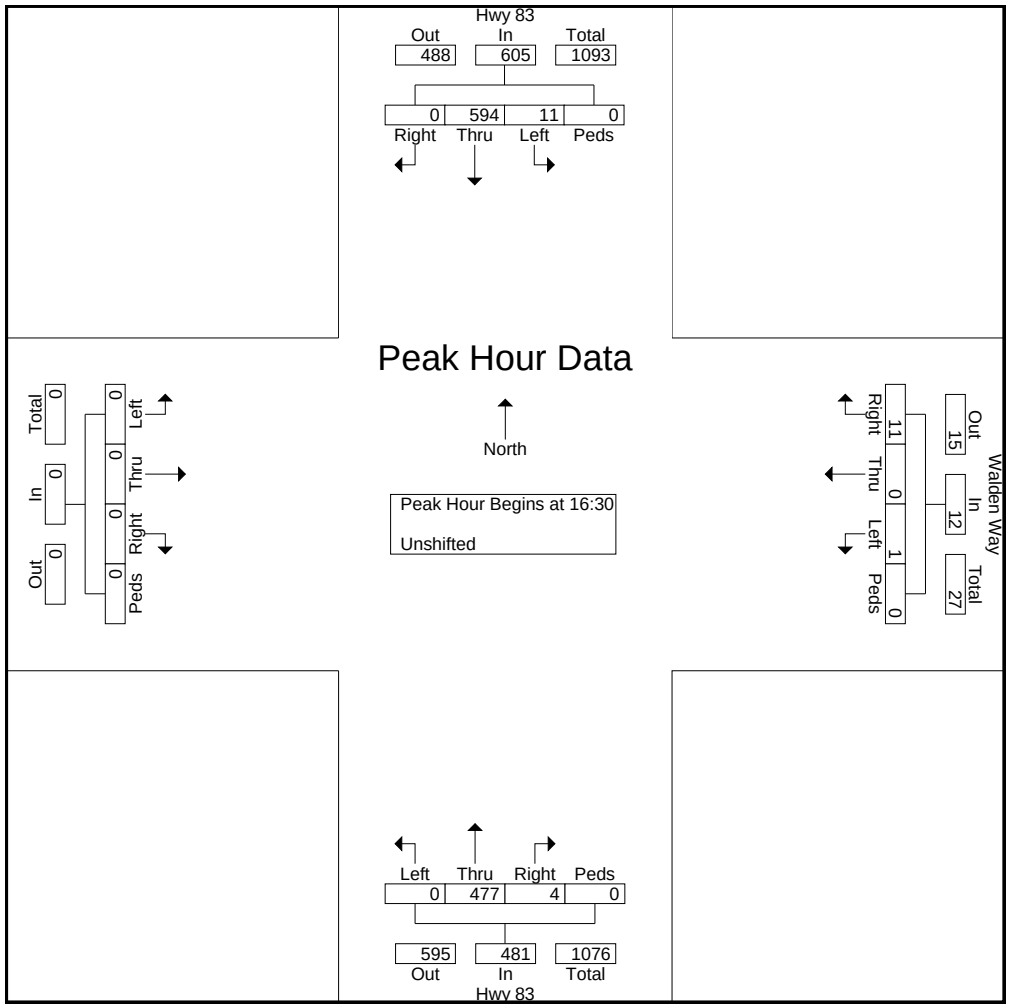
Groups Printed- Unshifted

	Hwy 83 Southbound				Walden Way Westbound				Hwy 83 Northbound				Eastbound				
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Int. Total
16:00	3	157	0	0	3	0	2	0	0	109	0	0	0	0	0	0	274
16:15	0	149	0	0	1	0	2	0	0	96	2	0	0	0	0	0	250
16:30	1	149	0	0	0	0	5	0	0	126	1	0	0	0	0	0	282
16:45	2	129	0	0	1	0	4	0	0	108	1	0	0	0	0	0	245
Total	6	584	0	0	5	0	13	0	0	439	4	0	0	0	0	0	1051
17:00	8	169	0	0	0	0	2	0	0	126	0	0	0	0	0	0	305
17:15	0	147	0	0	0	0	0	0	0	117	2	0	0	0	0	0	266
17:30	1	146	0	0	0	0	5	0	0	105	0	0	0	0	0	0	257
17:45	2	134	0	0	0	0	1	0	0	89	0	0	0	0	0	0	226
Total	11	596	0	0	0	0	8	0	0	437	2	0	0	0	0	0	1054
Grand Total	17	1180	0	0	5	0	21	0	0	876	6	0	0	0	0	0	2105
Apprch %	1.4	98.6	0	0	19.2	0	80.8	0	0	99.3	0.7	0	0	0	0	0	
Total %	0.8	56.1	0	0	0.2	0	1	0	0	41.6	0.3	0	0	0	0	0	

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

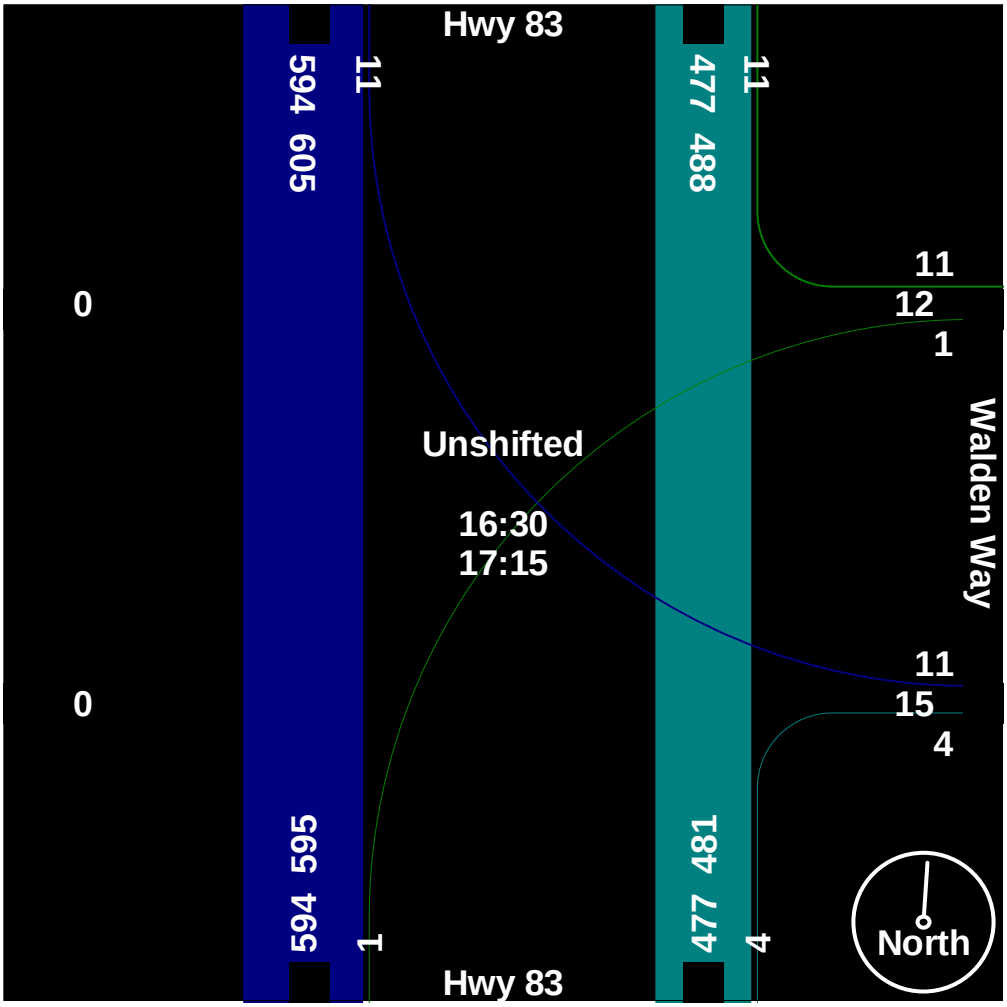
File Name : Hwy 83 - Walden Way PM 11-18
Site Code : 184820
Start Date : 11/29/2018
Page No : 2

	Hwy 83 Southbound					Walden Way Westbound					Hwy 83 Northbound					Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 16:30																					
16:30	1	149	0	0	150	0	0	**5**	0	**5**	0	**126**	1	0	**127**	0	0	0	0	0	282
16:45	2	129	0	0	131	**1**	0	4	0	5	0	108	1	0	109	0	0	0	0	0	245
17:00	**8**	**169**	0	0	**177**	0	0	2	0	2	0	126	0	0	126	0	0	0	0	0	**305**
17:15	0	147	0	0	147	0	0	0	0	0	0	117	**2**	0	119	0	0	0	0	0	266
Total Volume	11	594	0	0	605	1	0	11	0	12	0	477	4	0	481	0	0	0	0	0	1098
% App. Total	1.8	98.2	0	0		8.3	0	91.7	0		0	99.2	0.8	0		0	0	0	0		
PHF	.344	.879	.000	.000	.855	.250	.000	.550	.000	.600	.000	.946	.500	.000	.947	.000	.000	.000	.000	.000	.900



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

File Name : Hwy 83 - Walden Way PM 11-18
Site Code : 184820
Start Date : 11/29/2018
Page No : 3



LSC Transportation Consultants, Inc.

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

File Name : Hwy 83 - Walker Rd AM
Site Code : 184820
Start Date : 8/29/2018
Page No : 1

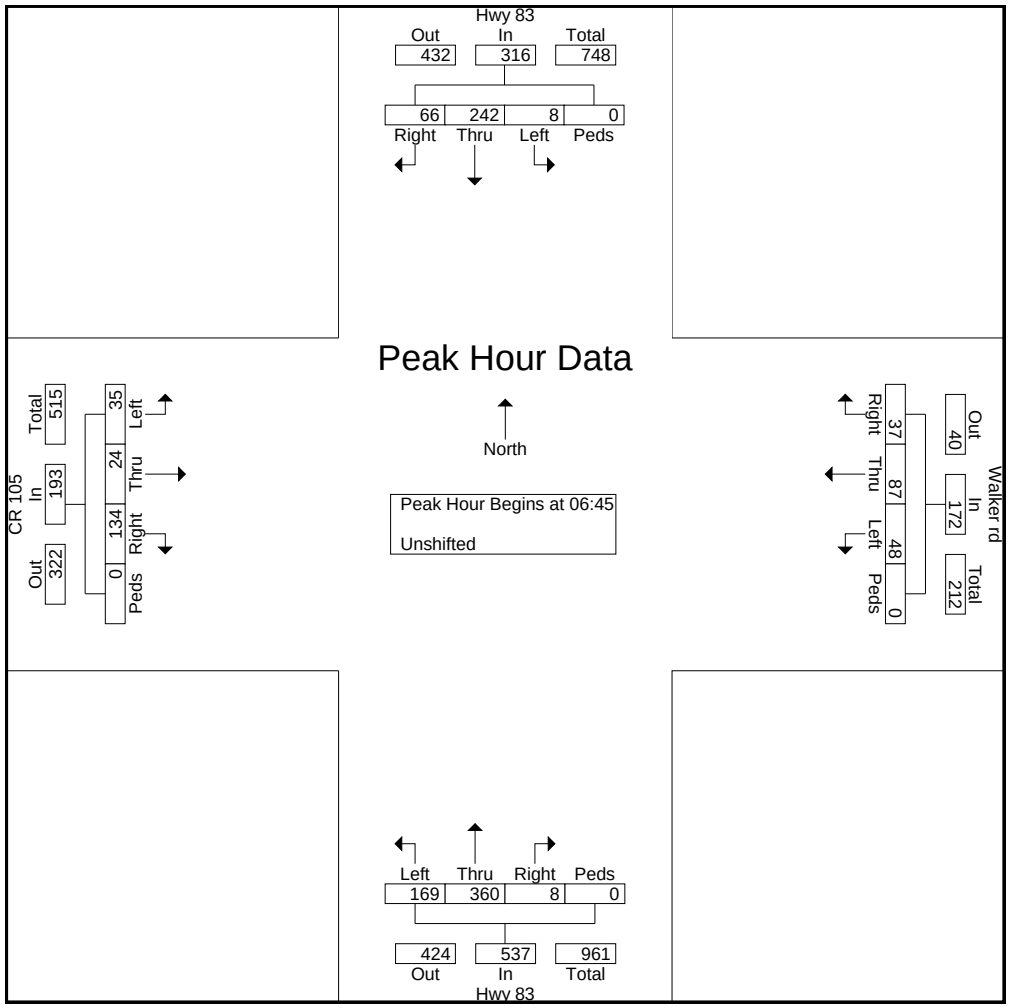
Groups Printed- Unshifted

	Hwy 83 Southbound				Walker rd Westbound				Hwy 83 Northbound				CR 105 Eastbound				
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Int. Total
06:30	2	46	5	0	9	9	2	0	17	72	1	0	3	1	19	0	186
06:45	0	52	11	0	10	21	8	0	34	97	1	0	4	0	23	0	261
Total	2	98	16	0	19	30	10	0	51	169	2	0	7	1	42	0	447
07:00	3	60	20	0	8	30	13	0	39	95	2	0	7	3	37	0	317
07:15	4	63	26	0	17	18	10	0	45	107	0	0	8	5	32	0	335
07:30	1	67	9	0	13	18	6	0	51	61	5	0	16	16	42	0	305
07:45	3	54	9	0	8	9	6	0	32	76	7	0	2	10	40	0	256
Total	11	244	64	0	46	75	35	0	167	339	14	0	33	34	151	0	1213
08:00	2	50	9	0	8	5	3	0	28	74	5	0	8	7	14	0	213
08:15	3	50	8	0	2	11	1	0	38	75	9	0	5	7	10	0	219
Grand Total	18	442	97	0	75	121	49	0	284	657	30	0	53	49	217	0	2092
Apprch %	3.2	79.4	17.4	0	30.6	49.4	20	0	29.2	67.7	3.1	0	16.6	15.4	68	0	
Total %	0.9	21.1	4.6	0	3.6	5.8	2.3	0	13.6	31.4	1.4	0	2.5	2.3	10.4	0	

