



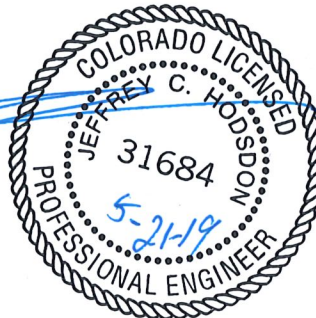
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The Ranch Sketch Plan
Master Traffic Impact Study
PCD File No.: SKP-18-006
(LSC #184390)
May 20, 2019

Traffic Engineer's Statement

See comment letter.

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.

A handwritten signature in blue ink, appearing to be 'H. L. L. v.p.', written over a horizontal line.

5/20/19
Date



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May 20, 2019

Loren J. Moreland
PRI #4 LLC
6385 Corporate Drive, Suite 200
Colorado Springs, CO 80919

RE: The Ranch Sketch Plan
El Paso County, Colorado
Traffic Impact Analysis
PCD File No.: SKP-18-213
LSC #184390

Dear Mr. Moreland,

In response to your request, LSC Transportation Consultants, Inc. has prepared this “master” traffic impact analysis for The Ranch Sketch Plan. As shown in Figure 1, the site is located northwest of the Meadows neighborhood, south of Old Stapleton Road, and east of Raygor Road in El Paso County, Colorado.

REPORT CONTENTS

This report is being prepared as part of a Sketch Plan submittal to El Paso County. It identifies the general traffic impacts associated with the proposed Sketch Plan. The report contains the following:

- The traffic count data and street conditions
- Projections of long-term (2040) background traffic volumes
- The projected average weekday and peak-hour vehicle-trips to be generated by the site
- The assignment of the site’s projected traffic volumes to the key area streets and intersections for the long term and the resulting total traffic volumes for the long term
- The resulting traffic impacts including level of service analysis at key intersections and average daily traffic volumes on key street sections in the vicinity of the site
- The anticipated lane geometry at the key area intersections
- The recommended functional classification for the streets within and in the vicinity of the site

PREVIOUS TRAFFIC REPORTS COMPLETED IN THE AREA

A list of other traffic studies in the area of study completed by LSC within the past five years is attached for reference. This study accounts for the land use, trip generation and the roadway network included in these studies.

LAND USE

The site is surrounded by existing residential developments on the north, south and east. The Sterling Ranch development is located one-quarter mile west of the site. Figure 2 shows the currently proposed sketch plan. The 610.5-acre site is planned to be developed with a maximum of 2,144 residential dwelling units, a one-acre neighborhood commercial parcel and a 10-acre elementary school.

The Ranch is planned to be developed starting with the parcels in the northeast corner and moving to the southwest. Initial access is planned via a new section of Briargate Parkway which will be constructed west from the intersection of Towner Avenue and Stapleton Drive. As the site develops to the south, Woodmen Hills Drive will be extended west from Towner Avenue to provide secondary access. Woodmen Hills Drive will eventually extend northwest through the site connecting to the intersection of Raygor and Stapleton Drive. An emergency only access is proposed to Falcon Meadows Boulevard.

Phasing of Access to the Development

It is intended that the development will be phased generally from the northeast corner to the southwest of the property. The initial phase will be served by Stapleton Drive, which will eventually become an extension of Briargate Parkway when connected to the west. In the interim, the plan is to construct the 4-lane, median-separated section of the future principal arterial as a temporary solution to provide the required two points of access. This is permitted in Section 8.4.4.(D)(2) of the Land Development Code. There is also an opportunity to utilize access through the adjacent Church property to Grace Church View to provide a temporary emergency access if required, which will also benefit the church property.

Future Traffic Studies/Impact Assessment

This report is intended as a “master” traffic study to accompany the sketch plan. This report addresses the long-term buildout of the development with planned area roadways shown on the MTCP for 2040. As development progresses, the capacity of the adjacent and connecting roads and the need for road improvements will be assessed by a more detailed traffic impact analyses for each phase of development.

PEDESTRIAN AND BICYCLE FACILITIES

A network of 73 acres of open space and trails is planned throughout the Sketch Plan area, primarily following the existing drainageways. In accordance with the County Parks Master Plan, a regional trail is shown running from the southeast corner of the property to the northern boundary. A 25-foot trail easement will be provided to the County with the final plats.

This master plan level study only identifies the major street connections within the development. Sidewalks and other pedestrian and bicycle facilities should be included on these internal roadways based on the El Paso County standard cross-section for the proposed classification of each roadway. Pedestrian and bicycle facilities should also be reevaluated and addressed with each applicable Preliminary Plan submittal. The section near the end of this report “Transitions from Rural to Urban Cross Sections” discusses the potential phasing of pedestrian/bicycle facilities.

ROADWAY AND TRAFFIC CONDITIONS

Area Roadways

The area roadways in the site’s vicinity are shown on Figure 1 and are described below.

- **Meridian Road** extends north from South Blaney Road to County Line Road. Meridian Road is shown as a four-lane Principal Arterial south of Rex Road, a four-lane Minor Arterial north of Rex Road, and a two-lane Minor Arterial north of Murphy Road on the *El Paso County Major Transportation Corridors Plan (MTCP)*.
- **Briargate Parkway** is a six-lane, Principal Arterial that extends east from I-25 to Grand Lawn Circle (about one-half mile east of Powers Boulevard). Briargate Parkway is planned to ultimately extend east to Stapleton Road. The County MTCP shows Briargate/Stapleton east of Black Forest Road as a four-lane Principal Arterial.
- **Stapleton Drive** currently extends east from just west of Towner Drive across US Highway 24 to the intersection of Judge Orr Road and Curtis Road. West of Meridian Road, Stapleton Drive is currently a two-lane roadway with a posted speed limit of 45 miles per hour (mph). Stapleton Drive is planned to be extended west from Towner Drive as Briargate Parkway with this development.
- **Woodmen Hills Drive** is a Collector roadway extending west from Eastonville Road and terminating at the site’s southeast corner. West of Meridian Road, Woodmen Hills Drive is a two-lane road with a rural cross section and a posted speed limit of 30 mph. Woodmen Hills Drive has an 80-foot right-of-way and is about 30-feet wide west of Meridian Road, except for the westernmost 2,200 feet, which is about 40-feet wide. Woodmen Hills Drive is proposed to be extended northwest through the site as an Urban Residential Collector to the extension of Briargate Parkway.

- **Raygor Road** is a two-lane Collector extending south from Burgess Road and terminating at the site's northwest corner. Raygor Road is planned to be extended southeast through the site as an Urban Residential Collector to the future intersection of Stapleton Drive and Woodmen Hills Drive.
- **Towner Avenue** is a 40-foot-wide Urban Residential Collector street (within Paint Brush Hills) that extends south from Londonderry Drive to just south of Woodmen Hills Drive. The posted speed limit is 35 mph.
- **Woodmen Road** is an east/west Expressway through the northern portion of the City of Colorado Springs and El Paso County.
- **Banning Lewis Parkway** is a planned north/south street through the Banning Lewis Ranch development on the east side of the City of Colorado Springs. North of Woodmen Road, Banning Lewis Parkway is classified as a four-lane Principal Arterial on the El Paso County MTCP.

Existing Traffic Volumes

Figure 3 shows the existing peak-hour traffic volumes and existing lane geometries and traffic controls at the intersections of Meridian/Woodmen Hills, Meridian/Stapleton and Towner/Stapleton and Woodmen/Meridian. The traffic volumes are based on counts by LSC in May 2018. The traffic count reports are attached.

Existing Level of Service

Level of service (LOS) is a quantitative measure of the level of 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 1 shows the level of service delay ranges.

| Table 1 Intersection Levels of Service Delay Ranges | | |
|---|--|---|
| Level of Service | Signalized Intersections | Unsignalized Intersections |
| | Average Control Delay (seconds per vehicle) | Average Control Delay (seconds per vehicle) ⁽¹⁾ |
| A | 10.0 sec or less | 10.0 sec or less |
| B | 10.1-20.0 sec | 10.1-15.0 sec |
| C | 20.1-35.0 sec | 15.1-25.0 sec |
| D | 35.1-55.0 sec | 25.1-35.0 sec |
| E | 55.1-80.0 sec | 35.1-50.0 sec |
| F | 80.1 sec or more | 50.1 sec or more |
| (1) For unsignalized intersections if V/C ratio is greater than 1.0 the level of service is LOS F regardless of the projected average control delay | | |

The intersections of Meridian/Woodmen, Meridian/Woodmen Hills, Meridian/Stapleton, Towner/Stapleton have been analyzed to determine the existing levels of service. The signalized intersections of Meridian/Woodmen, Meridian/Woodmen Hills and Meridian/Stapleton have been analyzed using Synchro. The intersection of Towner/Stapleton has been analyzed based on the unsignalized method of analysis procedures found in the Highway Capacity Manual, 6th Edition by the Transportation Research Board. The results of the analysis are shown in Figure 3. The level of service reports are attached.

All movements at the signalized intersections of Meridian/Woodmen Hills and Meridian/Stapleton are currently operating at LOS D or better during the peak hours based on the existing traffic volumes.

The intersection of Towner/Stapleton is currently operating at a satisfactory level of service for all movements as Stop-sign-controlled intersections.

BACKGROUND TRAFFIC

Figure 4 shows the projected background traffic volumes for the year 2040. These volumes assume Stapleton Drive has been extended west (as Briargate Parkway/Stapleton Drive) to connect with the existing section of Briargate Parkway. The 2040 background traffic volumes were based in part on previous work completed by LSC in the area, including work done for Meridian Ranch, Paint Brush Hills and Sterling Ranch.

TRIP GENERATION

Estimates of site-generated vehicle-trips are typically made using the nationally published trip generation rates from *Trip Generation, 10th Edition, 2017* by the Institute of Transportation Engineers (ITE). Table 2 shows the results of the trip generation estimates.

Table 2 includes an estimate of internal trips, which are trips beginning and ending within The Ranch. Internal trips reflect travel between the residential areas, the neighborhood commercial parcel and the elementary school at full buildout. Internal trips between the residential and non-residential land uses have been balanced.

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

As shown in Table 2, at buildout The Ranch could be expected to generate about 20,799 new external vehicle-trips on the average weekday, with about one-half entering and one-half 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 475 vehicles would enter and 1,236 vehicles would exit the site. During the afternoon peak hour, which generally occurs for one hour between 4:30 and 6:30 p.m., about 1,376 vehicles would enter and 815 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 a key factor in determining the site’s traffic impacts. Figure 5 shows external trip distribution estimates (external to The Ranch). The directional distribution estimate has been based on the location of the site with respect to the regional residential employment, commercial, and activity centers; the land use proposed; the access/roadway connections assumed; and the roadway network. The directional distribution estimate (long-term/2040 for purposes of the sketch plan report) assumes Briargate Parkway has been extended east of the Sketch Plan area, Banning Lewis Parkway completed (between Stapleton/Briargate and US Highway 24), and Woodmen Hills Drive has been extended northwest to Raygor Road (as buildout of the sketch plan is assumed). The internal trips have been assigned separately based on the location of the proposed neighborhood shopping center and school site.

When the external trip distribution percentages (from Figure 5) are applied to the trip generation estimates (from Table 2), the resulting site-generated traffic volumes can be determined. Figure 6 shows the buildout site-generated traffic volume estimate. The site-generated traffic volumes assume buildout of the maximum number of residential dwelling units as indicated on The Ranch Sketch Plan, a 10,000 square foot sit-down restaurant and an elementary school.