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

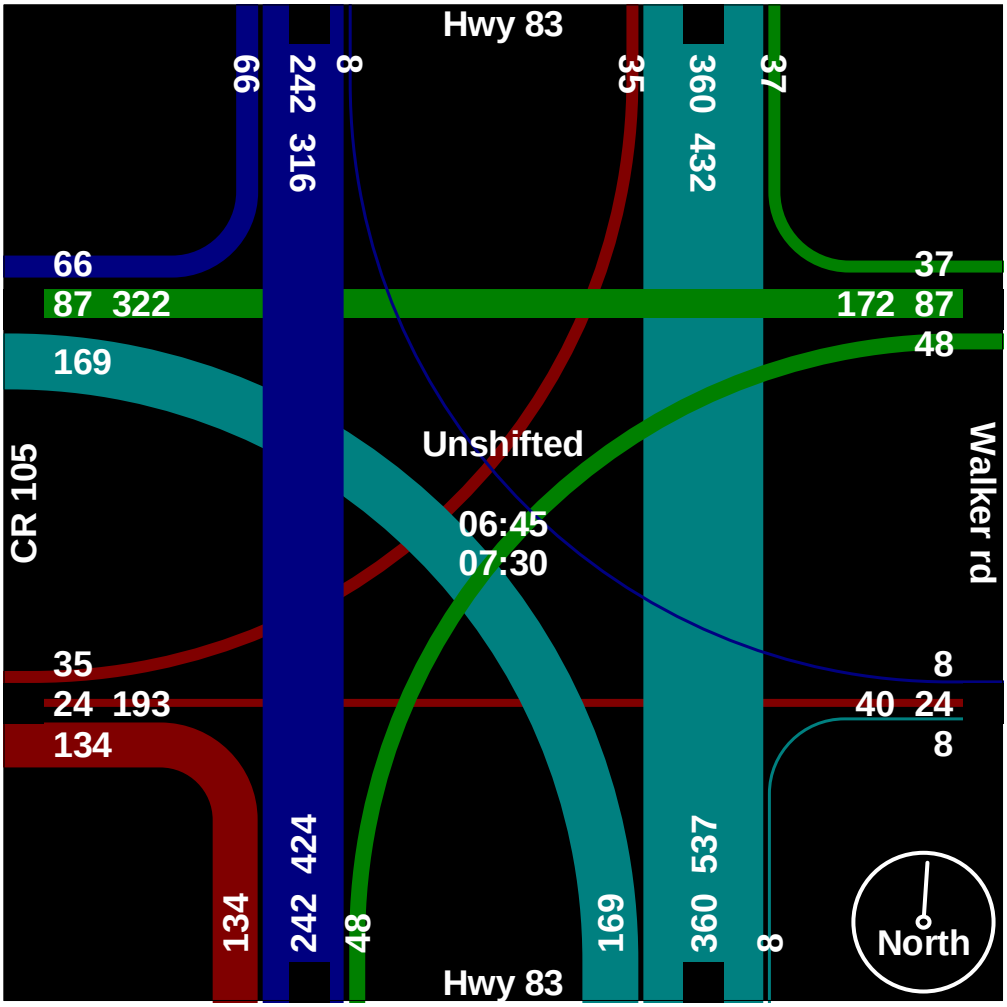
File Name : Hwy 83 - Walker Rd AM
Site Code : 184820
Start Date : 8/29/2018
Page No : 2

	Hwy 83 Southbound					Walker rd Westbound					Hwy 83 Northbound					CR 105 Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 06:30 to 08:15 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 06:45																					
06:45	0	52	11	0	63	10	21	8	0	39	34	97	1	0	132	4	0	23	0	27	261
07:00	3	60	20	0	83	8	**30**	**13**	0	**51**	39	95	2	0	136	7	3	37	0	47	317
07:15	**4**	63	**26**	0	**93**	**17**	18	10	0	45	45	**107**	0	0	**152**	8	5	32	0	45	**335**
07:30	1	**67**	9	0	77	13	18	6	0	37	**51**	61	**5**	0	117	**16**	**16**	**42**	0	**74**	305
Total Volume	8	242	66	0	316	48	87	37	0	172	169	360	8	0	537	35	24	134	0	193	1218
% App. Total	2.5	76.6	20.9	0		27.9	50.6	21.5	0		31.5	67	1.5	0		18.1	12.4	69.4	0		
PHF	.500	.903	.635	.000	.849	.706	.725	.712	.000	.843	.828	.841	.400	.000	.883	.547	.375	.798	.000	.652	.909



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

File Name : Hwy 83 - Walker Rd AM
Site Code : 184820
Start Date : 8/29/2018
Page No : 3



LSC Transportation Consultants, Inc.

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

File Name : Hwy 83 - Walker Rd Mid
Site Code : 00184820
Start Date : 9/5/2018
Page No : 1

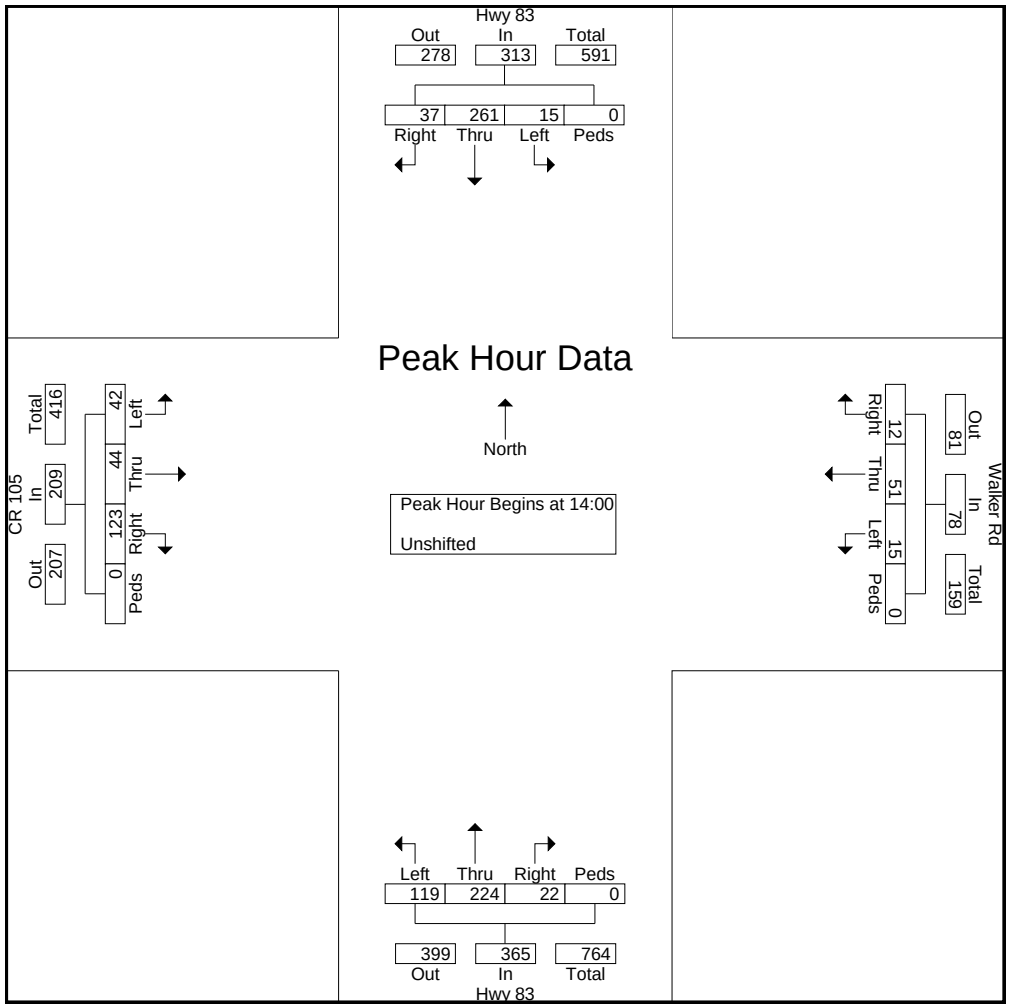
Groups Printed- Unshifted

	Hwy 83 Southbound				Walker Rd Westbound				Hwy 83 Northbound				CR 105 Eastbound				
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Int. Total
13:45	0	65	9	0	2	4	0	0	15	48	2	0	4	8	24	0	181
Total	0	65	9	0	2	4	0	0	15	48	2	0	4	8	24	0	181
14:00	4	75	11	0	3	16	2	0	22	62	6	0	9	10	29	0	249
14:15	3	69	13	0	5	15	5	0	33	44	6	0	9	4	32	0	238
14:30	3	56	3	0	3	9	3	0	33	57	4	0	8	16	33	0	228
14:45	5	61	10	0	4	11	2	0	31	61	6	0	16	14	29	0	250
Total	15	261	37	0	15	51	12	0	119	224	22	0	42	44	123	0	965
Grand Total	15	326	46	0	17	55	12	0	134	272	24	0	46	52	147	0	1146
Apprch %	3.9	84.2	11.9	0	20.2	65.5	14.3	0	31.2	63.3	5.6	0	18.8	21.2	60	0	
Total %	1.3	28.4	4	0	1.5	4.8	1	0	11.7	23.7	2.1	0	4	4.5	12.8	0	

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

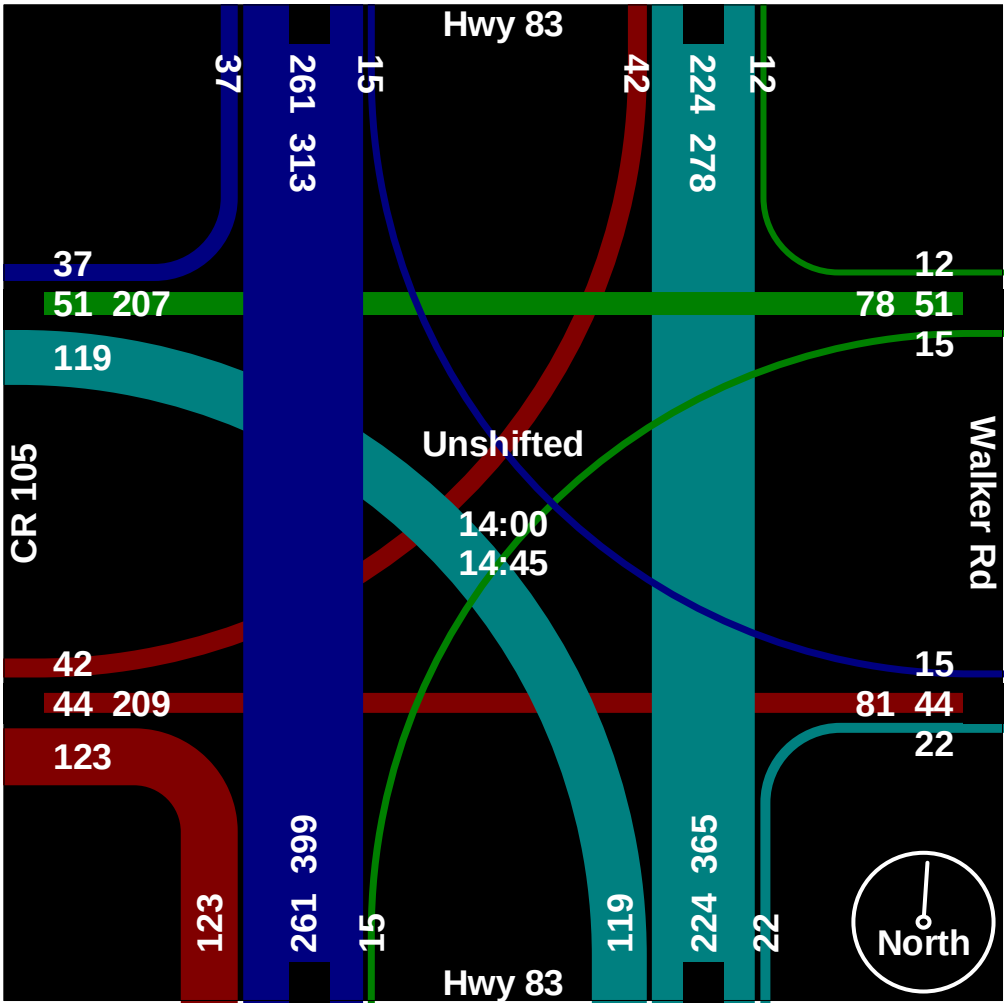
File Name : Hwy 83 - Walker Rd Mid
Site Code : 00184820
Start Date : 9/5/2018
Page No : 2

	Hwy 83 Southbound					Walker Rd Westbound					Hwy 83 Northbound					CR 105 Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 13:45 to 14:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 14:00																					
14:00	4	**75**	11	0	**90**	3	**16**	2	0	21	22	**62**	**6**	0	90	9	10	29	0	48	249
14:15	3	69	**13**	0	85	**5**	15	**5**	0	**25**	**33**	44	6	0	83	9	4	32	0	45	238
14:30	3	56	3	0	62	3	9	3	0	15	33	57	4	0	94	8	**16**	**33**	0	57	228
14:45	**5**	61	10	0	76	4	11	2	0	17	31	61	6	0	**98**	**16**	14	29	0	**59**	**250**
Total Volume	15	261	37	0	313	15	51	12	0	78	119	224	22	0	365	42	44	123	0	209	965
% App. Total	4.8	83.4	11.8	0		19.2	65.4	15.4	0		32.6	61.4	6	0		20.1	21.1	58.9	0		
PHF	.750	.870	.712	.000	.869	.750	.797	.600	.000	.780	.902	.903	.917	.000	.931	.656	.688	.932	.000	.886	.965



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

File Name : Hwy 83 - Walker Rd Mid
Site Code : 00184820
Start Date : 9/5/2018
Page No : 3



LSC Transportation Consultants, Inc.