TOTAL TRAFFIC

Figure 7 shows the projected 2040 total traffic volumes. The 2040 total traffic volumes are the sum of the 2040 background traffic volumes (from Figure 4) plus the buildout site-generated traffic volumes from Figure 6.

PROJECTED LEVELS OF SERVICE

The key area intersections were analyzed to determine the projected levels of service for the 2040 background and total traffic volumes based on the unsignalized method of analysis procedures from the *Highway Capacity Manual, 6th Edition* by the Transportation Research Board and the Synchro signalized intersection procedures. Figures 4 and 7 show the level of service analysis results. The laneage and traffic control assumed in the analysis are depicted on the figures. The level of service reports are attached.

Meridian/Woodmen Hills

All movements at the signalized intersection of Meridian/Woodmen Hills are projected to operate at LOS D or better during the peak hours based on the projected 2040 total traffic volumes. This intersection should be reevaluated with each Preliminary Plan submittal to determine if any improvements would be required at each phase given the latest information/projections for short- and long-term timing of area road connections and/or upgrades at time of submittal of each Preliminary Plan.

Meridian/Stapleton Drive

By 2040 it was assumed that the intersection of Meridian/Stapleton would be improved to provide two eastbound and westbound through lanes and dual northbound, eastbound and westbound left-turn lanes. Based on the 2040 total traffic volumes and the lane geometry shown in Figure 7 the intersection of Meridian/Stapleton is projected to operate at an overall LOS D or better during the peak hours. The eastbound and northbound left-turn movements are projected to operate at LOS E during the morning peak hour. These movements have projected delays in the LOS E range simply because they arrive at the traffic signal at the beginning of the red phase at an intersection with many phases and a long cycle length. These movements would not be considered “failing” since their volume-to-capacity ratios are less than one. The justification is that to progress through traffic along an arterial corridor, the traffic signal offsets and left-turn phase times have been adjusted to favor the through band, which can result in higher delay for the left-turn movements

even though there is sufficient capacity for them. This intersection is likely to be evaluated in the short-term as part of the PPRTA planning and design process for this roadway corridor (PPRTA "A-List" project).

Towner/Stapleton/Briargate

The intersection of Towner/Stapleton is currently an all-way stop sign-controlled T-intersection. This intersection should be reevaluated with each Preliminary Plan submittal to determine if traffic signal warrant(s) will be met. It was assumed by 2040 that this intersection would be signal controlled. As a signalized intersection all movements are projected to operate at LOS D or better during the peak hours.

Briargate/Stapleton/Raygor/Woodmen Hills

The future intersection of Briargate/Raygor/Woodmen Hills is planned to be constructed as a two-lane modern roundabout. As a two-lane modern roundabout, all of the movements at this intersection are projected to operate at D or better during the peak hours based on the projected 2040 total traffic volumes.

Briargate/Stapleton/Banning Lewis

Based on the 2040 total traffic volumes and the lane geometry shown in Figure 7, the future intersection of Briargate/Stapleton/Banning Lewis is projected to operate at an overall LOS D or better during the peak hours, however some of the minor movements are projected to operate at LOS E during the peak hours and the northbound left-turn movement is projected to operate at LOS F during the afternoon peak hour. This analysis has been based on a conventional, signalized intersection configuration as shown in the schematic laneage in Figure 7 with dual left-turn lanes on all approaches. The 2040 total traffic volumes shown at this intersection are based on previous work completed by LSC in the area, including the Sterling Ranch Master Plan. However, this is a planned regional intersection and the projected volumes and the intersection design/laneage will likely be reevaluated as part of the Pikes Peak Rural Transportation Authority (PPRTA) "A" Group Project. LSC anticipates that the intersection will be designed as part of this PPRTA project to achieve levels of service that meet County standards.

Stapleton/ Residential Collector

An Urban Residential Collector is proposed to be constructed forming a loop on the south side of Stapleton Drive from just east of Woodmen Hills Drive to just west of Towner Avenue. The west intersection is planned to be constructed as a modern two-lane roundabout. As a two-lane modern roundabout all of the movements at this intersection are projected to operate at LOS D or better during the peak hours based on the projected 2040 total traffic volumes.

Two traffic control options were considered for the east intersection. The preferred option is for the east intersection to be constructed as a modern two-lane roundabout. As a modern two-lane roundabout all approaches at this intersection are projected to operate at LOS B or better during the peak hours based on the projected 2040 total traffic volumes. The second option is to construct this intersection as a standard four-leg intersection. If this option is selected the intersection should be reevaluated with each Preliminary Plan submittal to determine if traffic signal warrant(s) will be met. It was assumed by 2040 that this intersection would be signal controlled if it is constructed as a standard four-leg intersection. As a signalized intersection all movements are projected to operate at LOS D or better during the peak hours.

Woodmen Hills/Residential Collector

The intersection of Woodmen Hills Drive and the proposed Residential Collector loop is planned to be constructed as a modern two-lane roundabout. All movements at this intersection are projected to operate at LOS D or better during the peak hours based on the projected 2040 total traffic volumes.

CONCLUSIONS AND RECOMMENDATIONS

Trip Generation

The Ranch could be expected to generate about 20,799 new external vehicle-trips on the average weekday, with about one-half entering and one-half exiting in a 24-hour period. During the morning peak hour about 475 vehicles would enter and 1,236 vehicles would exit the site. During the afternoon peak hour about 1,376 vehicles would enter and 815 vehicles would exit the site.

Street Classification

Figure 8 shows the recommended street classifications for the streets in the vicinity of the site based on the projected 2040 traffic volumes shown in Figure 7.

Transitions from Rural to Urban Cross Sections

Stapleton Drive – Meridian Road to the project (just west of Towner)

Stapleton Drive is shown as a Four-lane Principal Arterial on the MTCP. An “urban”-type Principal Arterial would be most logical as Stapleton will be urban to the east and is planned to be “urban” through The Ranch. The current roadway west of Meridian is primarily a paved, “unimproved” roadway. This section of Stapleton is likely to be evaluated in the short-term as part of the PPRTA planning and design process for this roadway corridor (PPRTA "A-List" project). The upgrade from an “unimproved” roadway to the Urban, Four-Lane Principal Arterial cross section could likely be phased by constructing a “half-section” of the full Four-Lane Principal Arterial. A sidewalk could potentially be added on the “finished” side of the roadway. Note: The vacant 160-acre parcel

southwest of Meridian/Stapleton (owner: State of Colorado) has a one-half-mile frontage on Stapleton Road. The status of this parcel may factor into the phasing and timing of Stapleton upgrades.

Woodmen Hills Drive – Meridian Road to the project (just west of Towner)

Woodmen Hills Drive is a Collector on the MTCP. It currently has a rural cross section with varying widths. The right-of-way is 80-feet. There is a drainage channel on the north side of the roadway. The section west of Meridian Road passes through Woodmen Hills Filing No. 1, with generally half-acre lots, and The Meadows Filing 3 with generally five-acre lots. Woodmen Hills Drive east of Meridian has curb and gutter and sidewalk on the south side of the roadway through some locations.

Given the existing and planned continuity of Woodmen Hills Drive and associated additional background traffic plus site-generated traffic, upgrades to the current rural cross section will likely be needed. These will likely include:

- Additional pavement width, where feasible, in locations where pavement is less than the ECM standard width – generally between Meridian Road and 750 feet west of Theriot Road.
- The addition of a sidewalk or trail on the south side of the roadway between Meridian Road and the site.

The timing and phasing details should be determined with the Preliminary Plan(s).

Improvements

A general, preliminary summary of potentially-needed transportation improvements in the area due to the sketch plan, background traffic or a combination is shown in Table 3. This table includes improvements called for on the MTCP and anticipated responsibility for each improvement.

A traffic study should be completed at each development phase of The Ranch to determine the specific roadway improvements necessary to accommodate the proposed number of lots, based on the traffic conditions at the time of submittal and based on the latest information/projections for short- and long-term timing of area road connections and/or upgrades as well as other prevailing conditions (such as other new developments, etc.).

The need for and timing of improvement of the existing two-lane section of Stapleton Drive to a half or full Principal Arterial cross section (likely to be addressed as part of the PPRTA planning and design process for this roadway corridor (PPRTA "A-List" project), phasing of Woodmen Hills Drive improvement/upgrades (Meridian to the site), and the timing of the extension of Woodmen Hills Drive east of Towner Avenue should also be addressed with each applicable Preliminary Plan submittal.

west?

El Paso County Roadway Improvement Fee Program

This project will be required to participate in the El Paso County Road Impact Fee Program.

Deviations to the El Paso County Engineering Criteria Manual

- **Intersection Spacing Deviation:** The proposed spacing of intersections on Briargate Parkway will require a deviation to the criteria contained in the El Paso County Engineering Criteria Manual. A deviation request was previously submitted and reviewed and an updated deviation will be included with the current submittal.
- **Future Deviation Submittal:** The required right-of-way for a Principal 4-lane Principal Arterial is 130 feet, but the Sketch Plan shows a 150 feet right-of-way to allow for a wider central median and roundabouts at major intersections to create an attractive landscaped entrance and route through the community. A deviation for this alternative cross-section will be processed with subsequent Preliminary Plans, as more detailed design is needed to evaluate and justify the wider median.

Stapleton/



Future Traffic Studies/Impact Assessment

This report is intended as a “master” traffic study to accompany the sketch plan. This report addresses the long-term buildout of the development with planned area roadways shown on the MTCP for 2040. As development progresses, the capacity of the adjacent and connecting roads and the need for road improvements will be assessed by more detailed traffic impact analyses for each phase of development.

* * * * *

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

Sincerely,

LSC TRANSPORTATION CONSULTANTS, INC.

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

JCH:KDF/jas/bjwb

Enclosures: Tables 2-3
Figures 1-8
Appendix Table 1
Traffic Count Reports
Level of Service Reports

Table 2
Trip Generation Estimate
The Ranch

| Land Use Code | Land Use Description | Trip Generation Units | Trip Generation Rates ⁽¹⁾ | | | | | Total Trips Generated | | | | | Daily Internal Trips ⁽²⁾ | Total "External" Trips Generated | | | | | Pass-by Trips ⁽³⁾ | Average Weekday Traffic |
|---|-------------------------------------|-------------------------|--------------------------------------|-------------------|------|---------------------|------|-------------------------|-------------------|-------|---------------------|-----|-------------------------------------|----------------------------------|-------------------|-------|---------------------|-----|------------------------------|-------------------------|
| | | | Average Weekday Traffic | Morning Peak Hour | | Afternoon Peak Hour | | Average Weekday Traffic | Morning Peak Hour | | Afternoon Peak Hour | | | Average Weekday Traffic | Morning Peak Hour | | Afternoon Peak Hour | | | |
| | | | | In | Out | In | Out | | In | Out | In | Out | | | In | Out | In | Out | | |
| 210 | Single-Family Detached Housing | 2,144 DU ⁽⁴⁾ | 9.44 | 0.19 | 0.56 | 0.62 | 0.37 | 20,239 | 397 | 1,190 | 1,337 | 785 | 5.1% | 19,766 | 358 | 1,099 | 1,315 | 775 | 0% | 19,766 |
| 520 | Elementary School | 500 Students | 1.89 | 0.36 | 0.31 | 0.08 | 0.09 | 945 | 181 | 154 | 41 | 44 | 50% | 472 | 90 | 115 | 31 | 22 | 0% | 472 |
| 932 | High-Turnover (Sit-Down) Restaurant | 10 KSF ⁽⁵⁾ | 112.18 | 5.47 | 4.47 | 6.06 | 3.71 | 1,122 | 55 | 45 | 61 | 37 | 50% | 561 | 27 | 22 | 30 | 18 | 43% | 561 |
| | | | | | | | | 22,306 | 633 | 1,389 | 1,439 | 866 | | 20,799 | 475 | 1,236 | 1,376 | 815 | | 20,799 |
| Notes: | | | | | | | | | | | | | | | | | | | | |
| (1) Source: "Trip Generation, 10th Edition, 2017" by the Institute of Transportation Engineers (ITE) | | | | | | | | | | | | | | | | | | | | |
| (2) The residential internal trips have been balanced with the estimated internal school trips | | | | | | | | | | | | | | | | | | | | |
| (3) Source: "Trip Generation Handbook - An ITE Proposed Recommended Practice, 3rd Edition, 2017" by ITE | | | | | | | | | | | | | | | | | | | | |
| (4) DU = dwelling unit | | | | | | | | | | | | | | | | | | | | |
| (5) KSF = thousand square feet | | | | | | | | | | | | | | | | | | | | |
| Source: LSC Transportation Consultants, Inc. | | | | | | | | | | | | | | | | | | | | |

verify 3 acres vs. 1 acre;
33 ksf?

alignment needs to be approved by the Road Fee committee for reimbursement

This segment is not currently on the list of projects.

| Table 3 Roadway Improvements The Ranch | | |
|---|--|---|
| Improvement | Timing | Responsibility ⁽¹⁾ |
| To be completed by the Applicant | | |
| Briargate Parkway/Stapleton Drive (Towner Avenue to the west boundary of The Ranch Sketch Plan area): Construct as a half section or full-section four-lane Principal Arterial. | To be evaluated with each Preliminary Plan submittal. | To be constructed by the applicant, with credit/reimbursement (per fee program provisions) from El Paso County through funds from the Countywide Roadway Improvement Fee Program |
| Woodmen Hills (Meridian Road to 750 feet west of Theriot Road): Upgrade to a Rural Major Collector roadway (within the existing 80-foot right of way and considering the width constraint due to the existing box culvert just west of Meridian Road); add sidewalk or trail on the south side of the roadway. | Once this project adds significant traffic to this segment of roadway; To be evaluated with each Preliminary Plan submittal. | To be constructed by the applicant, with credit/reimbursement (per fee program provisions) from El Paso County through funds from the Countywide Roadway Improvement Fee Program |
| Woodmen Hills (750 feet west of Theriot Road to Towner Avenue): Add sidewalk or trail on the south side of the roadway. | Once the sidewalk/trail is completed on the Meridian Road to Garrison Road section. | Applicant |
| Woodmen Hills (Towner Avenue to the property boundary): Construct Rural Major Collector roadway such that just west of Towner the roadway width matches the width on the east side of Towner. West of the intersection, transition the cross section to tie in with the proposed Urban Collector section to be constructed on The Ranch property; Add sidewalk or trail on the south side of the roadway. | With the phase of The Ranch which adds the road connection to existing Woodmen Hills Drive. | To be constructed by the applicant, with credit/reimbursement (per fee program provisions) from El Paso County through funds from the Countywide Roadway Improvement Fee Program |
| Woodmen Hills Drive (West property boundary to the future extension of Briargate Parkway/Stapleton Drive): Construct as a two-lane Urban Residential Collector. | To be evaluated with each Preliminary Plan submittal. | To be constructed by the applicant, with credit/reimbursement (per fee program provisions) from El Paso County through funds from the Countywide Roadway Improvement Fee Program |
| Raygor Road (Old Stapleton Drive to the future extension of Briargate Parkway/Stapleton Drive): Construct as a two-lane Urban Residential Collector | To be evaluated with each Preliminary Plan submittal. | Applicant |
| Construct the intersection of Briargate(Stapleton)/Raygor/Woodmen Hills as a modern two-lane roundabout. | To be evaluated with each Preliminary Plan submittal. | To be constructed by the applicant, with intersection improvement credit/reimbursement (per fee program provisions) from El Paso County through funds from the Countywide Roadway Improvement Fee Program |
| Construct a two-lane modern roundabout intersection on Briargate Parkway/Stapleton Drive west of Woodmen Hills/Raygor | To be evaluated with each Preliminary Plan submittal. | Applicant |
| Construct the east intersection of the proposed Urban Residential Collector loop & Briargate Parkway/Stapleton as a modern roundabout (or signalize the intersection) | The roundabout option is preferred by the applicant. However, if the signalization option is selected, signalize once warrants are met. This should be evaluated with each Preliminary Plan submittal. The decision on timing of traffic signal installation rests with El Paso County Public Works. | Applicant |
| Other Area Roadway Improvements (for Reference) | | |
| Stapleton Drive (Meridian Road to Towner Avenue): Upgrade the existing "unimproved" roadway to a four-lane Urban Principal Arterial from Meridian Road to Towner Avenue. This roadway upgrade could potentially be phased by initially constructing a one-half section of ultimate four-lane Urban Principal Arterial. | Potential timing/trigger for half-section: Once the ADT on this segment of roadway exceeds 7,000 vehicles per day. Potential timing/trigger for full four-lane cross section: Once the ADT on this segment of roadway exceeds the capacity of a half section (if upgrade is phased and an interim half section is constructed first) estimated to be about 15,000 -20,000 ADT depending on the design of the half section and other capacity considerations. | El Paso County (PPRTA and/or County Road Improvement Fee Program/PID) |
| Briargate Parkway/Stapleton Drive from the west boundary of The Ranch Sketch Plan area to Black Forest Road. | Likely to be determined by the PPRTA planning and design process for this roadway corridor (PPRTA "A-List" project) | El Paso County (PPRTA and/or County Road Improvement Fee Program/PID) and developments to the west per applicable development agreements. |
| Briargate Parkway/Stapleton & Towner Intersection: Signalize the intersection (or construct as a modern roundabout intersection). | Once warrants are met. However, the decision on timing of traffic signal installation rests with El Paso County Public Works. | El Paso County through funds from the Countywide Roadway Improvement Fee Program |
| Notes: (1) Preliminary concept of responsibility; the actual construction or participation responsibility would be determined through development agreements and/or subdivision improvement agreements. (2) PPRTA = Pikes Peak Rural Transportation Authority. | | |
| Source: LSC Transportation Consultants, Inc. (Rev. 5/29/2019) | | |

Replace the first four intersection improvements items from the previous submittal.

| |
|--|
| Woodmen Hills Drive/Meridian Road- Upgrade the west leg of the intersection for additional eastbound lanes and to match the east side; any other necessary auxiliary turn lane improvements; signal modifications. |
| Stapleton/Meridian: Auxiliary turn lane improvements (ultimately right turn lanes and dual northbound, eastbound and westbound left-turn lanes); Two eastbound and westbound through lanes (ultimately); and any needed traffic signal modifications |
| Stapleton/Towner: Construct additional auxiliary turn lanes as needed to accommodate turning movements from this development |
| Meridian/Woodmen: Lengthen Eastbound Dual Left Turn Lanes or fair-share contribution toward a lengthening project. |

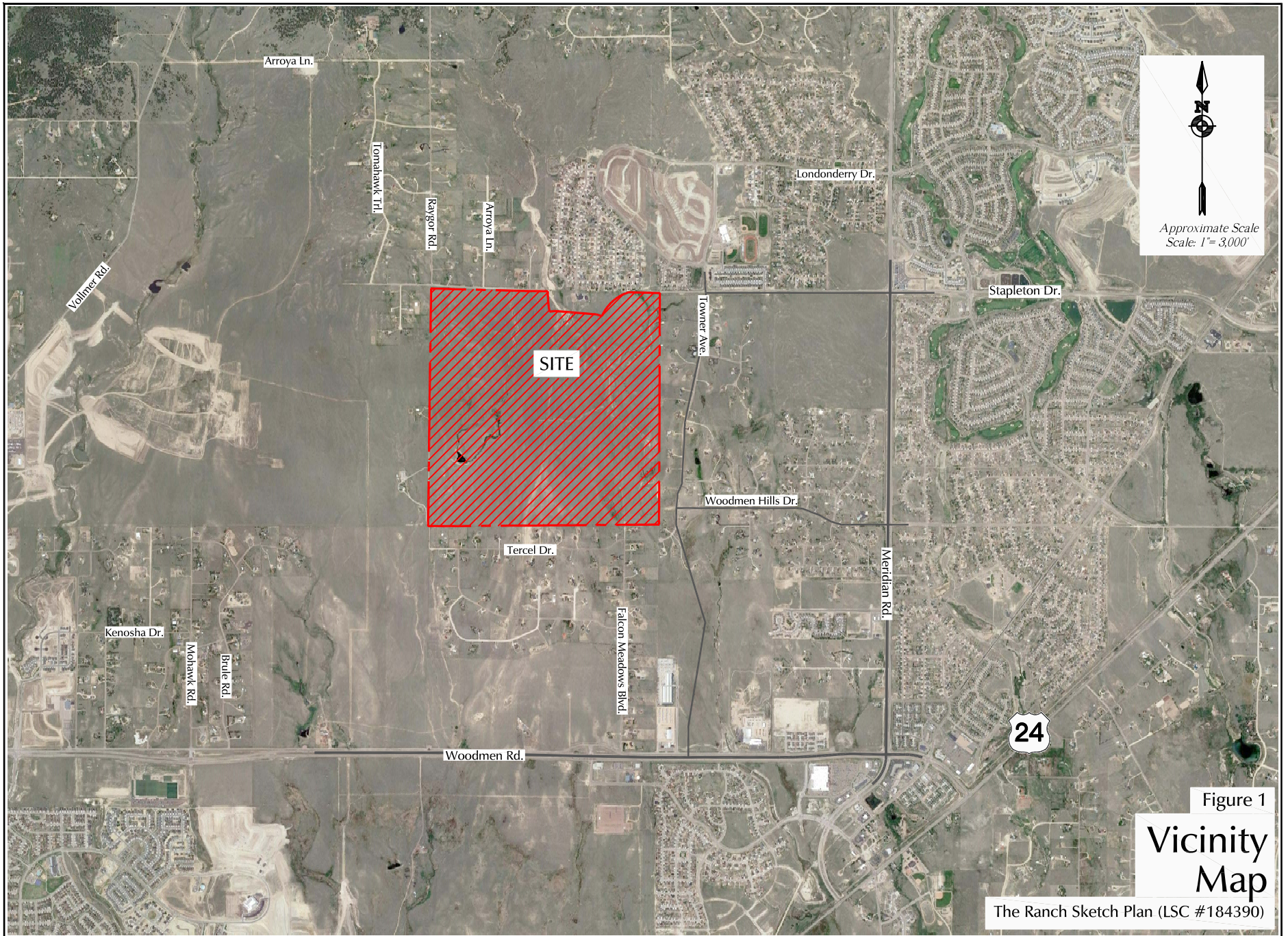
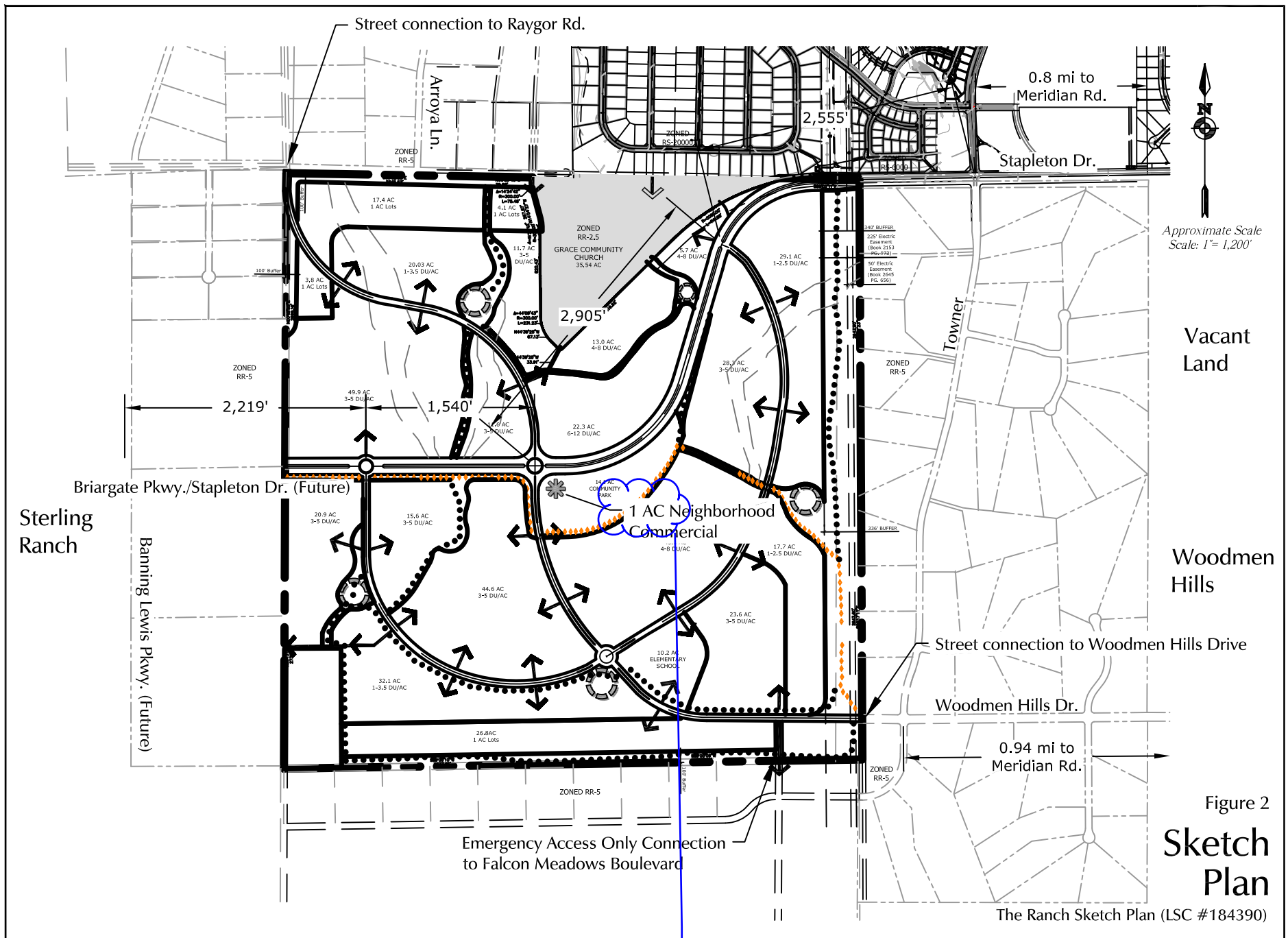