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

File Name : Hwy 83 - Walker Rd PM
Site Code : 184820
Start Date : 8/29/2018
Page No : 1

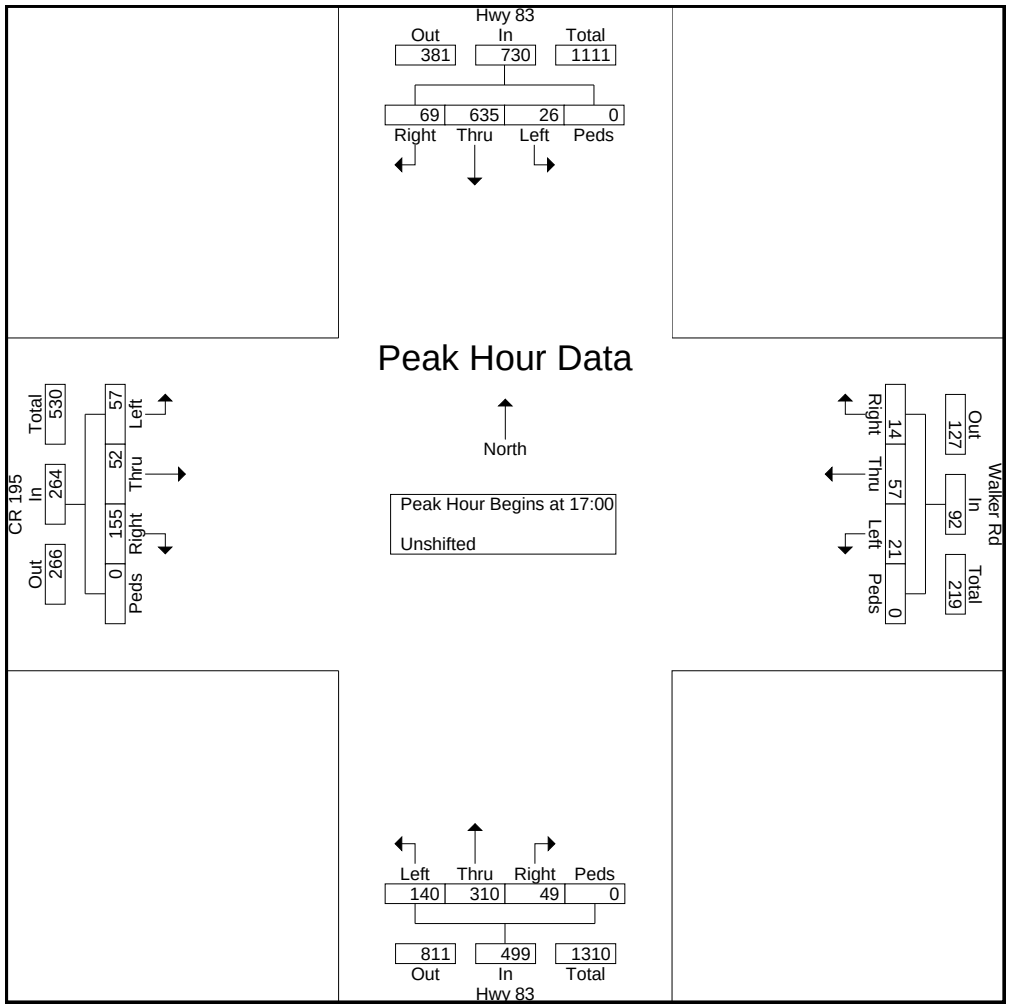
Groups Printed- Unshifted

	Hwy 83 Southbound				Walker Rd Westbound				Hwy 83 Northbound				CR 195 Eastbound				
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Int. Total
16:15	3	89	15	0	8	12	1	0	31	98	5	0	11	21	49	0	343
16:30	5	96	16	0	12	14	1	0	30	106	6	0	12	22	54	0	374
16:45	4	101	18	0	6	11	1	0	36	80	7	0	18	17	34	0	333
Total	12	286	49	0	26	37	3	0	97	284	18	0	41	60	137	0	1050
17:00	8	156	19	0	3	11	5	0	40	94	11	0	9	16	45	0	417
17:15	6	147	13	0	5	19	4	0	35	60	14	0	19	11	44	0	377
17:30	4	162	22	0	11	15	4	0	38	89	15	0	11	13	30	0	414
17:45	8	170	15	0	2	12	1	0	27	67	9	0	18	12	36	0	377
Total	26	635	69	0	21	57	14	0	140	310	49	0	57	52	155	0	1585
18:00	0	168	16	0	3	11	1	0	26	69	8	0	17	11	32	0	362
Grand Total	38	1089	134	0	50	105	18	0	263	663	75	0	115	123	324	0	2997
Apprch %	3	86.4	10.6	0	28.9	60.7	10.4	0	26.3	66.2	7.5	0	20.5	21.9	57.7	0	
Total %	1.3	36.3	4.5	0	1.7	3.5	0.6	0	8.8	22.1	2.5	0	3.8	4.1	10.8	0	

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

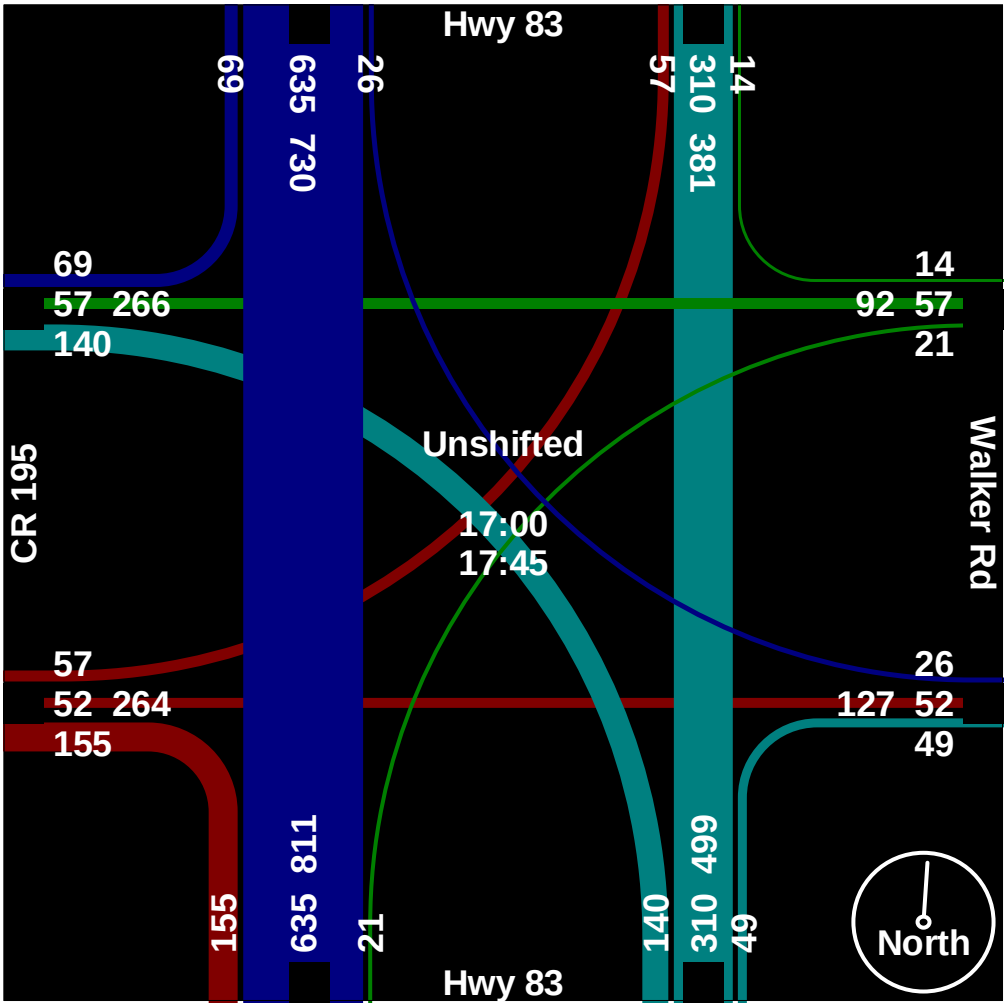
File Name : Hwy 83 - Walker Rd PM
Site Code : 184820
Start Date : 8/29/2018
Page No : 2

	Hwy 83 Southbound					Walker Rd Westbound					Hwy 83 Northbound					CR 195 Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 16:15 to 18:00 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 17:00																					
17:00	**8**	156	19	0	183	3	11	**5**	0	19	**40**	**94**	11	0	**145**	9	**16**	**45**	0	70	**417**
17:15	6	147	13	0	166	5	**19**	4	0	28	35	60	14	0	109	**19**	11	44	0	**74**	377
17:30	4	162	**22**	0	188	**11**	15	4	0	**30**	38	89	**15**	0	142	11	13	30	0	54	414
17:45	8	**170**	15	0	**193**	2	12	1	0	15	27	67	9	0	103	18	12	36	0	66	377
Total Volume	26	635	69	0	730	21	57	14	0	92	140	310	49	0	499	57	52	155	0	264	1585
% App. Total	3.6	87	9.5	0		22.8	62	15.2	0		28.1	62.1	9.8	0		21.6	19.7	58.7	0		
PHF	.813	.934	.784	.000	.946	.477	.750	.700	.000	.767	.875	.824	.817	.000	.860	.750	.813	.861	.000	.892	.950



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

File Name : Hwy 83 - Walker Rd PM
Site Code : 184820
Start Date : 8/29/2018
Page No : 3



Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	35	24	134	48	87	169	360	8	8	242	66
Future Volume (vph)	35	24	134	48	87	169	360	8	8	242	66
Turn Type	Perm	NA	Free	Perm	NA	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases		4			8	5	2		1	6	
Permitted Phases	4		Free	8		2		2	6		6
Detector Phase	4	4		8	8	5	2	2	1	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	5.0
Minimum Split (s)	10.0	10.0		10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Total Split (s)	25.0	25.0		25.0	25.0	10.0	55.0	55.0	10.0	55.0	55.0
Total Split (%)	27.8%	27.8%		27.8%	27.8%	11.1%	61.1%	61.1%	11.1%	61.1%	61.1%
Yellow Time (s)	3.0	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	2.0
Lost Time Adjust (s)		0.0			0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		5.0			5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag						Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?						Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None		None	None	None	Max	Max	None	Max	Max
Act Effct Green (s)		13.7	83.9		13.7	59.2	58.3	58.3	55.1	50.1	50.1
Actuated g/C Ratio		0.16	1.00		0.16	0.71	0.69	0.69	0.66	0.60	0.60
v/c Ratio		0.29	0.08		0.66	0.26	0.32	0.01	0.01	0.26	0.08
Control Delay		34.0	0.1		41.9	5.6	7.2	0.0	4.8	9.5	2.2
Queue Delay		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay		34.0	0.1		41.9	5.6	7.2	0.0	4.8	9.5	2.2
LOS		C	A		D	A	A	A	A	A	A
Approach Delay		10.5			41.9		6.6			7.9	
Approach LOS		B			D		A			A	

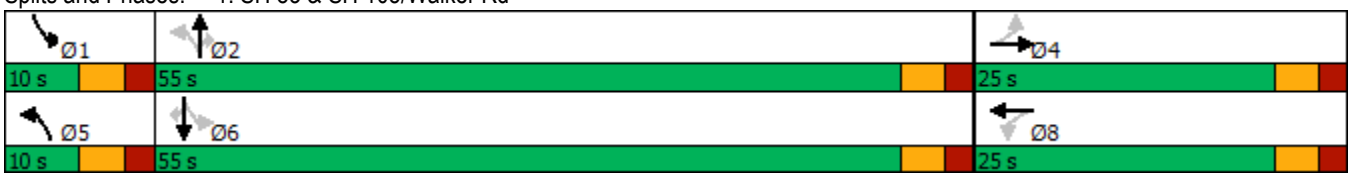
Intersection Summary			
Cycle Length: 90			
Actuated Cycle Length: 83.9			
Natural Cycle: 45			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.66			
Intersection Signal Delay: 12.2		Intersection LOS: B	
Intersection Capacity Utilization 51.8%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 1: SH 83 & SH 105/Walker Rd

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	42	44	123	15	51	119	224	22	15	261	37
Future Volume (vph)	42	44	123	15	51	119	224	22	15	261	37
Turn Type	Perm	NA	Free	Perm	NA	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases		4			8	5	2		1	6	
Permitted Phases	4		Free	8		2		2	6		6
Detector Phase	4	4		8	8	5	2	2	1	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	5.0
Minimum Split (s)	10.0	10.0		10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Total Split (s)	25.0	25.0		25.0	25.0	10.0	55.0	55.0	10.0	55.0	55.0
Total Split (%)	27.8%	27.8%		27.8%	27.8%	11.1%	61.1%	61.1%	11.1%	61.1%	61.1%
Yellow Time (s)	3.0	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	2.0
Lost Time Adjust (s)		0.0			0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		5.0			5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag						Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?						Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None		None	None	None	Max	Max	None	Max	Max
Act Effct Green (s)		10.2	76.1		10.0	57.8	58.3	58.3	55.0	52.6	52.6
Actuated g/C Ratio		0.13	1.00		0.13	0.76	0.77	0.77	0.72	0.69	0.69
v/c Ratio		0.47	0.09		0.41	0.15	0.17	0.02	0.02	0.20	0.03
Control Delay		40.2	0.1		34.8	3.7	4.9	0.0	3.5	7.4	0.2
Queue Delay		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay		40.2	0.1		34.8	3.7	4.9	0.0	3.5	7.4	0.2
LOS		D	A		C	A	A	A	A	A	A
Approach Delay		16.5			34.8		4.2			6.3	
Approach LOS		B			C		A			A	

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 76.1	
Natural Cycle: 40	
Control Type: Semi Act-Uncoord	
Maximum v/c Ratio: 0.47	
Intersection Signal Delay: 10.4	Intersection LOS: B
Intersection Capacity Utilization 43.7%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 1: SH 83 & SH 105/Walker Rd



Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	57	52	155	21	57	140	310	49	26	429	69
Future Volume (vph)	57	52	155	21	57	140	310	49	26	429	69
Turn Type	Perm	NA	Free	Perm	NA	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases		4			8	5	2		1	6	
Permitted Phases	4		Free	8		2		2	6		6
Detector Phase	4	4		8	8	5	2	2	1	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	5.0
Minimum Split (s)	10.0	10.0		10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Total Split (s)	25.0	25.0		25.0	25.0	10.0	55.0	55.0	10.0	55.0	55.0
Total Split (%)	27.8%	27.8%		27.8%	27.8%	11.1%	61.1%	61.1%	11.1%	61.1%	61.1%
Yellow Time (s)	3.0	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	2.0
Lost Time Adjust (s)		0.0			0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		5.0			5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag						Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?						Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None		None	None	None	Max	Max	None	Max	Max
Act Effct Green (s)		11.3	79.1		11.0	58.7	58.1	58.1	55.5	50.5	50.5
Actuated g/C Ratio		0.14	1.00		0.14	0.74	0.73	0.73	0.70	0.64	0.64
v/c Ratio		0.54	0.10		0.39	0.24	0.26	0.05	0.03	0.36	0.07
Control Delay		42.1	0.1		33.9	4.6	6.8	1.0	3.8	9.2	1.6
Queue Delay		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay		42.1	0.1		33.9	4.6	6.8	1.0	3.8	9.2	1.6
LOS		D	A		C	A	A	A	A	A	A
Approach Delay		17.5			33.9		5.6			7.9	
Approach LOS		B			C		A			A	

Intersection Summary			
Cycle Length: 90			
Actuated Cycle Length: 79.1			
Natural Cycle: 40			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.54			
Intersection Signal Delay: 10.4		Intersection LOS: B	
Intersection Capacity Utilization 54.9%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 1: SH 83 & SH 105/Walker Rd