Figure 1

Vicinity Map

The Ranch Sketch Plan (LSC #184390)



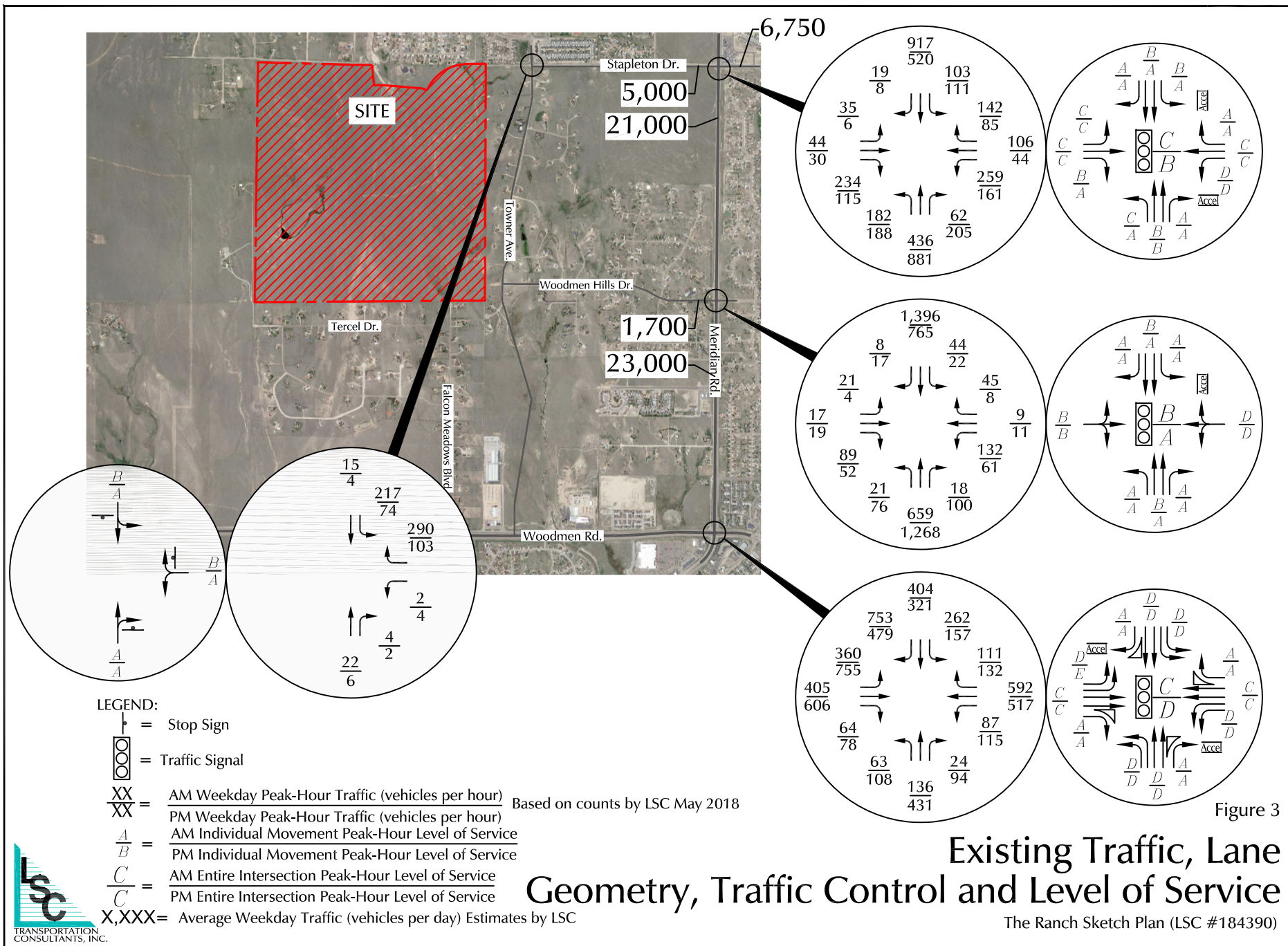
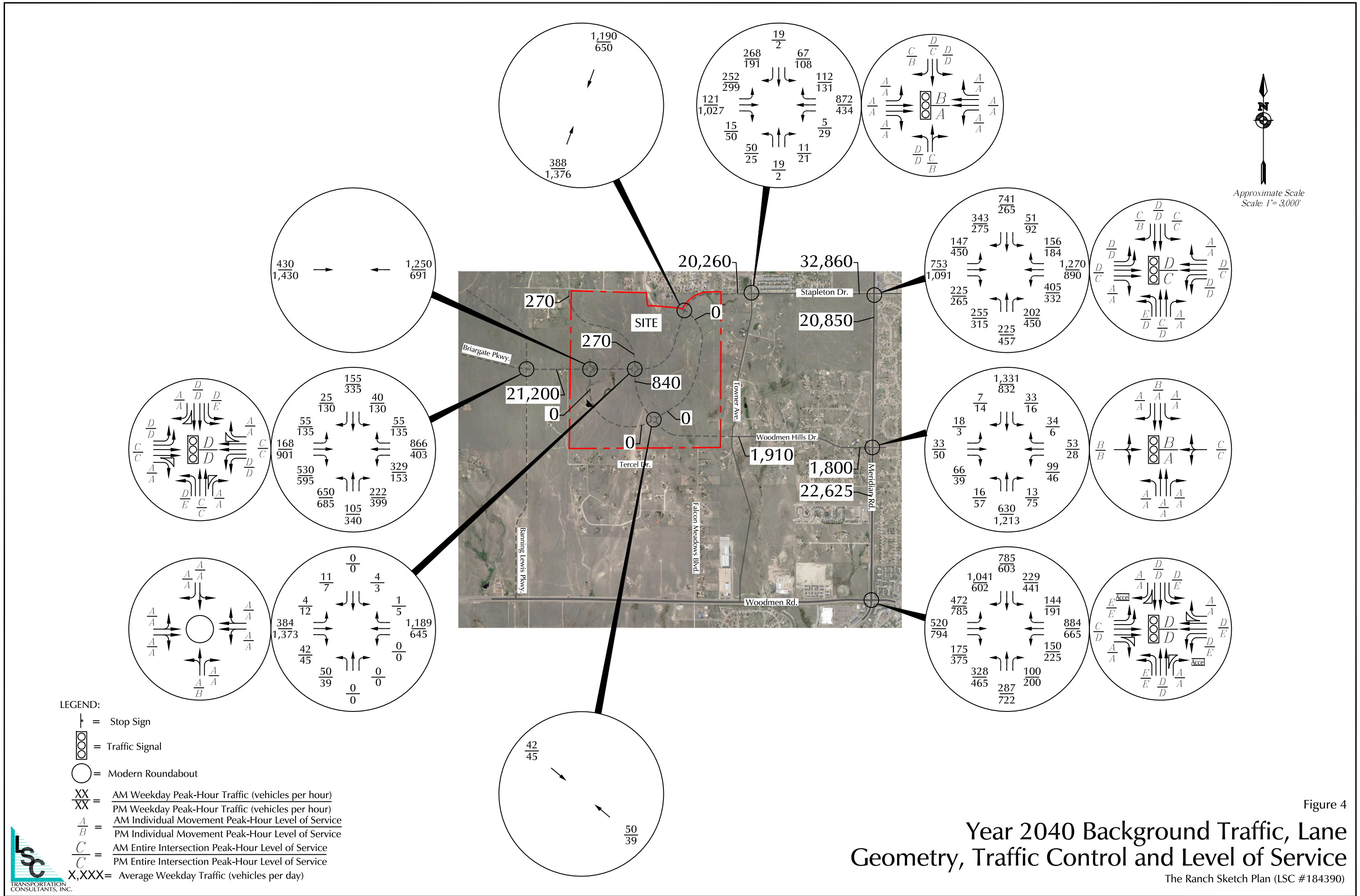
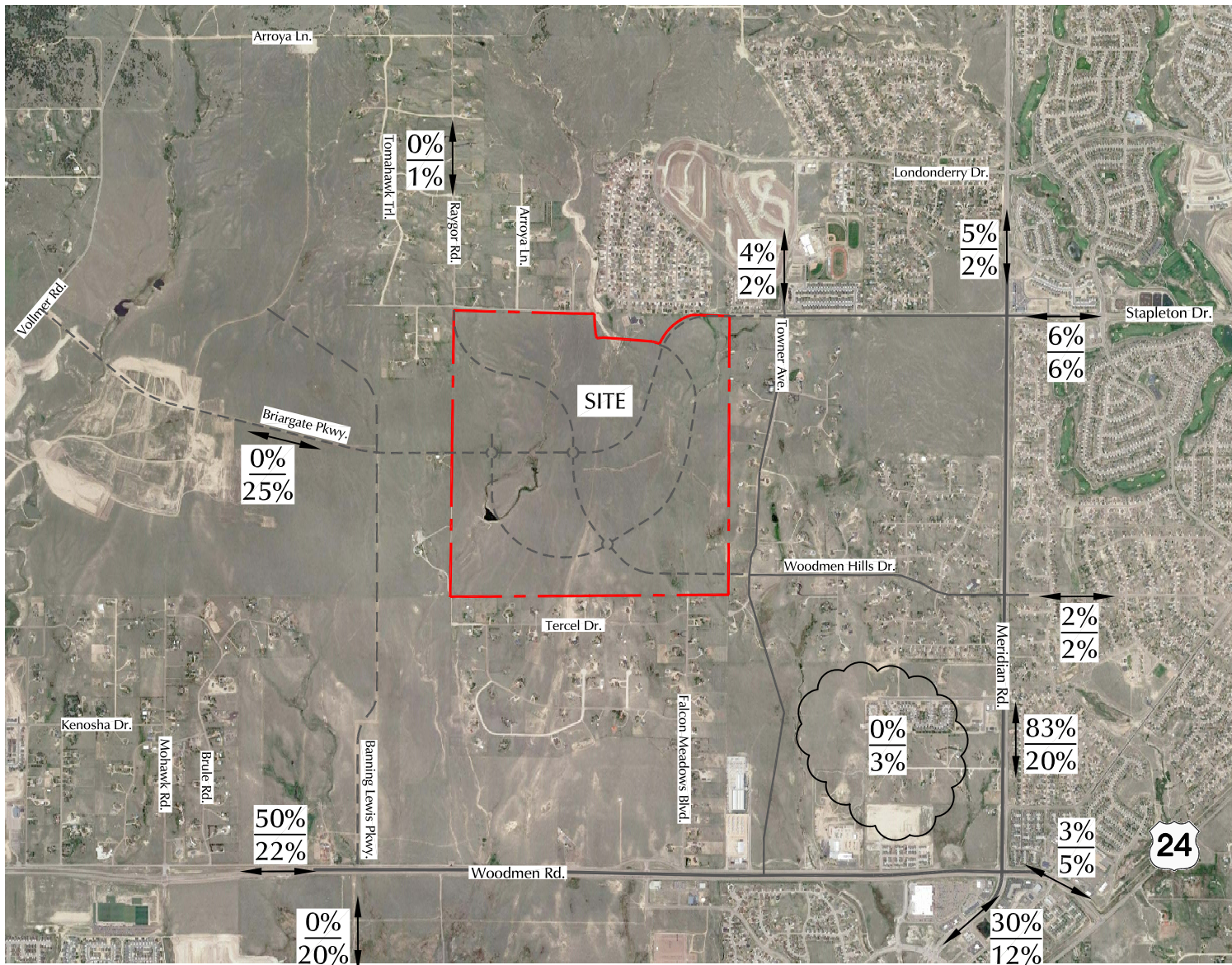