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	39	26	148	53	96	187	397	9	9	267	73
Future Volume (vph)	39	26	148	53	96	187	397	9	9	267	73
Turn Type	Perm	NA	Free	Perm	NA	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases		4			8	5	2		1	6	
Permitted Phases	4		Free	8		2		2	6		6
Detector Phase	4	4		8	8	5	2	2	1	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	5.0
Minimum Split (s)	10.0	10.0		10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Total Split (s)	25.0	25.0		25.0	25.0	10.0	55.0	55.0	10.0	55.0	55.0
Total Split (%)	27.8%	27.8%		27.8%	27.8%	11.1%	61.1%	61.1%	11.1%	61.1%	61.1%
Yellow Time (s)	3.0	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	2.0
Lost Time Adjust (s)		0.0			0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		5.0			5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag						Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?						Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None		None	None	None	Max	Max	None	Max	Max
Act Effct Green (s)		14.5	84.7		14.5	59.2	58.3	58.3	55.1	50.1	50.1
Actuated g/C Ratio		0.17	1.00		0.17	0.70	0.69	0.69	0.65	0.59	0.59
v/c Ratio		0.32	0.09		0.69	0.30	0.35	0.01	0.02	0.28	0.09
Control Delay		34.6	0.1		43.6	6.1	7.8	0.0	4.9	10.0	2.4
Queue Delay		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay		34.6	0.1		43.6	6.1	7.8	0.0	4.9	10.0	2.4
LOS		C	A		D	A	A	A	A	B	A
Approach Delay		10.6			43.6		7.1			8.3	
Approach LOS		B			D		A			A	

Intersection Summary			
Cycle Length: 90			
Actuated Cycle Length: 84.7			
Natural Cycle: 50			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.69			
Intersection Signal Delay: 12.8		Intersection LOS: B	
Intersection Capacity Utilization 54.7%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 1: SH 83 & SH 105/Walker Rd

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	46	49	136	17	56	131	247	24	17	288	41
Future Volume (vph)	46	49	136	17	56	131	247	24	17	288	41
Turn Type	Perm	NA	Free	Perm	NA	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases		4			8	5	2		1	6	
Permitted Phases	4		Free	8		2		2	6		6
Detector Phase	4	4		8	8	5	2	2	1	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	5.0
Minimum Split (s)	10.0	10.0		10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Total Split (s)	25.0	25.0		25.0	25.0	10.0	55.0	55.0	10.0	55.0	55.0
Total Split (%)	27.8%	27.8%		27.8%	27.8%	11.1%	61.1%	61.1%	11.1%	61.1%	61.1%
Yellow Time (s)	3.0	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	2.0
Lost Time Adjust (s)		0.0			0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		5.0			5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag						Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?						Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None		None	None	None	Max	Max	None	Max	Max
Act Effct Green (s)		10.8	78.7		10.7	59.6	59.9	59.9	55.5	50.5	50.5
Actuated g/C Ratio		0.14	1.00		0.14	0.76	0.76	0.76	0.71	0.64	0.64
v/c Ratio		0.53	0.10		0.44	0.17	0.19	0.02	0.02	0.24	0.04
Control Delay		42.3	0.1		35.2	4.0	5.2	0.0	3.7	7.9	0.4
Queue Delay		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay		42.3	0.1		35.2	4.0	5.2	0.0	3.7	7.9	0.4
LOS		D	A		D	A	A	A	A	A	A
Approach Delay		17.5			35.2		4.5			6.8	
Approach LOS		B			D		A			A	

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 78.7	
Natural Cycle: 40	
Control Type: Semi Act-Uncoord	
Maximum v/c Ratio: 0.53	
Intersection Signal Delay: 10.9	Intersection LOS: B
Intersection Capacity Utilization 46.3%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 1: SH 83 & SH 105/Walker Rd

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	63	57	171	23	63	155	342	54	29	474	76
Future Volume (vph)	63	57	171	23	63	155	342	54	29	474	76
Turn Type	Perm	NA	Free	Perm	NA	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases		4			8	5	2		1	6	
Permitted Phases	4		Free	8		2		2	6		6
Detector Phase	4	4		8	8	5	2	2	1	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	5.0
Minimum Split (s)	10.0	10.0		10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Total Split (s)	25.0	25.0		25.0	25.0	10.0	55.0	55.0	10.0	55.0	55.0
Total Split (%)	27.8%	27.8%		27.8%	27.8%	11.1%	61.1%	61.1%	11.1%	61.1%	61.1%
Yellow Time (s)	3.0	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	2.0
Lost Time Adjust (s)		0.0			0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		5.0			5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag						Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?						Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None		None	None	None	Max	Max	None	Max	Max
Act Effct Green (s)		12.1	82.3		12.1	58.2	56.3	56.3	55.1	50.1	50.1
Actuated g/C Ratio		0.15	1.00		0.15	0.71	0.68	0.68	0.67	0.61	0.61
v/c Ratio		0.59	0.11		0.40	0.30	0.31	0.06	0.04	0.42	0.08
Control Delay		44.2	0.1		33.4	5.4	7.6	1.4	4.1	10.5	2.0
Queue Delay		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay		44.2	0.1		33.4	5.4	7.6	1.4	4.1	10.5	2.0
LOS		D	A		C	A	A	A	A	B	A
Approach Delay		18.3			33.4		6.4			9.0	
Approach LOS		B			C		A			A	

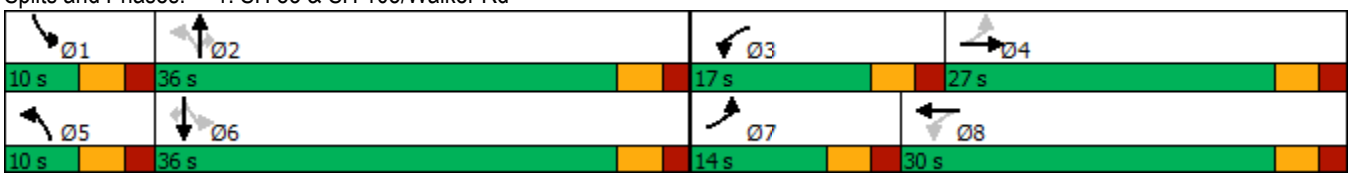
Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 82.3	
Natural Cycle: 45	
Control Type: Semi Act-Uncoord	
Maximum v/c Ratio: 0.59	
Intersection Signal Delay: 11.3	Intersection LOS: B
Intersection Capacity Utilization 59.2%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 1: SH 83 & SH 105/Walker Rd

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	39	219	148	189	126	45	298	444	9	92	267	73
Future Volume (vph)	39	219	148	189	126	45	298	444	9	92	267	73
Turn Type	pm+pt	NA	Free	pm+pt	NA	Free	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		Free	8		Free	2		2	6		6
Detector Phase	7	4		3	8		5	2	2	1	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	5.0
Minimum Split (s)	10.0	10.0		10.0	10.0		10.0	10.0	10.0	10.0	10.0	10.0
Total Split (s)	14.0	27.0		17.0	30.0		10.0	36.0	36.0	10.0	36.0	36.0
Total Split (%)	15.6%	30.0%		18.9%	33.3%		11.1%	40.0%	40.0%	11.1%	40.0%	40.0%
Yellow Time (s)	3.0	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	2.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None		None	None		None	Max	Max	None	Max	Max
Act Effct Green (s)	26.1	19.4	87.3	36.0	29.0	87.3	36.1	31.0	31.0	36.1	31.0	31.0
Actuated g/C Ratio	0.30	0.22	1.00	0.41	0.33	1.00	0.41	0.36	0.36	0.41	0.36	0.36
v/c Ratio	0.10	0.82	0.09	0.81	0.31	0.04	0.87	0.76	0.02	0.60	0.47	0.13
Control Delay	16.1	49.1	0.1	38.1	25.1	0.0	45.7	34.7	0.1	27.4	25.4	1.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	16.1	49.1	0.1	38.1	25.1	0.0	45.7	34.7	0.1	27.4	25.4	1.2
LOS	B	D	A	D	C	A	D	C	A	C	C	A
Approach Delay		32.8			28.8			38.5			22.1	
Approach LOS		C			C			D			C	

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 87.3	
Natural Cycle: 75	
Control Type: Semi Act-Uncoord	
Maximum v/c Ratio: 0.87	
Intersection Signal Delay: 31.5	Intersection LOS: C
Intersection Capacity Utilization 69.2%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 1: SH 83 & SH 105/Walker Rd



Intersection	
Intersection Delay, s/veh	6.4
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	573	241	353	2
Demand Flow Rate, veh/h	584	246	360	2
Vehicles Circulating, veh/h	54	328	53	573
Vehicles Exiting, veh/h	521	85	585	1
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	7.3	6.2	5.2	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	584	246	360	2
Cap Entry Lane, veh/h	1306	988	1307	769
Entry HV Adj Factor	0.981	0.981	0.981	1.000
Flow Entry, veh/h	573	241	353	2
Cap Entry, veh/h	1281	968	1282	769
V/C Ratio	0.447	0.249	0.275	0.003
Control Delay, s/veh	7.3	6.2	5.2	4.7
LOS	A	A	A	A
95th %tile Queue, veh	2	1	1	0

Intersection	
Int Delay, s/veh	1.5

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	0	187	79	96	207
Future Vol, veh/h	0	0	187	79	96	207
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	-	-	155	255	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	53	53	53	53	53	53
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	353	149	181	391

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1106	353	0	0	502	0
Stage 1	353	-	-	-	-	-
Stage 2	753	-	-	-	-	-
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	233	691	-	-	1062	-
Stage 1	711	-	-	-	-	-
Stage 2	465	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	193	691	-	-	1062	-
Mov Cap-2 Maneuver	244	-	-	-	-	-
Stage 1	590	-	-	-	-	-
Stage 2	465	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	0	0	2.9
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	-	1062	-
HCM Lane V/C Ratio	-	-	-	0.171	-
HCM Control Delay (s)	-	-	0	9.1	-
HCM Lane LOS	-	-	A	A	-
HCM 95th %tile Q(veh)	-	-	-	0.6	-

Intersection	
Int Delay, s/veh	0.9

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	3	31	234	30	36	171
Future Vol, veh/h	3	31	234	30	36	171
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	-	-	-	205	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	53	92	92	53
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	3	34	442	33	39	323

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	860	459	0	0	475	0
Stage 1	459	-	-	-	-	-
Stage 2	401	-	-	-	-	-
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	326	602	-	-	1087	-
Stage 1	636	-	-	-	-	-
Stage 2	676	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	314	602	-	-	1087	-
Mov Cap-2 Maneuver	428	-	-	-	-	-
Stage 1	613	-	-	-	-	-
Stage 2	676	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	11.6	0	0.9
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	581	1087	-
HCM Lane V/C Ratio	-	-	0.064	0.036	-
HCM Control Delay (s)	-	-	11.6	8.4	-
HCM Lane LOS	-	-	B	A	-
HCM 95th %tile Q(veh)	-	-	0.2	0.1	-

Intersection	
Int Delay, s/veh	8.8

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	108	140	156	156	171	3
Future Vol, veh/h	108	140	156	156	171	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	255	-	-	205	205	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	53	53	53	53	53	53
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	108	140	294	294	323	6

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	588	0	-	0	650	294
Stage 1	-	-	-	-	294	-
Stage 2	-	-	-	-	356	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	987	-	-	-	434	745
Stage 1	-	-	-	-	756	-
Stage 2	-	-	-	-	709	-
Platoon blocked, %			-	-	-	
Mov Cap-1 Maneuver	987	-	-	-	387	745
Mov Cap-2 Maneuver	-	-	-	-	465	-
Stage 1	-	-	-	-	674	-
Stage 2	-	-	-	-	709	-

Approach	EB	WB	SB
HCM Control Delay, s	4	0	28.2
HCM LOS			D

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	987	-	-	-	465	745
HCM Lane V/C Ratio	0.109	-	-	-	0.694	0.008
HCM Control Delay (s)	9.1	-	-	-	28.5	9.9
HCM Lane LOS	A	-	-	-	D	A
HCM 95th %tile Q(veh)	0.4	-	-	-	5.2	0

Intersection	
Int Delay, s/veh	10.3

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	311	0	0	0	0	311
Future Vol, veh/h	311	0	0	0	0	311
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	255	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	53	92	92	75	53	53
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	587	0	0	0	0	587

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	1	0	-	0	1175	1
Stage 1	-	-	-	-	1	-
Stage 2	-	-	-	-	1174	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1622	-	-	-	212	1084
Stage 1	-	-	-	-	1022	-
Stage 2	-	-	-	-	294	-
Platoon blocked, %			-	-	-	
Mov Cap-1 Maneuver	1622	-	-	-	135	1084
Mov Cap-2 Maneuver	-	-	-	-	135	-
Stage 1	-	-	-	-	652	-
Stage 2	-	-	-	-	294	-

Approach	EB	WB	SB
HCM Control Delay, s	8.5	0	12.2
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1622	-	-	-	1084
HCM Lane V/C Ratio	0.362	-	-	-	0.541
HCM Control Delay (s)	8.5	-	-	-	12.2
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	1.7	-	-	-	3.4

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	46	129	136	139	129	37	184	270	24	51	288	41
Future Volume (vph)	46	129	136	139	129	37	184	270	24	51	288	41
Turn Type	pm+pt	NA	Free	pm+pt	NA	Free	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		Free	8		Free	2		2	6		6
Detector Phase	7	4		3	8		5	2	2	1	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	5.0
Minimum Split (s)	10.0	10.0		10.0	10.0		10.0	10.0	10.0	10.0	10.0	10.0
Total Split (s)	10.0	25.0		10.0	25.0		10.0	45.0	45.0	10.0	45.0	45.0
Total Split (%)	11.1%	27.8%		11.1%	27.8%		11.1%	50.0%	50.0%	11.1%	50.0%	50.0%
Yellow Time (s)	3.0	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	2.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None		None	None		None	Max	Max	None	Max	Max
Act Effct Green (s)	17.9	12.9	83.0	20.0	17.0	83.0	46.2	42.2	42.2	45.1	40.1	40.1
Actuated g/C Ratio	0.22	0.16	1.00	0.24	0.20	1.00	0.56	0.51	0.51	0.54	0.48	0.48
v/c Ratio	0.18	0.60	0.10	0.70	0.45	0.03	0.34	0.31	0.04	0.11	0.32	0.05
Control Delay	23.6	41.4	0.1	41.6	34.5	0.0	10.5	14.5	0.1	8.3	15.1	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	23.6	41.4	0.1	41.6	34.5	0.0	10.5	14.5	0.1	8.3	15.1	0.1
LOS	C	D	A	D	C	A	B	B	A	A	B	A
Approach Delay		22.2			33.6			12.1			12.4	
Approach LOS		C			C			B			B	

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 83	
Natural Cycle: 50	
Control Type: Semi Act-Uncoord	
Maximum v/c Ratio: 0.70	
Intersection Signal Delay: 19.5	Intersection LOS: B
Intersection Capacity Utilization 56.5%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 1: SH 83 & SH 105/Walker Rd

Intersection	
Intersection Delay, s/veh	4.8
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	251	120	313	1
Demand Flow Rate, veh/h	256	122	319	1
Vehicles Circulating, veh/h	15	299	100	420
Vehicles Exiting, veh/h	406	120	171	1
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	4.7	5.2	4.0
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	256	122	319	1
Cap Entry Lane, veh/h	1359	1017	1246	899
Entry HV Adj Factor	0.981	0.983	0.981	1.000
Flow Entry, veh/h	251	120	313	1
Cap Entry, veh/h	1333	1000	1223	899
V/C Ratio	0.188	0.120	0.256	0.001
Control Delay, s/veh	4.3	4.7	5.2	4.0
LOS	A	A	A	A
95th %tile Queue, veh	1	0	1	0

Intersection	
Int Delay, s/veh	4.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	148	87	0	0	126
Future Vol, veh/h	0	148	87	0	0	126
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	-	-	155	255	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	75	75	75	75	75	75
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	197	116	0	0	168

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	284	116	0	0	116	0
Stage 1	116	-	-	-	-	-
Stage 2	168	-	-	-	-	-
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	936	-	-	1473	-
Stage 1	909	-	-	-	-	-
Stage 2	862	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	706	936	-	-	1473	-
Mov Cap-2 Maneuver	725	-	-	-	-	-
Stage 1	909	-	-	-	-	-
Stage 2	862	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.9	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	936	1473	-
HCM Lane V/C Ratio	-	-	0.211	-	-
HCM Control Delay (s)	-	-	9.9	0	-
HCM Lane LOS	-	-	A	A	-
HCM 95th %tile Q(veh)	-	-	0.8	0	-

Intersection	
Int Delay, s/veh	0.7

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	1	13	74	7	8	118
Future Vol, veh/h	1	13	74	7	8	118
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	-	-	-	205	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	75	92	92	75
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1	14	99	8	9	157

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	278	103	0	0	107	0
Stage 1	103	-	-	-	-	-
Stage 2	175	-	-	-	-	-
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	712	952	-	-	1484	-
Stage 1	921	-	-	-	-	-
Stage 2	855	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	708	952	-	-	1484	-
Mov Cap-2 Maneuver	722	-	-	-	-	-
Stage 1	915	-	-	-	-	-
Stage 2	855	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.9	0	0.4
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	931	1484	-
HCM Lane V/C Ratio	-	-	0.016	0.006	-
HCM Control Delay (s)	-	-	8.9	7.4	-
HCM Lane LOS	-	-	A	A	-
HCM 95th %tile Q(veh)	-	-	0.1	0	-

Intersection	
Int Delay, s/veh	3.7

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	7	96	74	74	118	1
Future Vol, veh/h	7	96	74	74	118	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	255	-	-	205	205	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	75	75	75	75	75	75
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	9	128	99	99	157	1

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	198	0	-	0	245	99
Stage 1	-	-	-	-	99	-
Stage 2	-	-	-	-	146	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1375	-	-	-	743	957
Stage 1	-	-	-	-	925	-
Stage 2	-	-	-	-	881	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1375	-	-	-	738	957
Mov Cap-2 Maneuver	-	-	-	-	744	-
Stage 1	-	-	-	-	919	-
Stage 2	-	-	-	-	881	-

Approach	EB	WB	SB
HCM Control Delay, s	0.5	0	11.1
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1375	-	-	-	744	957
HCM Lane V/C Ratio	0.007	-	-	-	0.211	0.001
HCM Control Delay (s)	7.6	-	-	-	11.1	8.8
HCM Lane LOS	A	-	-	-	B	A
HCM 95th %tile Q(veh)	0	-	-	-	0.8	0

Intersection	
Int Delay, s/veh	8.3

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	214	0	0	0	0	148
Future Vol, veh/h	214	0	0	0	0	148
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	255	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	75	92	92	75	75	75
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	285	0	0	0	0	197

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	1	0	-	0	571	1
Stage 1	-	-	-	-	1	-
Stage 2	-	-	-	-	570	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1622	-	-	-	482	1084
Stage 1	-	-	-	-	1022	-
Stage 2	-	-	-	-	566	-
Platoon blocked, %			-	-	-	
Mov Cap-1 Maneuver	1622	-	-	-	397	1084
Mov Cap-2 Maneuver	-	-	-	-	397	-
Stage 1	-	-	-	-	842	-
Stage 2	-	-	-	-	566	-

Approach	EB	WB	SB
HCM Control Delay, s	7.7	0	9.1
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1622	-	-	-	1084
HCM Lane V/C Ratio	0.176	-	-	-	0.182
HCM Control Delay (s)	7.7	-	-	-	9.1
HCM Lane LOS	A	-	-	-	A
HCM 95th %tile Q(veh)	0.6	-	-	-	0.7

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	63	99	171	83	105	29	175	350	54	47	474	76
Future Volume (vph)	63	99	171	83	105	29	175	350	54	47	474	76
Turn Type	pm+pt	NA	Free	pm+pt	NA	Free	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		Free	8		Free	2		2	6		6
Detector Phase	7	4		3	8		5	2	2	1	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	5.0
Minimum Split (s)	10.0	10.0		10.0	10.0		10.0	10.0	10.0	10.0	10.0	10.0
Total Split (s)	10.0	25.0		10.0	25.0		10.0	45.0	45.0	10.0	45.0	45.0
Total Split (%)	11.1%	27.8%		11.1%	27.8%		11.1%	50.0%	50.0%	11.1%	50.0%	50.0%
Yellow Time (s)	3.0	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	2.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None		None	None		None	Max	Max	None	Max	Max
Act Effct Green (s)	13.1	9.7	75.6	13.1	9.7	75.6	48.4	47.0	47.0	46.1	41.0	41.0
Actuated g/C Ratio	0.17	0.13	1.00	0.17	0.13	1.00	0.64	0.62	0.62	0.61	0.54	0.54
v/c Ratio	0.26	0.44	0.11	0.32	0.44	0.02	0.39	0.35	0.06	0.08	0.47	0.08
Control Delay	26.0	38.4	0.1	27.4	38.4	0.0	9.6	12.6	0.1	6.9	15.0	0.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	26.0	38.4	0.1	27.4	38.4	0.0	9.6	12.6	0.1	6.9	15.0	0.3
LOS	C	D	A	C	D	A	A	B	A	A	B	A
Approach Delay		16.4			29.1			10.5			12.5	
Approach LOS		B			C			B			B	

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 75.6	
Natural Cycle: 60	
Control Type: Semi Act-Uncoord	
Maximum v/c Ratio: 0.47	
Intersection Signal Delay: 14.5	Intersection LOS: B
Intersection Capacity Utilization 58.4%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 1: SH 83 & SH 105/Walker Rd

Intersection	
Intersection Delay, s/veh	4.1
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	247	108	135	1
Demand Flow Rate, veh/h	252	110	138	1
Vehicles Circulating, veh/h	7	131	185	239
Vehicles Exiting, veh/h	233	192	74	2
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	3.8	4.3	3.3
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	252	110	138	1
Cap Entry Lane, veh/h	1370	1207	1143	1081
Entry HV Adj Factor	0.982	0.982	0.978	1.000
Flow Entry, veh/h	247	108	135	1
Cap Entry, veh/h	1345	1185	1118	1081
V/C Ratio	0.184	0.091	0.121	0.001
Control Delay, s/veh	4.2	3.8	4.3	3.3
LOS	A	A	A	A
95th %tile Queue, veh	1	0	0	0

Intersection	
Int Delay, s/veh	2.8

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	49	75	17	20	46
Future Vol, veh/h	0	49	75	17	20	46
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	155	255	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	53	82	18	22	50

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	176	82	0	0	100	0
Stage 1	82	-	-	-	-	-
Stage 2	94	-	-	-	-	-
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	814	978	-	-	1493	-
Stage 1	941	-	-	-	-	-
Stage 2	930	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	802	978	-	-	1493	-
Mov Cap-2 Maneuver	785	-	-	-	-	-
Stage 1	927	-	-	-	-	-
Stage 2	930	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.9	0	2.3
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	978	1493	-
HCM Lane V/C Ratio	-	-	0.054	0.015	-
HCM Control Delay (s)	-	-	8.9	7.4	-
HCM Lane LOS	-	-	A	A	-
HCM 95th %tile Q(veh)	-	-	0.2	0	-

Intersection	
Int Delay, s/veh	4.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	4	51	41	22	26	20
Future Vol, veh/h	4	51	41	22	26	20
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	-	-	-	205	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	4	55	45	24	28	22

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	135	57	0	0	69	0
Stage 1	57	-	-	-	-	-
Stage 2	78	-	-	-	-	-
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	859	1009	-	-	1532	-
Stage 1	966	-	-	-	-	-
Stage 2	945	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	844	1009	-	-	1532	-
Mov Cap-2 Maneuver	810	-	-	-	-	-
Stage 1	949	-	-	-	-	-
Stage 2	945	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.9	0	4.2
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	991	1532	-
HCM Lane V/C Ratio	-	-	0.06	0.018	-
HCM Control Delay (s)	-	-	8.9	7.4	-
HCM Lane LOS	-	-	A	A	-
HCM 95th %tile Q(veh)	-	-	0.2	0.1	-

Intersection	
Int Delay, s/veh	4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	38	16	24	24	20	4
Future Vol, veh/h	38	16	24	24	20	4
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	255	-	-	205	205	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	41	17	26	26	22	4

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	52	0	-	0	125	26
Stage 1	-	-	-	-	26	-
Stage 2	-	-	-	-	99	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1554	-	-	-	870	1050
Stage 1	-	-	-	-	997	-
Stage 2	-	-	-	-	925	-
Platoon blocked, %			-	-	-	
Mov Cap-1 Maneuver	1554	-	-	-	847	1050
Mov Cap-2 Maneuver	-	-	-	-	799	-
Stage 1	-	-	-	-	971	-
Stage 2	-	-	-	-	925	-

Approach	EB	WB	SB
HCM Control Delay, s	5.2	0	9.4
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1554	-	-	-	799	1050
HCM Lane V/C Ratio	0.027	-	-	-	0.027	0.004
HCM Control Delay (s)	7.4	-	-	-	9.6	8.4
HCM Lane LOS	A	-	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	-	0.1	0

Intersection	
Int Delay, s/veh	7.9

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	36	0	0	0	0	48
Future Vol, veh/h	36	0	0	0	0	48
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	255	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	39	0	0	0	0	52

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	1	0	-	0	79	1
Stage 1	-	-	-	-	1	-
Stage 2	-	-	-	-	78	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1622	-	-	-	924	1084
Stage 1	-	-	-	-	1022	-
Stage 2	-	-	-	-	945	-
Platoon blocked, %			-	-	-	
Mov Cap-1 Maneuver	1622	-	-	-	902	1084
Mov Cap-2 Maneuver	-	-	-	-	902	-
Stage 1	-	-	-	-	997	-
Stage 2	-	-	-	-	945	-

Approach	EB	WB	SB
HCM Control Delay, s	7.3	0	8.5
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1622	-	-	-	1084
HCM Lane V/C Ratio	0.024	-	-	-	0.048
HCM Control Delay (s)	7.3	-	-	-	8.5
HCM Lane LOS	A	-	-	-	A
HCM 95th %tile Q(veh)	0.1	-	-	-	0.2

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	52	40	199	79	129	55	263	633	12	14	424	98
Future Volume (vph)	52	40	199	79	129	55	263	633	12	14	424	98
Turn Type	pm+pt	NA	Free	Prot	NA	Free	Prot	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		Free			Free			2	6		6
Detector Phase	7	4		3	8		5	2	2	1	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	5.0
Minimum Split (s)	10.0	10.0		10.0	10.0		10.0	10.0	10.0	10.0	10.0	10.0
Total Split (s)	31.0	23.0		25.0	17.0		27.0	49.0	49.0	23.0	45.0	45.0
Total Split (%)	25.8%	19.2%		20.8%	14.2%		22.5%	40.8%	40.8%	19.2%	37.5%	37.5%
Yellow Time (s)	3.0	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	2.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None		None	None		None	None	None	None	None	None
Act Effct Green (s)	14.8	10.3	66.5	8.7	11.2	66.5	12.0	35.9	35.9	26.4	20.2	20.2
Actuated g/C Ratio	0.22	0.15	1.00	0.13	0.17	1.00	0.18	0.54	0.54	0.40	0.30	0.30
v/c Ratio	0.16	0.08	0.13	0.19	0.45	0.04	0.45	0.66	0.01	0.04	0.42	0.18
Control Delay	21.7	30.3	0.2	33.4	35.9	0.0	30.6	17.3	0.0	9.2	20.5	1.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	21.7	30.3	0.2	33.4	35.9	0.0	30.6	17.3	0.0	9.2	20.5	1.7
LOS	C	C	A	C	D	A	C	B	A	A	C	A
Approach Delay		8.2			27.6			20.9			16.8	
Approach LOS		A			C			C			B	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 66.5	
Natural Cycle: 60	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.66	
Intersection Signal Delay: 18.9	Intersection LOS: B
Intersection Capacity Utilization 65.1%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 1: SH 83 & SH 105/Walker Rd

Intersection	
Intersection Delay, s/veh	4.1
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	72	275	9	3
Demand Flow Rate, veh/h	73	280	9	3
Vehicles Circulating, veh/h	0	9	66	288
Vehicles Exiting, veh/h	291	66	7	1
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	3.1	4.4	2.8	3.5
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	73	280	9	3
Cap Entry Lane, veh/h	1380	1367	1290	1029
Entry HV Adj Factor	0.983	0.980	1.000	1.000
Flow Entry, veh/h	72	275	9	3
Cap Entry, veh/h	1356	1340	1290	1029
V/C Ratio	0.053	0.205	0.007	0.003
Control Delay, s/veh	3.1	4.4	2.8	3.5
LOS	A	A	A	A
95th %tile Queue, veh	0	1	0	0

Intersection	
Int Delay, s/veh	1.8

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	3	15	8	6	0
Future Vol, veh/h	0	3	15	8	6	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	150	-	-	205	205	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	85	85	85	75	75	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	4	18	11	8	0