Figure 3

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

The Ranch Sketch Plan (LSC #184390)





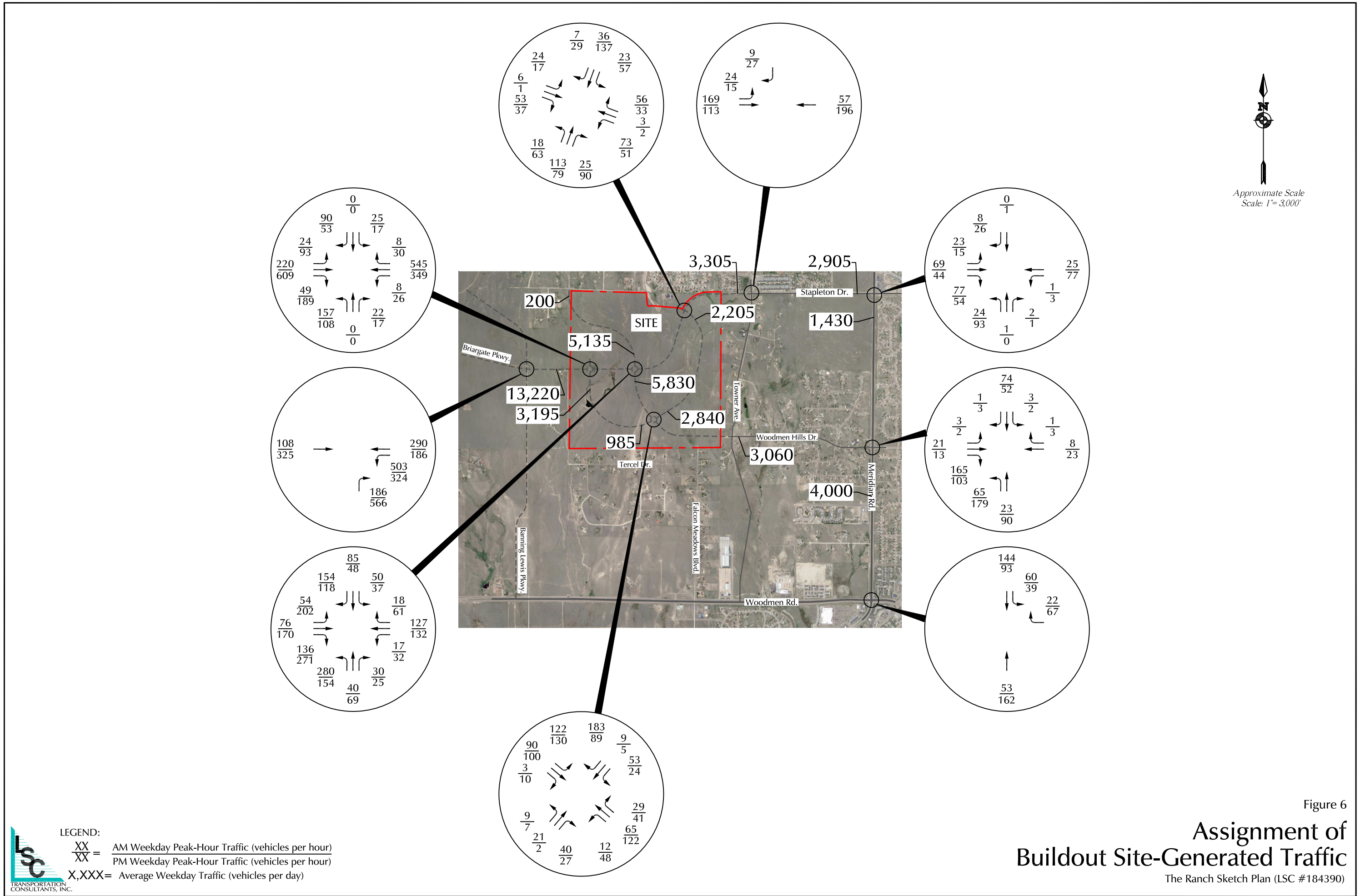
LEGEND:

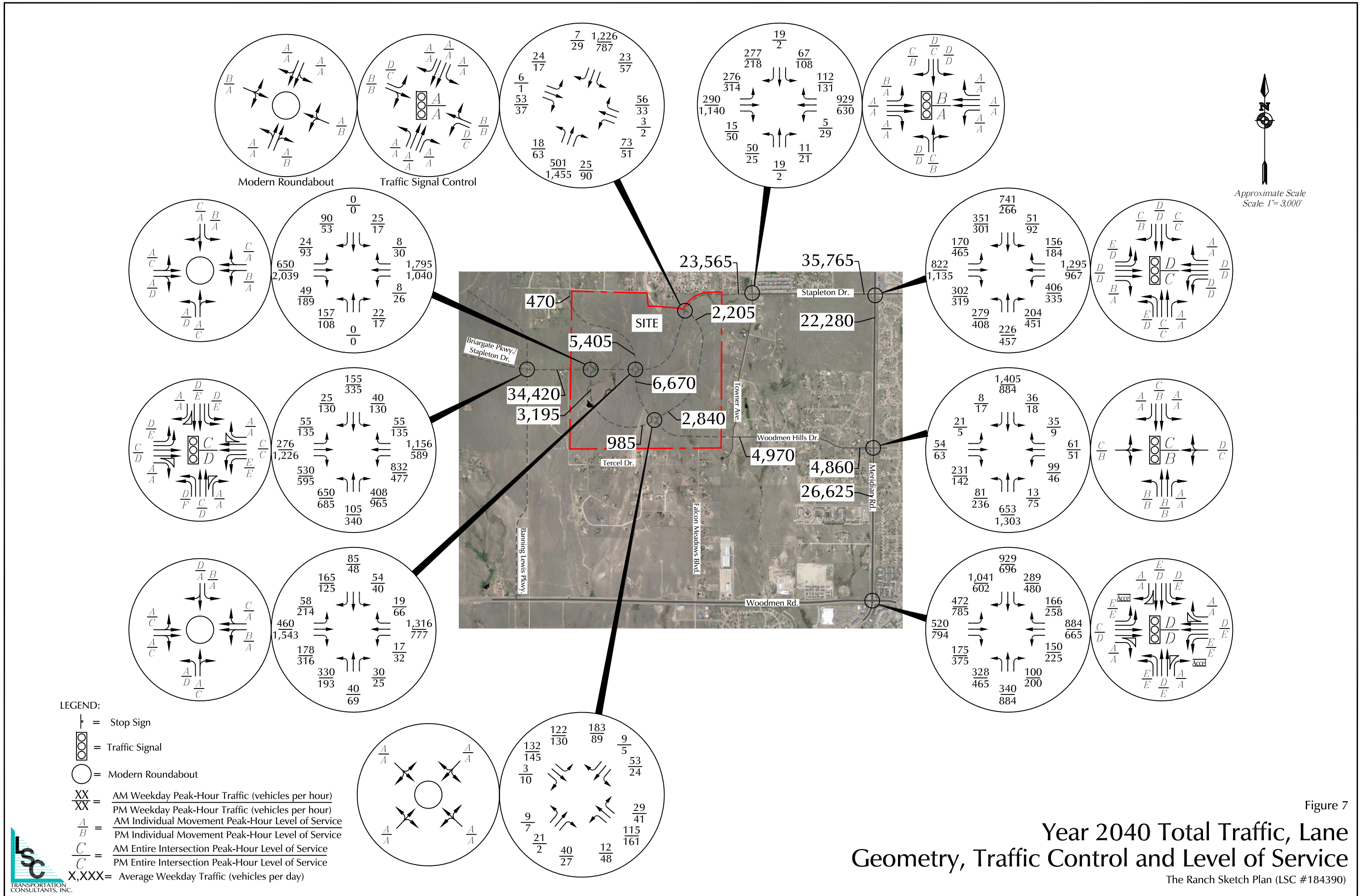
$\frac{\text{Short-Term Percent Directional Distribution}}{\text{Long-Term Percent Directional Distribution}}$