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	29	0	-	0	22	18
Stage 1	-	-	-	-	18	-
Stage 2	-	-	-	-	4	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1584	-	-	-	995	1061
Stage 1	-	-	-	-	1005	-
Stage 2	-	-	-	-	1019	-
Platoon blocked, %			-	-	-	
Mov Cap-1 Maneuver	1584	-	-	-	995	1061
Mov Cap-2 Maneuver	-	-	-	-	915	-
Stage 1	-	-	-	-	1005	-
Stage 2	-	-	-	-	1019	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	9
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1584	-	-	-	915	-
HCM Lane V/C Ratio	-	-	-	-	0.009	-
HCM Control Delay (s)	0	-	-	-	9	0
HCM Lane LOS	A	-	-	-	A	A
HCM 95th %tile Q(veh)	0	-	-	-	0	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	62	81	183	27	76	18	185	394	34	25	457	55
Future Volume (vph)	62	81	183	27	76	18	185	394	34	25	457	55
Turn Type	pm+pt	NA	Free	Prot	NA	Free	Prot	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		Free			Free			2	6		6
Detector Phase	7	4		3	8		5	2	2	1	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	5.0
Minimum Split (s)	10.0	10.0		10.0	10.0		10.0	10.0	10.0	10.0	10.0	10.0
Total Split (s)	24.0	17.0		24.0	17.0		17.0	63.0	63.0	16.0	62.0	62.0
Total Split (%)	20.0%	14.2%		20.0%	14.2%		14.2%	52.5%	52.5%	13.3%	51.7%	51.7%
Yellow Time (s)	3.0	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	2.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None		None	None		None	None	None	None	None	None
Act Effct Green (s)	14.9	12.2	54.1	7.0	9.2	54.1	9.8	29.9	29.9	22.5	15.6	15.6
Actuated g/C Ratio	0.28	0.23	1.00	0.13	0.17	1.00	0.18	0.55	0.55	0.42	0.29	0.29
v/c Ratio	0.16	0.11	0.12	0.07	0.28	0.01	0.31	0.40	0.04	0.06	0.47	0.11
Control Delay	16.5	21.7	0.2	29.3	28.1	0.0	25.9	15.9	0.1	9.6	20.1	1.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	16.5	21.7	0.2	29.3	28.1	0.0	25.9	15.9	0.1	9.6	20.1	1.5
LOS	B	C	A	C	C	A	C	B	A	A	C	A
Approach Delay		8.6			24.2			17.9			17.7	
Approach LOS		A			C			B			B	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 54.1	
Natural Cycle: 50	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.47	
Intersection Signal Delay: 16.5	Intersection LOS: B
Intersection Capacity Utilization 47.5%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 1: SH 83 & SH 105/Walker Rd

Intersection	
Intersection Delay, s/veh	3.5
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	153	126	6	2
Demand Flow Rate, veh/h	156	129	6	2
Vehicles Circulating, veh/h	1	7	134	133
Vehicles Exiting, veh/h	134	133	23	2
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	3.6	3.4	3.0	3.0
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	156	129	6	2
Cap Entry Lane, veh/h	1378	1370	1204	1205
Entry HV Adj Factor	0.983	0.981	1.000	1.000
Flow Entry, veh/h	153	126	6	2
Cap Entry, veh/h	1356	1343	1204	1205
V/C Ratio	0.113	0.094	0.005	0.002
Control Delay, s/veh	3.6	3.4	3.0	3.0
LOS	A	A	A	A
95th %tile Queue, veh	0	0	0	0

Intersection	
Int Delay, s/veh	4.3

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	10	10	5	20	0
Future Vol, veh/h	0	10	10	5	20	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	150	-	-	205	205	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	85	85	85	75	75	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	12	12	7	27	0

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	19	0	-	0	24	12
Stage 1	-	-	-	-	12	-
Stage 2	-	-	-	-	12	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1597	-	-	-	992	1069
Stage 1	-	-	-	-	1011	-
Stage 2	-	-	-	-	1011	-
Platoon blocked, %			-	-	-	
Mov Cap-1 Maneuver	1597	-	-	-	992	1069
Mov Cap-2 Maneuver	-	-	-	-	914	-
Stage 1	-	-	-	-	1011	-
Stage 2	-	-	-	-	1011	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	9.1
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1597	-	-	-	914	-
HCM Lane V/C Ratio	-	-	-	-	0.029	-
HCM Control Delay (s)	0	-	-	-	9.1	0
HCM Lane LOS	A	-	-	-	A	A
HCM 95th %tile Q(veh)	0	-	-	-	0.1	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	85	93	230	36	85	21	216	545	74	42	751	103
Future Volume (vph)	85	93	230	36	85	21	216	545	74	42	751	103
Turn Type	pm+pt	NA	Free	Prot	NA	Free	Prot	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		Free			Free			2	6		6
Detector Phase	7	4		3	8		5	2	2	1	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	5.0
Minimum Split (s)	10.0	10.0		10.0	10.0		10.0	10.0	10.0	10.0	10.0	10.0
Total Split (s)	11.0	18.0		30.0	37.0		24.0	56.0	56.0	16.0	48.0	48.0
Total Split (%)	9.2%	15.0%		25.0%	30.8%		20.0%	46.7%	46.7%	13.3%	40.0%	40.0%
Yellow Time (s)	3.0	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	2.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None		None	None		None	None	None	None	None	None
Act Effct Green (s)	14.6	11.4	63.1	7.1	9.7	63.1	11.0	35.1	35.1	29.1	22.1	22.1
Actuated g/C Ratio	0.23	0.18	1.00	0.11	0.15	1.00	0.17	0.56	0.56	0.46	0.35	0.35
v/c Ratio	0.26	0.15	0.15	0.10	0.31	0.01	0.37	0.54	0.08	0.09	0.62	0.15
Control Delay	22.6	28.9	0.2	32.9	32.3	0.0	29.5	17.9	0.2	8.3	21.4	0.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	22.6	28.9	0.2	32.9	32.3	0.0	29.5	17.9	0.2	8.3	21.4	0.5
LOS	C	C	A	C	C	A	C	B	A	A	C	A
Approach Delay		11.4			27.8			19.3			18.3	
Approach LOS		B			C			B			B	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 63.1	
Natural Cycle: 60	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.62	
Intersection Signal Delay: 18.0	Intersection LOS: B
Intersection Capacity Utilization 56.7%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 1: SH 83 & SH 105/Walker Rd

Intersection	
Intersection Delay, s/veh	3.8
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	220	144	5	2
Demand Flow Rate, veh/h	224	147	5	2
Vehicles Circulating, veh/h	1	7	204	151
Vehicles Exiting, veh/h	152	202	21	3
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	4.0	3.5	3.2	3.1
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	224	147	5	2
Cap Entry Lane, veh/h	1378	1370	1121	1183
Entry HV Adj Factor	0.982	0.981	1.000	1.000
Flow Entry, veh/h	220	144	5	2
Cap Entry, veh/h	1354	1343	1121	1183
V/C Ratio	0.163	0.107	0.004	0.002
Control Delay, s/veh	4.0	3.5	3.2	3.1
LOS	A	A	A	A
95th %tile Queue, veh	1	0	0	0

Intersection	
Int Delay, s/veh	4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	10	10	5	20	0
Future Vol, veh/h	0	10	10	5	20	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	150	-	-	205	205	0
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	0	11	11	5	21	0

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	16	0	-	0	22	11
Stage 1	-	-	-	-	11	-
Stage 2	-	-	-	-	11	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1602	-	-	-	995	1070
Stage 1	-	-	-	-	1012	-
Stage 2	-	-	-	-	1012	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1602	-	-	-	995	1070
Mov Cap-2 Maneuver	-	-	-	-	916	-
Stage 1	-	-	-	-	1012	-
Stage 2	-	-	-	-	1012	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	9
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1602	-	-	-	916	-
HCM Lane V/C Ratio	-	-	-	-	0.023	-
HCM Control Delay (s)	0	-	-	-	9	0
HCM Lane LOS	A	-	-	-	A	A
HCM 95th %tile Q(veh)	0	-	-	-	0.1	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	52	380	177	380	241	99	414	676	123	195	385	98
Future Volume (vph)	52	380	177	380	241	99	414	676	123	195	385	98
Turn Type	pm+pt	NA	Free	Prot	NA	Free	Prot	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		Free			Free			2	6		6
Detector Phase	7	4		3	8		5	2	2	1	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	5.0
Minimum Split (s)	10.0	10.0		10.0	10.0		10.0	10.0	10.0	10.0	10.0	10.0
Total Split (s)	28.0	21.0		24.0	17.0		28.0	56.0	56.0	19.0	47.0	47.0
Total Split (%)	23.3%	17.5%		20.0%	14.2%		23.3%	46.7%	46.7%	15.8%	39.2%	39.2%
Yellow Time (s)	3.0	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	2.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None		None	None		None	None	None	None	None	None
Act Effct Green (s)	24.1	16.1	114.5	18.1	28.8	114.5	19.3	46.7	46.7	54.3	40.8	40.8
Actuated g/C Ratio	0.21	0.14	1.00	0.16	0.25	1.00	0.17	0.41	0.41	0.47	0.36	0.36
v/c Ratio	0.20	0.93	0.12	0.85	0.63	0.08	0.75	0.94	0.21	0.88	0.32	0.16
Control Delay	30.3	76.5	0.2	63.5	48.2	0.1	54.7	53.8	6.6	60.9	28.0	1.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	30.3	76.5	0.2	63.5	48.2	0.1	54.7	53.8	6.6	60.9	28.0	1.5
LOS	C	E	A	E	D	A	D	D	A	E	C	A
Approach Delay		52.7			49.6			48.7			34.9	
Approach LOS		D			D			D			C	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 114.5	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.94	
Intersection Signal Delay: 46.8	Intersection LOS: D
Intersection Capacity Utilization 84.4%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 1: SH 83 & SH 105/Walker Rd

Intersection	
Intersection Delay, s/veh	12.6
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	919	345	703	3
Demand Flow Rate, veh/h	937	352	717	3
Vehicles Circulating, veh/h	102	670	60	1021
Vehicles Exiting, veh/h	922	107	979	1
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	15.1	13.1	9.0	7.5
Approach LOS	C	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	937	352	717	3
Cap Entry Lane, veh/h	1244	697	1298	487
Entry HV Adj Factor	0.981	0.980	0.980	1.000
Flow Entry, veh/h	919	345	703	3
Cap Entry, veh/h	1219	683	1273	487
V/C Ratio	0.754	0.505	0.552	0.006
Control Delay, s/veh	15.1	13.1	9.0	7.5
LOS	C	B	A	A
95th %tile Queue, veh	8	3	4	0

Intersection	
Int Delay, s/veh	5.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	81	0	35	0	0	0	36	342	79	96	340	107
Future Vol, veh/h	81	0	35	0	0	0	36	342	79	96	340	107
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	-	-	-	-	-	-	205	-	155	255	-	155
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	75	75	75	95	90	75	75	90	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	85	0	37	0	0	0	38	380	105	128	378	113

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1143	1195	378	1165	1203	380	491	0	0	485	0	0
Stage 1	634	634	-	456	456	-	-	-	-	-	-	-
Stage 2	509	561	-	709	747	-	-	-	-	-	-	-
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	177	186	669	171	184	667	1072	-	-	1078	-	-
Stage 1	467	473	-	584	568	-	-	-	-	-	-	-
Stage 2	547	510	-	425	420	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	157	158	669	143	156	667	1072	-	-	1078	-	-
Mov Cap-2 Maneuver	157	158	-	143	156	-	-	-	-	-	-	-
Stage 1	451	417	-	564	548	-	-	-	-	-	-	-
Stage 2	528	492	-	354	370	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	46	0	0.6	1.8
HCM LOS	E	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1072	-	-	204	-	1078	-	-
HCM Lane V/C Ratio	0.035	-	-	0.599	-	0.119	-	-
HCM Control Delay (s)	8.5	-	-	46	0	8.8	-	-
HCM Lane LOS	A	-	-	E	A	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	3.4	-	0.4	-	-

Intersection	
Int Delay, s/veh	3.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	50	0	54	4	0	30	51	377	30	36	271	67
Future Vol, veh/h	50	0	54	4	0	30	51	377	30	36	271	67
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	-	-	-	-	-	-	205	-	-	205	-	155
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	85	92	92	85	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	54	0	59	4	0	33	55	444	33	39	319	73

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	984	984	319	1034	1041	461	392	0	0	477	0	0
Stage 1	397	397	-	571	571	-	-	-	-	-	-	-
Stage 2	587	587	-	463	470	-	-	-	-	-	-	-
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	228	248	722	210	230	600	1167	-	-	1085	-	-
Stage 1	629	603	-	506	505	-	-	-	-	-	-	-
Stage 2	496	497	-	579	560	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	202	228	722	181	211	600	1167	-	-	1085	-	-
Mov Cap-2 Maneuver	202	228	-	181	211	-	-	-	-	-	-	-
Stage 1	599	581	-	482	481	-	-	-	-	-	-	-
Stage 2	447	474	-	513	540	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	22	13.3	0.9	0.8
HCM LOS	C	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1167	-	-	323	472	1085	-	-
HCM Lane V/C Ratio	0.048	-	-	0.35	0.078	0.036	-	-
HCM Control Delay (s)	8.2	-	-	22	13.3	8.4	-	-
HCM Lane LOS	A	-	-	C	B	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	1.5	0.3	0.1	-	-

Intersection	
Int Delay, s/veh	101.7

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	227	147	197	231	193	136
Future Vol, veh/h	227	147	197	231	193	136
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	150	-	-	205	205	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	75	75	75	75	75	75
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	303	196	263	308	257	181

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	571	0	-	0	1065	263
Stage 1	-	-	-	-	263	-
Stage 2	-	-	-	-	802	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1002	-	-	-	~ 246	776
Stage 1	-	-	-	-	781	-
Stage 2	-	-	-	-	441	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1002	-	-	-	~ 172	776
Mov Cap-2 Maneuver	-	-	-	-	~ 123	-
Stage 1	-	-	-	-	545	-
Stage 2	-	-	-	-	441	-

Approach	EB	WB	SB
HCM Control Delay, s	6.2	0	$ 342.7
HCM LOS			F

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1002	-	-	-	123	776
HCM Lane V/C Ratio	0.302	-	-	-	2.092	0.234
HCM Control Delay (s)	10.1	-	-	-	$ 576.5	11
HCM Lane LOS	B	-	-	-	F	B
HCM 95th %tile Q(veh)	1.3	-	-	-	21.3	0.9

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

Intersection	
Int Delay, s/veh	9.6

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	295	16	43	16	16	295
Future Vol, veh/h	295	16	43	16	16	295
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	255	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	75	92	92	75	75	75
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	393	17	47	21	21	393

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	68	0	-	0	861	58
Stage 1	-	-	-	-	58	-
Stage 2	-	-	-	-	803	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1533	-	-	-	326	1008
Stage 1	-	-	-	-	965	-
Stage 2	-	-	-	-	441	-
Platoon blocked, %			-	-	-	
Mov Cap-1 Maneuver	1533	-	-	-	243	1008
Mov Cap-2 Maneuver	-	-	-	-	243	-
Stage 1	-	-	-	-	718	-
Stage 2	-	-	-	-	441	-

Approach	EB	WB	SB
HCM Control Delay, s	7.8	0	12.9
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1533	-	-	-	867
HCM Lane V/C Ratio	0.257	-	-	-	0.478
HCM Control Delay (s)	8.2	-	-	-	12.9
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	1	-	-	-	2.6

Intersection	
Intersection Delay, s/veh	17.1
Intersection LOS	C

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	227	147	197	231	193	136
Future Vol, veh/h	227	147	197	231	193	136
Peak Hour Factor	0.75	0.75	0.75	0.75	0.75	0.75
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	303	196	263	308	257	181
Number of Lanes	1	1	1	1	1	1

Approach	EB	WB	SB
Opposing Approach	WB	EB	
Opposing Lanes	2	2	0
Conflicting Approach Left	SB		WB
Conflicting Lanes Left	2	0	2
Conflicting Approach Right		SB	EB
Conflicting Lanes Right	0	2	2
HCM Control Delay	18.6	16	16.8
HCM LOS	C	C	C

Lane	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	100%	0%	0%	0%	100%	0%
Vol Thru, %	0%	100%	100%	0%	0%	0%
Vol Right, %	0%	0%	0%	100%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	227	147	197	231	193	136
LT Vol	227	0	0	0	193	0
Through Vol	0	147	197	0	0	0
RT Vol	0	0	0	231	0	136
Lane Flow Rate	303	196	263	308	257	181
Geometry Grp	7	7	7	7	7	7
Degree of Util (X)	0.621	0.375	0.501	0.526	0.555	0.329
Departure Headway (Hd)	7.391	6.879	6.86	6.143	7.764	6.541
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	484	519	523	582	463	546
Service Time	5.184	4.672	4.651	3.934	5.549	4.324
HCM Lane V/C Ratio	0.626	0.378	0.503	0.529	0.555	0.332
HCM Control Delay	21.7	13.8	16.4	15.6	19.9	12.5
HCM Lane LOS	C	B	C	C	C	B
HCM 95th-tile Q	4.2	1.7	2.8	3.1	3.3	1.4

Intersection	
Intersection Delay, s/veh	9.7
Intersection LOS	A

Approach	EB	WB	SB
Entry Lanes	1	1	1
Conflicting Circle Lanes	1	1	1
Adj Approach Flow, veh/h	499	571	438
Demand Flow Rate, veh/h	509	582	447
Vehicles Circulating, veh/h	262	309	268
Vehicles Exiting, veh/h	453	462	623
Ped Vol Crossing Leg, #/h	0	0	0
Ped Cap Adj	1.000	1.000	1.000
Approach Delay, s/veh	9.1	11.4	8.2
Approach LOS	A	B	A

Lane	Left	Left	Left
Designated Moves	LT	TR	LR
Assumed Moves	LT	TR	LR
RT Channelized			
Lane Util	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976
Entry Flow, veh/h	509	582	447
Cap Entry Lane, veh/h	1056	1007	1050
Entry HV Adj Factor	0.981	0.981	0.980
Flow Entry, veh/h	499	571	438
Cap Entry, veh/h	1036	987	1029
V/C Ratio	0.482	0.578	0.426
Control Delay, s/veh	9.1	11.4	8.2
LOS	A	B	A
95th %tile Queue, veh	3	4	2

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	62	314	153	371	274	87	293	430	136	178	394	55
Future Volume (vph)	62	314	153	371	274	87	293	430	136	178	394	55
Turn Type	pm+pt	NA	Free	Prot	NA	Free	Prot	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		Free			Free			2	6		6
Detector Phase	7	4		3	8		5	2	2	1	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	5.0
Minimum Split (s)	10.0	10.0		10.0	10.0		10.0	10.0	10.0	10.0	10.0	10.0
Total Split (s)	24.0	17.0		24.0	17.0		17.0	63.0	63.0	16.0	62.0	62.0
Total Split (%)	20.0%	14.2%		20.0%	14.2%		14.2%	52.5%	52.5%	13.3%	51.7%	51.7%
Yellow Time (s)	3.0	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	2.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None		None	None		None	None	None	None	None	None
Act Effct Green (s)	19.7	12.1	85.2	15.8	22.9	85.2	11.8	26.6	26.6	35.4	25.1	25.1
Actuated g/C Ratio	0.23	0.14	1.00	0.19	0.27	1.00	0.14	0.31	0.31	0.42	0.29	0.29
v/c Ratio	0.21	0.66	0.10	0.68	0.64	0.06	0.65	0.78	0.26	0.61	0.40	0.11
Control Delay	21.9	44.2	0.1	39.6	38.6	0.1	44.1	36.9	4.8	21.0	24.9	0.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	21.9	44.2	0.1	39.6	38.6	0.1	44.1	36.9	4.8	21.0	24.9	0.9
LOS	C	D	A	D	D	A	D	D	A	C	C	A
Approach Delay		28.9			34.5			33.7			21.7	
Approach LOS		C			C			C			C	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 85.2	
Natural Cycle: 60	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.78	
Intersection Signal Delay: 30.3	Intersection LOS: C
Intersection Capacity Utilization 68.4%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 1: SH 83 & SH 105/Walker Rd

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	731	163	810	2
Demand Flow Rate, veh/h	745	166	826	2
Vehicles Circulating, veh/h	60	763	113	927
Vehicles Exiting, veh/h	869	176	692	2
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	9.4	9.1	12.2	6.8
Approach LOS	A	A	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	745	166	826	2
Cap Entry Lane, veh/h	1298	634	1230	536
Entry HV Adj Factor	0.981	0.981	0.981	1.000
Flow Entry, veh/h	731	163	810	2
Cap Entry, veh/h	1273	622	1206	536
V/C Ratio	0.574	0.262	0.672	0.004
Control Delay, s/veh	9.4	9.1	12.2	6.8
LOS	A	A	B	A
95th %tile Queue, veh	4	1	6	0

Intersection	
Int Delay, s/veh	8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	113	0	44	7	0	141	34	277	0	0	282	110
Future Vol, veh/h	113	0	44	7	0	141	34	277	0	0	282	110
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	-	-	-	-	-	-	205	-	155	255	-	155
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	75	75	75	92	85	75	75	85	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	119	0	46	9	0	188	37	326	0	0	332	116

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	826	732	332	813	848	326	448	0	0	326	0	0
Stage 1	332	332	-	400	400	-	-	-	-	-	-	-
Stage 2	494	400	-	413	448	-	-	-	-	-	-	-
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	291	348	710	297	298	715	1112	-	-	1234	-	-
Stage 1	681	644	-	626	602	-	-	-	-	-	-	-
Stage 2	557	602	-	616	573	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	209	337	710	271	288	715	1112	-	-	1234	-	-
Mov Cap-2 Maneuver	209	337	-	271	288	-	-	-	-	-	-	-
Stage 1	659	644	-	605	582	-	-	-	-	-	-	-
Stage 2	397	582	-	576	573	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	39.9	12.7	0.9	0
HCM LOS	E	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1112	-	-	261	664	1234	-	-
HCM Lane V/C Ratio	0.033	-	-	0.633	0.297	-	-	-
HCM Control Delay (s)	8.3	-	-	39.9	12.7	0	-	-
HCM Lane LOS	A	-	-	E	B	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	3.9	1.2	0	-	-

Intersection	
Int Delay, s/veh	3.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	73	0	66	2	0	12	49	225	7	8	254	72
Future Vol, veh/h	73	0	66	2	0	12	49	225	7	8	254	72
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	-	-	-	-	-	-	205	-	-	205	-	155
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	85	92	92	85	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	79	0	72	2	0	13	53	265	8	9	299	78

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	699	696	299	767	770	269	377	0	0	273	0	0
Stage 1	317	317	-	375	375	-	-	-	-	-	-	-
Stage 2	382	379	-	392	395	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	354	365	741	319	331	770	1181	-	-	1290	-	-
Stage 1	694	654	-	646	617	-	-	-	-	-	-	-
Stage 2	640	615	-	633	605	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	334	346	741	277	314	770	1181	-	-	1290	-	-
Mov Cap-2 Maneuver	334	346	-	277	314	-	-	-	-	-	-	-
Stage 1	663	649	-	617	589	-	-	-	-	-	-	-
Stage 2	601	587	-	568	601	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	16.9	11	1.3	0.2
HCM LOS	C	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1181	-	-	452	614	1290	-	-
HCM Lane V/C Ratio	0.045	-	-	0.334	0.025	0.007	-	-
HCM Control Delay (s)	8.2	-	-	16.9	11	7.8	-	-
HCM Lane LOS	A	-	-	C	B	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	1.4	0.1	0	-	-

Intersection	
Int Delay, s/veh	11.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	169	131	99	112	171	150
Future Vol, veh/h	169	131	99	112	171	150
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	150	-	-	205	205	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	85	75	75	75	75	85
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	199	175	132	149	228	176

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	281	0	-	0	705	132
Stage 1	-	-	-	-	132	-
Stage 2	-	-	-	-	573	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1282	-	-	-	403	917
Stage 1	-	-	-	-	894	-
Stage 2	-	-	-	-	564	-
Platoon blocked, %			-	-	-	
Mov Cap-1 Maneuver	1282	-	-	-	341	917
Mov Cap-2 Maneuver	-	-	-	-	332	-
Stage 1	-	-	-	-	755	-
Stage 2	-	-	-	-	564	-

Approach	EB	WB	SB
HCM Control Delay, s	4.4	0	25
HCM LOS			D

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1282	-	-	-	332	917
HCM Lane V/C Ratio	0.155	-	-	-	0.687	0.192
HCM Control Delay (s)	8.3	-	-	-	36.6	9.9
HCM Lane LOS	A	-	-	-	E	A
HCM 95th %tile Q(veh)	0.5	-	-	-	4.8	0.7

Intersection	
Int Delay, s/veh	7.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	203	46	23	11	7	141
Future Vol, veh/h	203	46	23	11	7	141
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	255	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	75	92	92	75	75	75
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	271	50	25	15	9	188

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	40	0	-	0	625	33
Stage 1	-	-	-	-	33	-
Stage 2	-	-	-	-	592	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1570	-	-	-	449	1041
Stage 1	-	-	-	-	989	-
Stage 2	-	-	-	-	553	-
Platoon blocked, %			-	-	-	
Mov Cap-1 Maneuver	1570	-	-	-	371	1041
Mov Cap-2 Maneuver	-	-	-	-	371	-
Stage 1	-	-	-	-	818	-
Stage 2	-	-	-	-	553	-

Approach	EB	WB	SB
HCM Control Delay, s	6.6	0	9.7
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1570	-	-	-	959
HCM Lane V/C Ratio	0.172	-	-	-	0.206
HCM Control Delay (s)	7.8	-	-	-	9.7
HCM Lane LOS	A	-	-	-	A
HCM 95th %tile Q(veh)	0.6	-	-	-	0.8

Intersection	
Intersection Delay, s/veh	11.8
Intersection LOS	B

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	169	131	99	112	171	150
Future Vol, veh/h	169	131	99	112	171	150
Peak Hour Factor	0.85	0.85	0.85	0.75	0.75	0.95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	199	154	116	149	228	158
Number of Lanes	1	1	1	1	1	1

Approach	EB	WB	SB
Opposing Approach	WB	EB	
Opposing Lanes	2	2	0
Conflicting Approach Left	SB		WB
Conflicting Lanes Left	2	0	2
Conflicting Approach Right		SB	EB
Conflicting Lanes Right	0	2	2
HCM Control Delay	12.1	10.2	12.5
HCM LOS	B	B	B

Lane	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	100%	0%	0%	0%	100%	0%
Vol Thru, %	0%	100%	100%	0%	0%	0%
Vol Right, %	0%	0%	0%	100%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	169	131	99	112	171	150
LT Vol	169	0	0	0	171	0
Through Vol	0	131	99	0	0	0
RT Vol	0	0	0	112	0	150
Lane Flow Rate	199	154	116	149	228	158
Geometry Grp	7	7	7	7	7	7
Degree of Util (X)	0.363	0.26	0.202	0.229	0.425	0.241
Departure Headway (Hd)	6.578	6.071	6.233	5.521	6.709	5.497
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	547	592	575	650	538	654
Service Time	4.314	3.806	3.971	3.259	4.442	3.23
HCM Lane V/C Ratio	0.364	0.26	0.202	0.229	0.424	0.242
HCM Control Delay	13	10.9	10.6	9.9	14.3	10
HCM Lane LOS	B	B	B	A	B	A
HCM 95th-tile Q	1.6	1	0.7	0.9	2.1	0.9

Intersection	
Intersection Delay, s/veh	6.1
Intersection LOS	A

Approach	EB	WB	SB
Entry Lanes	1	1	1
Conflicting Circle Lanes	1	1	1
Adj Approach Flow, veh/h	353	265	386
Demand Flow Rate, veh/h	360	270	394
Vehicles Circulating, veh/h	233	203	118
Vehicles Exiting, veh/h	279	390	355
Ped Vol Crossing Leg, #/h	0	0	0
Ped Cap Adj	1.000	1.000	1.000
Approach Delay, s/veh	6.7	5.5	6.0
Approach LOS	A	A	A

Lane	Left	Left	Left
Designated Moves	LT	TR	LR
Assumed Moves	LT	TR	LR
RT Channelized			
Lane Util	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976
Entry Flow, veh/h	360	270	394
Cap Entry Lane, veh/h	1088	1122	1223
Entry HV Adj Factor	0.980	0.980	0.980
Flow Entry, veh/h	353	265	386
Cap Entry, veh/h	1067	1100	1199
V/C Ratio	0.331	0.241	0.322
Control Delay, s/veh	6.7	5.5	6.0
LOS	A	A	A
95th %tile Queue, veh	1	1	1

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	85	293	206	384	286	83	312	581	176	217	651	103
Future Volume (vph)	85	293	206	384	286	83	312	581	176	217	651	103
Turn Type	pm+pt	NA	Free	Prot	NA	Free	Prot	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		Free			Free			2	6		6
Detector Phase	7	4		3	8		5	2	2	1	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	5.0
Minimum Split (s)	10.0	10.0		10.0	10.0		10.0	10.0	10.0	10.0	10.0	10.0
Total Split (s)	11.0	20.0		28.0	37.0		24.0	55.0	55.0	17.0	48.0	48.0
Total Split (%)	9.2%	16.7%		23.3%	30.8%		20.0%	45.8%	45.8%	14.2%	40.0%	40.0%
Yellow Time (s)	3.0	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	2.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None		None	None		None	None	None	None	None	None
Act Effct Green (s)	19.5	13.3	101.9	17.7	27.9	101.9	15.0	38.6	38.6	46.8	35.2	35.2
Actuated g/C Ratio	0.19	0.13	1.00	0.17	0.27	1.00	0.15	0.38	0.38	0.46	0.35	0.35
v/c Ratio	0.36	0.67	0.14	0.70	0.61	0.06	0.65	0.87	0.27	0.83	0.56	0.16
Control Delay	32.0	52.2	0.2	48.0	41.2	0.1	49.4	43.6	5.1	47.4	29.7	0.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	32.0	52.2	0.2	48.0	41.2	0.1	49.4	43.6	5.1	47.4	29.7	0.5
LOS	C	D	A	D	D	A	D	D	A	D	C	A
Approach Delay		30.9			40.1			38.8			30.7	
Approach LOS		C			D			D			C	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 101.9	
Natural Cycle: 70	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.87	
Intersection Signal Delay: 35.4	Intersection LOS: D
Intersection Capacity Utilization 79.0%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 1: SH 83 & SH 105/Walker Rd