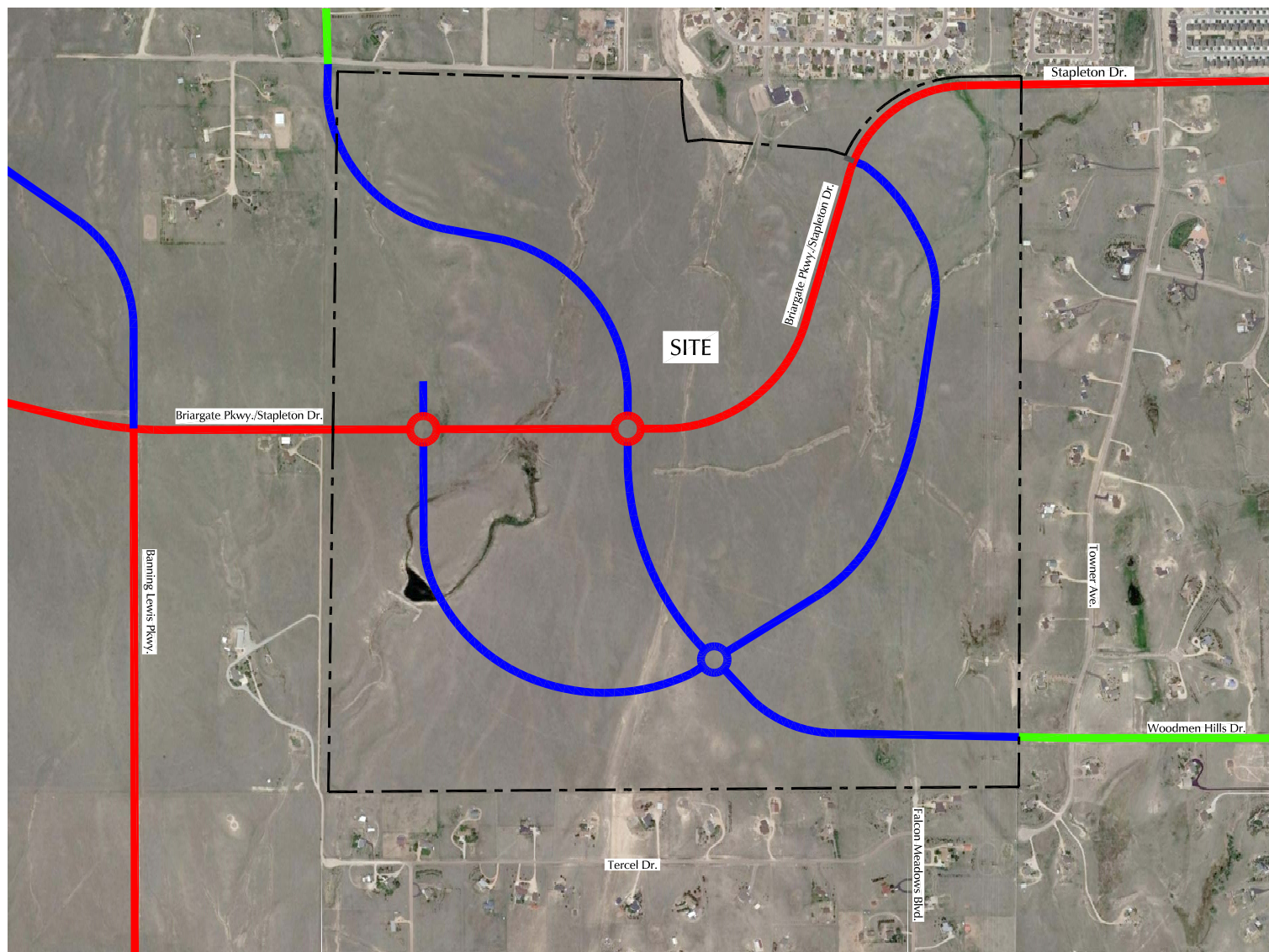
Directional Distribution of Site-Generated Traffic

The Ranch Sketch Plan (LSC #184390)

Figure 5







LEGEND:

- = 4-Lane Urban Principal Arterial
- = Urban Residential Collector
- = Rural Collector

Recommended Street Classification

The Ranch Sketch Plan (LSC #184390)

Figure 8

Appendix Table 1
Area Traffic Impact Studies by LSC
The Ranch

| Study | Date |
|--|--------------------|
| Falcon Hills | |
| Falcon Hills Traffic Impact Study | April 8, 2004 |
| Paint Brush Hills Filing 13A | May 14, 2014 |
| Paint Brush Hills Filing 13B | March 26, 2014 |
| Scenic View at Paint Brush Hills | April 7, 2014 |
| Paint Brush Hills Filings 13C-13F | September 25, 2014 |
| Paint Brush Hills Filings 13C and 13D | January 9, 2017 |
| D-49 Elementary School | May 30, 2017 |
| Paint Brush Hills Filing 13E | October 18, 2018 |
| Meridian Ranch | |
| Meridian Ranch Sketch Plan TIA | April 11, 2011 |
| Meridian Ranch Filing 11 Updated TIA | November 26, 2013 |
| Stonebridge at Meridian Ranch Filing No. 1 Updated TIA | April 23, 2014 |
| Stonebridge at Meridian Ranch Transportation Memorandum | July 28, 2015 |
| Meridian Ranch Filing 8 Updated TIA | December 23, 2014 |
| Meridian Ranch Filing 9 Updated TIA | May 21, 2015 |
| Meridian Ranch Sketch Plan 2015 Amendment TIA | July 30, 2015 |
| The Vistas at Meridian Ranch TIA | March 24, 2016 |
| The Vistas at Meridian Ranch Updated Transportation Memorandum | June 20, 2017 |
| Londonderry Drive Pedestrian Operations and Safety Study | February 8, 2017 |
| Stonebridge Filing 3 at Meridian Ranch Updated TIA | March 20, 2017 |
| Meridian Ranch Sketch Plan 2017 Amendment TIA | October 3, 2017 |
| WindingWalk at Meridian Ranch and The Enclave at Stonebridge at Meridian Ranch Updated Traffic Impact Analysis | May 10, 2018 |
| Waterbury/4-Way Ranch | |
| Waterbury PUD Development Plan Updated TIA | January 10, 2013 |
| Waterbury Preliminary Plan No. 1 Updated TIA | June 5, 2013 |
| Waterbury Phase 2 Preliminary Plan | August 3, 2017 |
| Waterbury Phase 1 Filing Nos. 2 and 3 | October 16, 2017 |
| Grandview Reserve Traffic Impact Analysis | January 11, 2019 |
| Bent Grass | |
| Bent Grass Subdivision PUD Traffic Impact Analysis | October 6, 2006 |
| Bent Grass East Commercial – Preliminary Plan | January 25, 2013 |
| Bent Grass East Commercial – Report Supplement #2 | March 14, 2013 |
| Bent Grass Subdivision Filing 1 Updated Traffic Impact Analysis | July 14, 2014 |
| Bent Grass East Commercial Filing No. 2 Updated Traffic Impact Analysis | July 17, 2014 |
| Falcon Dental East Commercial Filing No. 2A | March 7, 2016 |
| Bent Grass Meadows Drive/Meridian Road Traffic Signal Warrant Analysis | October 2, 2017 |
| Bent Grass East Commercial/Bent Grass Meadows Drive & Meridian Road Transportation Memorandum | March 21, 2019 |
| Sterling Ranch | |
| Sterling Ranch Updated Traffic Impact Analysis | June 5, 2008 |
| Sterling Ranch Phase 1 Updated Traffic Impact Analysis | March 16, 2015 |
| Sterling Ranch Phase 1-3 Traffic Technical Memoandum | October 2, 2017 |
| Branding Iron at Sterling Ranch Filing No. 1 and Homestead at Sterling Ranch Filing No. 1 | December 19, 2017 |
| Sterling Ranch Filing No. 2 | April 3, 2018 |
| Copper Chase at Sterling Ranch | December 20, 2018 |
| Sterling Ranch Phase 2 Preliminary Plan | December 20, 2018 |
| Homestead at Sterling Ranch Filing No. 2 | March 1, 2019 |
| Branding Iron at Sterling Ranch Filing No. 2 Transportation Memorandum | April 5, 2019 |
| Others | |
| Falcon Marketplace Traffic Impact Analysis | September 5, 2018 |
| <i>Source: LSC Transportation Consultants, Inc.</i> | |

LSC Transportation Consultants, Inc.

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719-633-2868

File Name : Meridian Rd - Stapleton Dr AM

Site Code : 184390

Start Date : 05/02/2018

Page No : 1

Groups Printed- Unshifted

| | Meridian Rd Southbound | | | | | Stapleton Dr Westbound | | | | | Meridian Rd Northbound | | | | | Stapleton Dr Eastbound | | | | | |
|------------|---------------------------|------|-------|------|------------|---------------------------|------|-------|------|------------|---------------------------|------|-------|------|------------|---------------------------|------|-------|------|------------|------------|
| Start Time | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Int. Total |
| 06:30 | 30 | 174 | 2 | 0 | 206 | 39 | 1 | 21 | 0 | 61 | 24 | 50 | 5 | 0 | 79 | 2 | 6 | 41 | 0 | 49 | 395 |
| 06:45 | 24 | 178 | 1 | 0 | 203 | 59 | 5 | 15 | 0 | 79 | 32 | 93 | 10 | 0 | 135 | 3 | 6 | 28 | 0 | 37 | 454 |
| Total | 54 | 352 | 3 | 0 | 409 | 98 | 6 | 36 | 0 | 140 | 56 | 143 | 15 | 0 | 214 | 5 | 12 | 69 | 0 | 86 | 849 |
| 07:00 | 14 | 227 | 2 | 0 | 243 | 96 | 15 | 30 | 0 | 141 | 38 | 89 | 16 | 0 | 143 | 6 | 10 | 51 | 0 | 67 | 594 |
| 07:15 | 19 | 206 | 9 | 0 | 234 | 72 | 38 | 35 | 0 | 145 | 67 | 101 | 14 | 0 | 182 | 14 | 15 | 73 | 0 | 102 | 663 |
| 07:30 | 33 | 263 | 7 | 0 | 303 | 54 | 46 | 48 | 0 | 148 | 56 | 121 | 16 | 0 | 193 | 10 | 10 | 58 | 0 | 78 | 722 |
| 07:45 | 37 | 221 | 1 | 0 | 259 | 37 | 7 | 29 | 0 | 73 | 21 | 125 | 16 | 0 | 162 | 5 | 9 | 52 | 0 | 66 | 560 |
| Total | 103 | 917 | 19 | 0 | 1039 | 259 | 106 | 142 | 0 | 507 | 182 | 436 | 62 | 0 | 680 | 35 | 44 | 234 | 0 | 313 | 2539 |
| 08:00 | 21 | 179 | 1 | 0 | 201 | 38 | 2 | 22 | 1 | 63 | 15 | 90 | 11 | 0 | 116 | 6 | 3 | 22 | 0 | 31 | 411 |
| 08:15 | 8 | 191 | 5 | 0 | 204 | 45 | 3 | 12 | 0 | 60 | 16 | 98 | 22 | 0 | 136 | 5 | 1 | 28 | 0 | 34 | 434 |