Intersection	
Intersection Delay, s/veh	10.8
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	746	175	741	2
Demand Flow Rate, veh/h	761	179	756	2
Vehicles Circulating, veh/h	43	701	189	877
Vehicles Exiting, veh/h	836	244	615	3
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	9.4	8.7	12.7	6.4
Approach LOS	A	A	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	761	179	756	2
Cap Entry Lane, veh/h	1321	675	1138	564
Entry HV Adj Factor	0.981	0.980	0.980	1.000
Flow Entry, veh/h	746	175	741	2
Cap Entry, veh/h	1295	661	1115	564
V/C Ratio	0.576	0.265	0.664	0.004
Control Delay, s/veh	9.4	8.7	12.7	6.4
LOS	A	A	B	A
95th %tile Queue, veh	4	1	5	0

Intersection	
Int Delay, s/veh	5.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	131	0	45	2	0	47	34	313	17	20	209	123
Future Vol, veh/h	131	0	45	2	0	47	34	313	17	20	209	123
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	-	-	-	-	-	-	205	-	155	255	-	155
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	142	0	49	2	0	51	37	340	18	22	227	134

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	720	703	227	777	819	340	361	0	0	358	0	0
Stage 1	271	271	-	414	414	-	-	-	-	-	-	-
Stage 2	449	432	-	363	405	-	-	-	-	-	-	-
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	343	362	812	314	310	702	1198	-	-	1201	-	-
Stage 1	735	685	-	616	593	-	-	-	-	-	-	-
Stage 2	589	582	-	656	598	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	306	345	812	284	295	702	1198	-	-	1201	-	-
Mov Cap-2 Maneuver	306	345	-	284	295	-	-	-	-	-	-	-
Stage 1	712	673	-	597	575	-	-	-	-	-	-	-
Stage 2	529	564	-	605	587	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	25.3	10.9	0.8	0.5
HCM LOS	D	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1198	-	-	364	662	1201	-	-
HCM Lane V/C Ratio	0.031	-	-	0.526	0.08	0.018	-	-
HCM Control Delay (s)	8.1	-	-	25.3	10.9	8.1	-	-
HCM Lane LOS	A	-	-	D	B	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	2.9	0.3	0.1	-	-

Intersection	
Int Delay, s/veh	4.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	87	0	71	7	0	48	51	229	22	26	150	80
Future Vol, veh/h	87	0	71	7	0	48	51	229	22	26	150	80
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	-	-	-	-	-	-	205	-	-	205	-	155
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	95	0	77	8	0	52	55	249	24	28	163	87

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	616	602	163	672	677	261	250	0	0	273	0	0
Stage 1	219	219	-	371	371	-	-	-	-	-	-	-
Stage 2	397	383	-	301	306	-	-	-	-	-	-	-
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	403	414	882	370	375	778	1316	-	-	1290	-	-
Stage 1	783	722	-	649	620	-	-	-	-	-	-	-
Stage 2	629	612	-	708	662	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	358	388	882	322	351	778	1316	-	-	1290	-	-
Mov Cap-2 Maneuver	358	388	-	322	351	-	-	-	-	-	-	-
Stage 1	750	706	-	622	594	-	-	-	-	-	-	-
Stage 2	562	586	-	632	647	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	16.3	11	1.3	0.8
HCM LOS	C	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1316	-	-	488	659	1290	-	-
HCM Lane V/C Ratio	0.042	-	-	0.352	0.091	0.022	-	-
HCM Control Delay (s)	7.9	-	-	16.3	11	7.9	-	-
HCM Lane LOS	A	-	-	C	B	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	1.6	0.3	0.1	-	-

Intersection	
Int Delay, s/veh	7.7

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	222	91	51	80	88	139
Future Vol, veh/h	222	91	51	80	88	139
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	150	-	-	205	205	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	241	99	55	87	96	151

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	142	0	-	0	636	55
Stage 1	-	-	-	-	55	-
Stage 2	-	-	-	-	581	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1441	-	-	-	442	1012
Stage 1	-	-	-	-	968	-
Stage 2	-	-	-	-	559	-
Platoon blocked, %			-	-	-	
Mov Cap-1 Maneuver	1441	-	-	-	368	1012
Mov Cap-2 Maneuver	-	-	-	-	284	-
Stage 1	-	-	-	-	806	-
Stage 2	-	-	-	-	559	-

Approach	EB	WB	SB
HCM Control Delay, s	5.7	0	14.9
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1441	-	-	-	284	1012
HCM Lane V/C Ratio	0.167	-	-	-	0.337	0.149
HCM Control Delay (s)	8	-	-	-	24	9.2
HCM Lane LOS	A	-	-	-	C	A
HCM 95th %tile Q(veh)	0.6	-	-	-	1.4	0.5

Intersection	
Int Delay, s/veh	4.3

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	34	45	27	2	2	46
Future Vol, veh/h	34	45	27	2	2	46
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	255	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	37	49	29	2	2	50

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	31	0	-	0	153	30
Stage 1	-	-	-	-	30	-
Stage 2	-	-	-	-	123	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1582	-	-	-	839	1044
Stage 1	-	-	-	-	993	-
Stage 2	-	-	-	-	902	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1582	-	-	-	820	1044
Mov Cap-2 Maneuver	-	-	-	-	820	-
Stage 1	-	-	-	-	970	-
Stage 2	-	-	-	-	902	-

Approach	EB	WB	SB
HCM Control Delay, s	3.2	0	8.7
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1582	-	-	-	1032
HCM Lane V/C Ratio	0.023	-	-	-	0.051
HCM Control Delay (s)	7.3	-	-	-	8.7
HCM Lane LOS	A	-	-	-	A
HCM 95th %tile Q(veh)	0.1	-	-	-	0.2

Intersection	
Intersection Delay, s/veh	10.7
Intersection LOS	B

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	222	91	51	80	88	139
Future Vol, veh/h	222	91	51	80	88	139
Peak Hour Factor	0.85	0.85	0.85	0.75	0.75	0.95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	261	107	60	107	117	146
Number of Lanes	1	1	1	1	1	1

Approach	EB	WB	SB
Opposing Approach	WB	EB	
Opposing Lanes	2	2	0
Conflicting Approach Left	SB		WB
Conflicting Lanes Left	2	0	2
Conflicting Approach Right		SB	EB
Conflicting Lanes Right	0	2	2
HCM Control Delay	12	8.8	10
HCM LOS	B	A	A

Lane	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	100%	0%	0%	0%	100%	0%
Vol Thru, %	0%	100%	100%	0%	0%	0%
Vol Right, %	0%	0%	0%	100%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	222	91	51	80	88	139
LT Vol	222	0	0	0	88	0
Through Vol	0	91	51	0	0	0
RT Vol	0	0	0	80	0	139
Lane Flow Rate	261	107	60	107	117	146
Geometry Grp	7	7	7	7	7	7
Degree of Util (X)	0.429	0.161	0.095	0.147	0.207	0.21
Departure Headway (Hd)	5.919	5.415	5.679	4.971	6.365	5.157
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	603	656	625	713	560	689
Service Time	3.701	3.196	3.474	2.766	4.15	2.941
HCM Lane V/C Ratio	0.433	0.163	0.096	0.15	0.209	0.212
HCM Control Delay	13.1	9.2	9.1	8.6	10.8	9.3
HCM Lane LOS	B	A	A	A	B	A
HCM 95th-tile Q	2.1	0.6	0.3	0.5	0.8	0.8

Intersection	
Intersection Delay, s/veh	5.3
Intersection LOS	A

Approach	EB	WB	SB
Entry Lanes	1	1	1
Conflicting Circle Lanes	1	1	1
Adj Approach Flow, veh/h	368	167	263
Demand Flow Rate, veh/h	375	170	268
Vehicles Circulating, veh/h	119	266	61
Vehicles Exiting, veh/h	210	228	375
Ped Vol Crossing Leg, #/h	0	0	0
Ped Cap Adj	1.000	1.000	1.000
Approach Delay, s/veh	5.9	5.0	4.6
Approach LOS	A	A	A

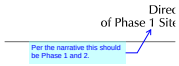
Lane	Left	Left	Left
Designated Moves	LT	TR	LR
Assumed Moves	LT	TR	LR
RT Channelized			
Lane Util	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976
Entry Flow, veh/h	375	170	268
Cap Entry Lane, veh/h	1222	1052	1297
Entry HV Adj Factor	0.981	0.981	0.981
Flow Entry, veh/h	368	167	263
Cap Entry, veh/h	1199	1032	1272
V/C Ratio	0.307	0.162	0.207
Control Delay, s/veh	5.9	5.0	4.6
LOS	A	A	A
95th %tile Queue, veh	1	1	1

Markup Summary

Daniel Torres (20)

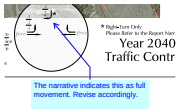
Subject: Text Box
Page Label: 1
Author: Daniel Torres
Date: 4/3/2019 2:36:07 PM
Color:

Add PCD File No. U192



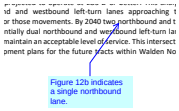
Subject: Callout
Page Label: 23
Author: Daniel Torres
Date: 4/3/2019 5:02:36 PM
Color:

Per the narrative this should be Phase 1 and 2.



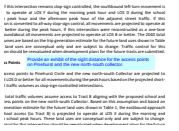
Subject: Callout
Page Label: 30
Author: Daniel Torres
Date: 4/3/2019 6:00:09 PM
Color:

The narrative indicates this as full movement. Revise accordingly.



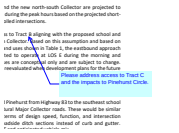
Subject: Callout
Page Label: 10
Author: Daniel Torres
Date: 4/3/2019 6:01:34 PM
Color:

Figure 12b indicates a single northbound lane.



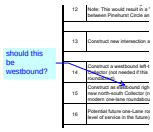
Subject: Text Box
Page Label: 9
Author: Daniel Torres
Date: 4/4/2019 2:30:17 PM
Color:

Provide an exhibit of the sight distance for the access points on Pinehurst and the new north-south collector.



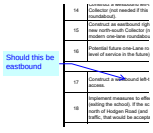
Subject: Callout
Page Label: 9
Author: Daniel Torres
Date: 4/4/2019 3:24:31 PM
Color:

Please address access to Tract C and the impacts to Pinehurst Circle.



Subject: Callout
Page Label: 15
Author: Daniel Torres
Date: 4/4/2019 3:54:38 PM
Color:

should this be westbound?

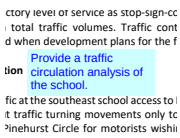


Subject: Callout
Page Label: 15
Author: Daniel Torres
Date: 4/4/2019 3:55:08 PM
Color:

Should this be eastbound

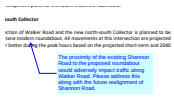
Subject: Callout
Page Label: 3
Author: Daniel Torres
Date: 4/4/2019 4:09:33 PM
Color:

It appears that the proposed roundabout encroaches onto the property to the north. Will the developer purchase this land to allow for this? Provide discussion on this. Additionally provide a complete roundabout analysis.



Subject: Text Box
Page Label: 11
Author: Daniel Torres
Date: 4/4/2019 4:44:39 PM
Color:

Provide a traffic circulation analysis of the school.

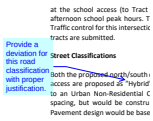


Subject: Callout
Page Label: 8
Author: Daniel Torres
Date: 4/4/2019 5:03:30 PM
Color:

The proximity of the existing Shannon Road to the proposed roundabout would adversely impact traffic along Walker Road. Please address this along with the future realignment of Shannon Road.

Subject: Text Box
Page Label: 9
Author: Daniel Torres
Date: 4/4/2019 5:09:58 PM
Color:

- List all deviations from the ECM that the applicant will be making.
- State whether the MTCP or other approved corridor study calls for the construction of improvements in the immediate area.
- If applicable list other studies in the area of interest within the past 5 years. State whether the current study is consistent with those studies and explain any discrepancies. If there are none then state as such.
- Provide a pedestrian/bicycle route analysis.
- State what the current applicable transportation impact fees are and what option will be selected for payment. If there are none or it is not applicable then state as such.



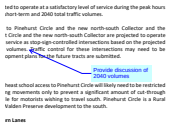
Subject: Callout
Page Label: 9
Author: Daniel Torres
Date: 4/4/2019 5:11:15 PM
Color:

Provide a deviation for this road classificationwith proper justification.

Subject: Callout
Page Label: 17
Author: Daniel Torres
Date: 4/4/2019 5:25:41 PM
Color:

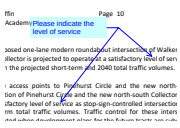
Provide a deviation for intersection spacing that does not meet ECM criteria

---



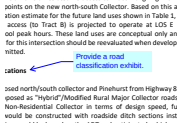
Subject: Callout
Page Label: 11
Author: Daniel Torres
Date: 4/4/2019 7:14:17 AM
Color:

Provide discussion of 2040 volumes



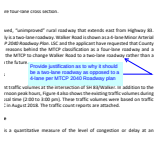
Subject: Callout
Page Label: 11
Author: Daniel Torres
Date: 4/4/2019 7:14:25 AM
Color:

Please indicate the level of service



Subject: Callout
Page Label: 9
Author: Daniel Torres
Date: 4/4/2019 8:57:31 AM
Color:

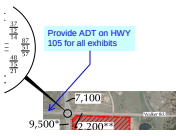
Provide a road classification exhibit.



Subject: Callout
Page Label: 4
Author: Daniel Torres
Date: 4/5/2019 11:15:52 AM
Color:

Provide justification as to why it should be a two-lane roadway as opposed to a 4-lane per MTCP 2040 Roadway plan

---



Subject: Callout
Page Label: 19
Author: Daniel Torres
Date: 4/5/2019 11:18:49 AM
Color:

Provide ADT on HWY 105 for all exhibits

Subject: Text Box
Page Label: 1
Author: Daniel Torres
Date: 4/5/2019 12:17:44 PM
Color:

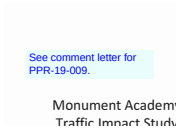
Initial comments have been made on this report for the approval of location application. The balance of comments will be provided with the site development plan application PPR19009.

---

dsdrice (2)

Subject: Text Box
Page Label: 1
Author: dsdrice
Date: 4/5/2019 10:16:18 AM
Color:

/PPR19009



Subject: Text Box
Page Label: 1
Author: dsdrice
Date: 4/5/2019 11:10:40 AM
Color:

See comment letter for PPR-19-009.