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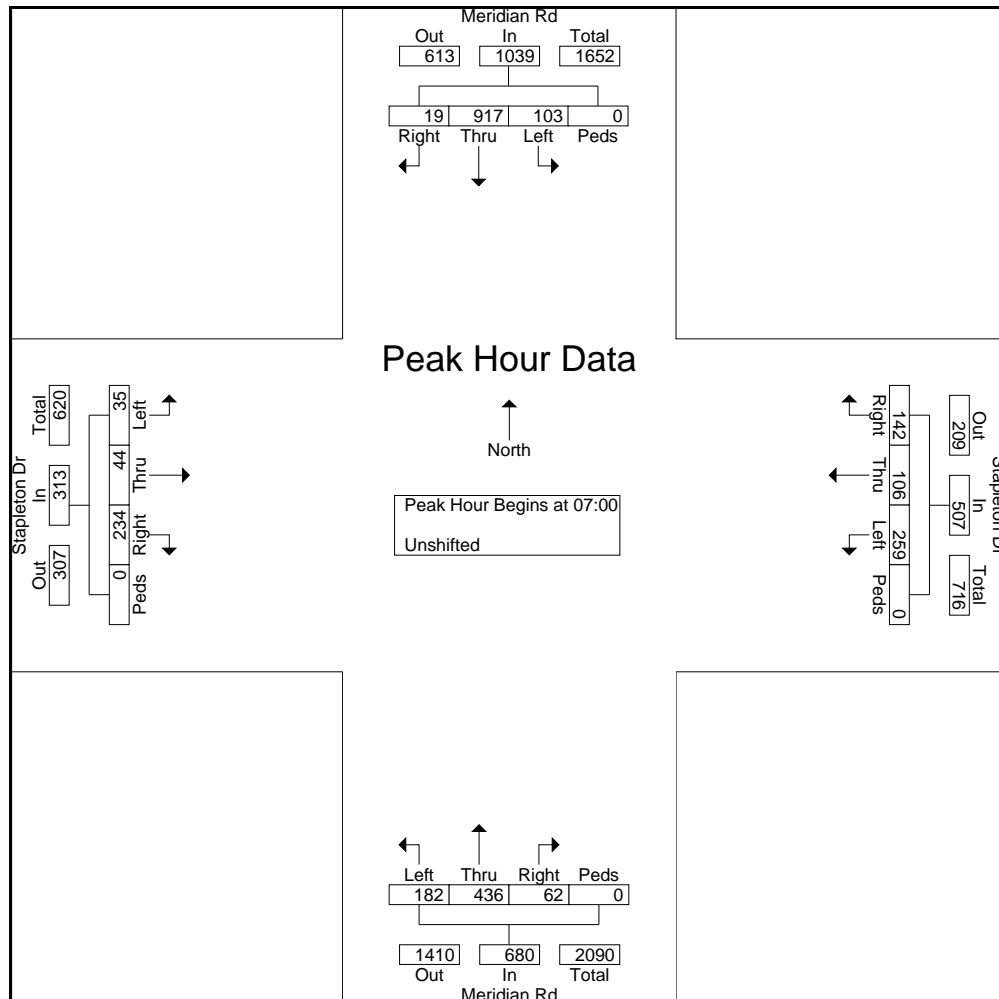
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Start Date : 05/02/2018

Page No : 3

| | Meridian Rd Southbound | | | | | Stapleton Dr Westbound | | | | | Meridian Rd Northbound | | | | | Stapleton Dr Eastbound | | | | | |
|--|------------------------|------|-------|------|------------|------------------------|------|-------|------|------------|------------------------|------|-------|------|------------|------------------------|------|-------|------|------------|------------|
| Start Time | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Int. Total |
| Peak Hour Analysis From 06:30 to 08:15 - Peak 1 of 1 | | | | | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 07:00 | | | | | | | | | | | | | | | | | | | | | |
| 07:00 | 14 | 227 | 2 | 0 | 243 | 96 | 15 | 30 | 0 | 141 | 38 | 89 | 16 | 0 | 143 | 6 | 10 | 51 | 0 | 67 | 594 |
| 07:15 | 19 | 206 | 9 | 0 | 234 | 72 | 38 | 35 | 0 | 145 | 67 | 101 | 14 | 0 | 182 | 14 | 15 | 73 | 0 | 102 | 663 |
| 07:30 | 33 | 263 | 7 | 0 | 303 | 54 | 46 | 48 | 0 | 148 | 56 | 121 | 16 | 0 | 193 | 10 | 10 | 58 | 0 | 78 | 722 |
| 07:45 | 37 | 221 | 1 | 0 | 259 | 37 | 7 | 29 | 0 | 73 | 21 | 125 | 16 | 0 | 162 | 5 | 9 | 52 | 0 | 66 | 560 |
| Total Volume | 103 | 917 | 19 | 0 | 1039 | 259 | 106 | 142 | 0 | 507 | 182 | 436 | 62 | 0 | 680 | 35 | 44 | 234 | 0 | 313 | 2539 |
| % App. Total | 9.9 | 88.3 | 1.8 | 0 | | 51.1 | 20.9 | 28 | 0 | | 26.8 | 64.1 | 9.1 | 0 | | 11.2 | 14.1 | 74.8 | 0 | | |
| PHF | .696 | .872 | .528 | .000 | .857 | .674 | .576 | .740 | .000 | .856 | .679 | .872 | .969 | .000 | .881 | .625 | .733 | .801 | .000 | .767 | .879 |



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Site Code : 184390

Start Date : 05/02/2018

Page No : 1

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| | Meridian Rd Southbound | | | | | Stapleton Dr Westbound | | | | | Meridian Rd Northbound | | | | | Stapleton Dr Eastbound | | | | | |
|------------|-----------------------------------|------|-------|------|------------|-----------------------------------|------|-------|------|------------|-----------------------------------|------|-------|------|------------|-----------------------------------|------|-------|------|------------|------------|
| Start Time | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Int. Total |
| 16:00 | 19 | 176 | 6 | 0 | 201 | 40 | 6 | 20 | 0 | 66 | 40 | 218 | 48 | 0 | 306 | 2 | 6 | 28 | 0 | 36 | 609 |
| 16:15 | 25 | 151 | 3 | 0 | 179 | 34 | 9 | 23 | 0 | 66 | 28 | 172 | 64 | 0 | 264 | 2 | 3 | 29 | 0 | 34 | 543 |
| 16:30 | 28 | 131 | 2 | 0 | 161 | 50 | 8 | 28 | 0 | 86 | 40 | 217 | 50 | 0 | 307 | 0 | 6 | 32 | 0 | 38 | 592 |
| 16:45 | 32 | 138 | 3 | 0 | 173 | 34 | 10 | 18 | 0 | 62 | 50 | 212 | 46 | 0 | 308 | 0 | 8 | 24 | 0 | 32 | 575 |
| Total | 104 | 596 | 14 | 0 | 714 | 158 | 33 | 89 | 0 | 280 | 158 | 819 | 208 | 0 | 1185 | 4 | 23 | 113 | 0 | 140 | 2319 |
| 17:00 | 25 | 124 | 3 | 0 | 152 | 39 | 11 | 20 | 0 | 70 | 50 | 214 | 49 | 1 | 314 | 4 | 9 | 35 | 0 | 48 | 584 |
| 17:15 | 26 | 127 | 0 | 0 | 153 | 38 | 15 | 19 | 0 | 72 | 48 | 238 | 60 | 0 | 346 | 2 | 7 | 24 | 0 | 33 | 604 |
| 17:30 | 22 | 138 | 4 | 0 | 164 | 23 | 11 | 22 | 0 | 56 | 38 | 208 | 57 | 1 | 304 | 3 | 8 | 27 | 0 | 38 | 562 |
| 17:45 | 29 | 103 | 1 | 0 | 133 | 32 | 9 | 18 | 0 | 59 | 54 | 213 | 50 | 0 | 317 | 2 | 6 | 41 | 0 | 49 | 558 |
| Total | 102 | 492 | 8 | 0 | 602 | 132 | 46 | 79 | 0 | 257 | 190 | 873 | 216 | 2 | 1281 | 11 | 30 | 127 | 0 | 168 | 2308 |

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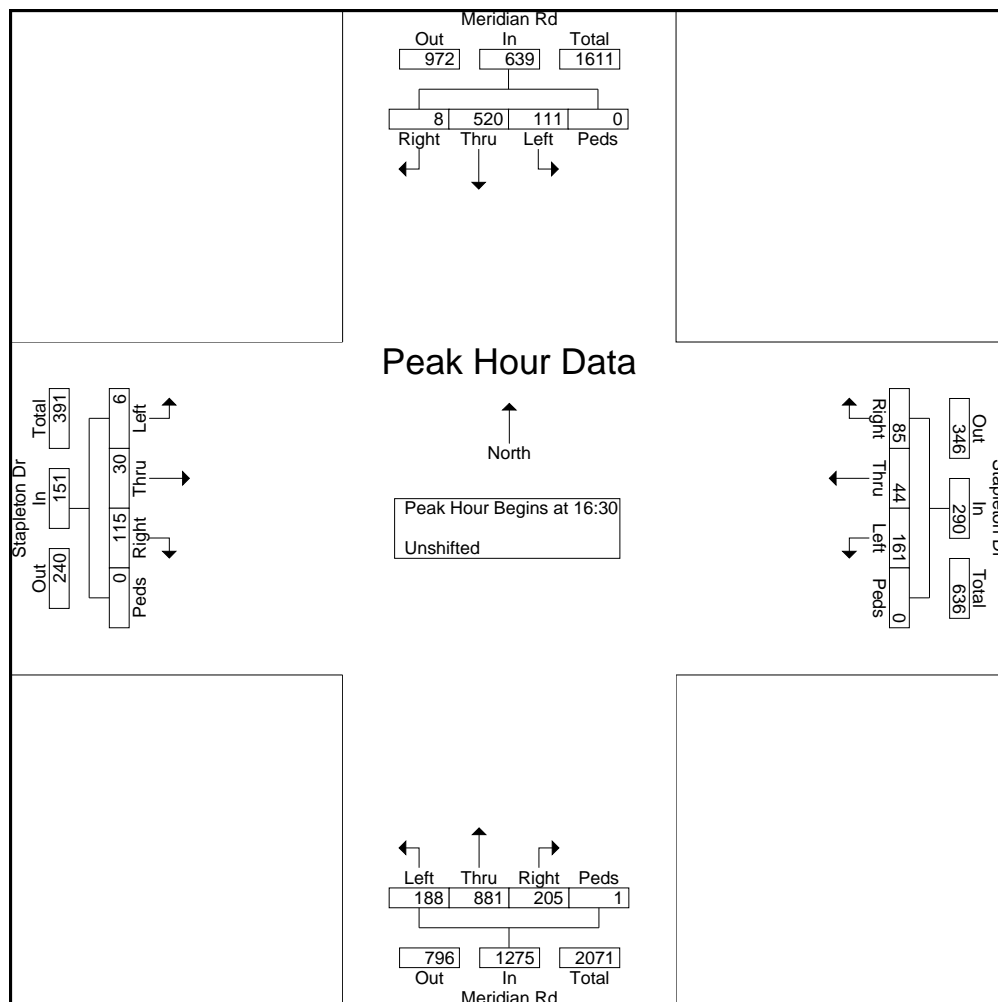
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Site Code : 184390

Start Date : 05/02/2018

Page No : 3

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|--|------------------------|------|-------|------|------------|------------------------|------|-------|------|------------|------------------------|------|-------|------|------------|------------------------|------|-------|------|------------|------------|
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| Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1 | | | | | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 16:30 | | | | | | | | | | | | | | | | | | | | | |
| 16:30 | 28 | 131 | 2 | 0 | 161 | 50 | 8 | 28 | 0 | 86 | 40 | 217 | 50 | 0 | 307 | 0 | 6 | 32 | 0 | 38 | 592 |
| 16:45 | 32 | 138 | 3 | 0 | 173 | 34 | 10 | 18 | 0 | 62 | 50 | 212 | 46 | 0 | 308 | 0 | 8 | 24 | 0 | 32 | 575 |
| 17:00 | 25 | 124 | 3 | 0 | 152 | 39 | 11 | 20 | 0 | 70 | 50 | 214 | 49 | 1 | 314 | 4 | 9 | 35 | 0 | 48 | 584 |
| 17:15 | 26 | 127 | 0 | 0 | 153 | 38 | 15 | 19 | 0 | 72 | 48 | 238 | 60 | 0 | 346 | 2 | 7 | 24 | 0 | 33 | 604 |
| Total Volume | 111 | 520 | 8 | 0 | 639 | 161 | 44 | 85 | 0 | 290 | 188 | 881 | 205 | 1 | 1275 | 6 | 30 | 115 | 0 | 151 | 2355 |
| % App. Total | 17.4 | 81.4 | 1.3 | 0 | | 55.5 | 15.2 | 29.3 | 0 | | 14.7 | 69.1 | 16.1 | 0.1 | | 4 | 19.9 | 76.2 | 0 | | |
| PHF | .867 | .942 | .667 | .000 | .923 | .805 | .733 | .759 | .000 | .843 | .940 | .925 | .854 | .250 | .921 | .375 | .833 | .821 | .000 | .786 | .975 |



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Groups Printed- Unshifted

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| 06:30 | 2 | 225 | 1 | 0 | 228 | 25 | 2 | 11 | 0 | 38 | 1 | 137 | 4 | 0 | 142 | 0 | 2 | 9 | 0 | 11 | 419 |
| 06:45 | 2 | 271 | 1 | 0 | 274 | 31 | 2 | 10 | 0 | 43 | 1 | 144 | 7 | 0 | 152 | 0 | 2 | 10 | 0 | 12 | 481 |
| Total | 4 | 496 | 2 | 0 | 502 | 56 | 4 | 21 | 0 | 81 | 2 | 281 | 11 | 0 | 294 | 0 | 4 | 19 | 0 | 23 | 900 |
| 07:00 | 4 | 381 | 1 | 0 | 386 | 41 | 3 | 14 | 0 | 58 | 4 | 128 | 2 | 0 | 134 | 6 | 9 | 33 | 0 | 48 | 626 |
| 07:15 | 4 | 367 | 3 | 0 | 374 | 37 | 3 | 12 | 0 | 52 | 3 | 188 | 4 | 0 | 195 | 4 | 4 | 23 | 0 | 31 | 652 |
| 07:30 | 20 | 355 | 2 | 0 | 377 | 33 | 3 | 15 | 0 | 51 | 4 | 189 | 4 | 0 | 197 | 8 | 2 | 22 | 0 | 32 | 657 |
| 07:45 | 16 | 293 | 2 | 0 | 311 | 21 | 0 | 4 | 0 | 25 | 10 | 154 | 8 | 0 | 172 | 3 | 2 | 11 | 0 | 16 | 524 |
| Total | 44 | 1396 | 8 | 0 | 1448 | 132 | 9 | 45 | 0 | 186 | 21 | 659 | 18 | 0 | 698 | 21 | 17 | 89 | 0 | 127 | 2459 |
| 08:00 | 12 | 258 | 0 | 0 | 270 | 21 | 1 | 3 | 0 | 25 | 4 | 134 | 25 | 0 | 163 | 0 | 9 | 13 | 0 | 22 | 480 |
| 08:15 | 21 | 223 | 3 | 0 | 247 | 53 | 7 | 17 | 0 | 77 | 6 | 146 | 17 | 0 | 169 | 0 | 6 | 13 | 0 | 19 | 512 |

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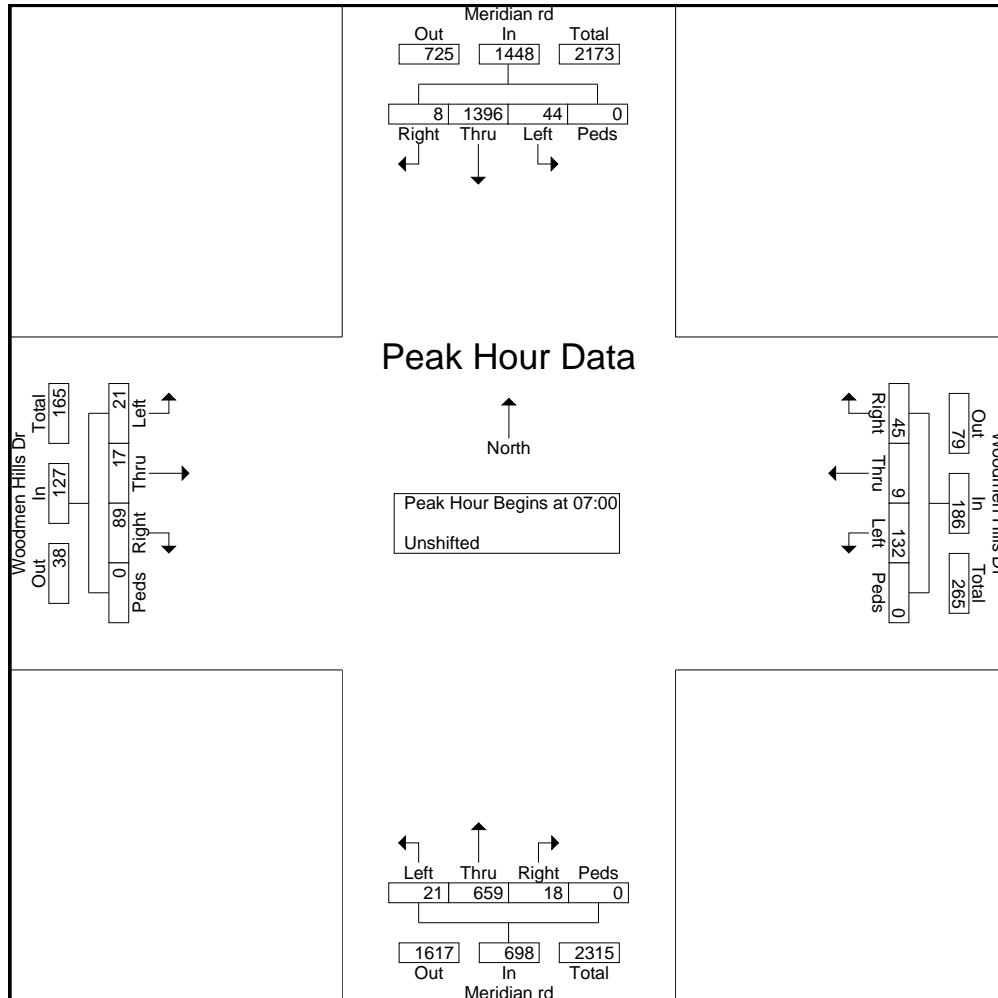
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Page No : 3

| | Meridian rd Southbound | | | | | Woodmen Hills Dr Westbound | | | | | Meridian rd Northbound | | | | | Woodmen Hills Dr Eastbound | | | | | |
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| 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 | 4 | 381 | 1 | 0 | 386 | 41 | 3 | 14 | 0 | 58 | 4 | 128 | 2 | 0 | 134 | 6 | 9 | 33 | 0 | 48 | 626 |
| 07:15 | 4 | 367 | 3 | 0 | 374 | 37 | 3 | 12 | 0 | 52 | 3 | 188 | 4 | 0 | 195 | 4 | 4 | 23 | 0 | 31 | 652 |
| 07:30 | 20 | 355 | 2 | 0 | 377 | 33 | 3 | 15 | 0 | 51 | 4 | 189 | 4 | 0 | 197 | 8 | 2 | 22 | 0 | 32 | 657 |
| 07:45 | 16 | 293 | 2 | 0 | 311 | 21 | 0 | 4 | 0 | 25 | 10 | 154 | 8 | 0 | 172 | 3 | 2 | 11 | 0 | 16 | 524 |
| Total Volume | 44 | 1396 | 8 | 0 | 1448 | 132 | 9 | 45 | 0 | 186 | 21 | 659 | 18 | 0 | 698 | 21 | 17 | 89 | 0 | 127 | 2459 |
| % App. Total | 3 | 96.4 | 0.6 | 0 | | 71 | 4.8 | 24.2 | 0 | | 3 | 94.4 | 2.6 | 0 | | 16.5 | 13.4 | 70.1 | 0 | | |
| PHF | .550 | .916 | .667 | .000 | .938 | .805 | .750 | .750 | .000 | .802 | .525 | .872 | .563 | .000 | .886 | .656 | .472 | .674 | .000 | .661 | .936 |



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Page No : 1

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| | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | |
| 16:00 | 6 | 244 | 2 | 0 | 252 | 13 | 0 | 1 | 0 | 14 | 24 | 272 | 21 | 0 | 317 | 2 | 0 | 13 | 0 | 15 | 598 |
| 16:15 | 1 | 199 | 5 | 0 | 205 | 11 | 7 | 6 | 0 | 24 | 20 | 276 | 18 | 1 | 315 | 1 | 4 | 6 | 0 | 11 | 555 |
| 16:30 | 4 | 181 | 6 | 0 | 191 | 24 | 3 | 2 | 0 | 29 | 14 | 320 | 24 | 0 | 358 | 3 | 5 | 12 | 0 | 20 | 598 |
| 16:45 | 2 | 215 | 3 | 0 | 220 | 4 | 5 | 3 | 0 | 12 | 23 | 297 | 23 | 1 | 344 | 1 | 1 | 14 | 0 | 16 | 592 |
| Total | 13 | 839 | 16 | 0 | 868 | 52 | 15 | 12 | 0 | 79 | 81 | 1165 | 86 | 2 | 1334 | 7 | 10 | 45 | 0 | 62 | 2343 |
| 17:00 | 5 | 195 | 5 | 1 | 206 | 20 | 3 | 1 | 0 | 24 | 27 | 334 | 22 | 0 | 383 | 0 | 8 | 12 | 0 | 20 | 633 |
| 17:15 | 11 | 174 | 3 | 0 | 188 | 13 | 0 | 2 | 0 | 15 | 12 | 317 | 31 | 2 | 362 | 0 | 5 | 14 | 0 | 19 | 584 |
| 17:30 | 3 | 192 | 1 | 0 | 196 | 18 | 1 | 3 | 0 | 22 | 28 | 292 | 42 | 0 | 362 | 3 | 2 | 8 | 0 | 13 | 593 |
| 17:45 | 8 | 161 | 4 | 0 | 173 | 17 | 5 | 0 | 0 | 22 | 17 | 327 | 19 | 0 | 363 | 2 | 4 | 16 | 0 | 22 | 580 |
| Total | 27 | 722 | 13 | 1 | 763 | 68 | 9 | 6 | 0 | 83 | 84 | 1270 | 114 | 2 | 1470 | 5 | 19 | 50 | 0 | 74 | 2390 |

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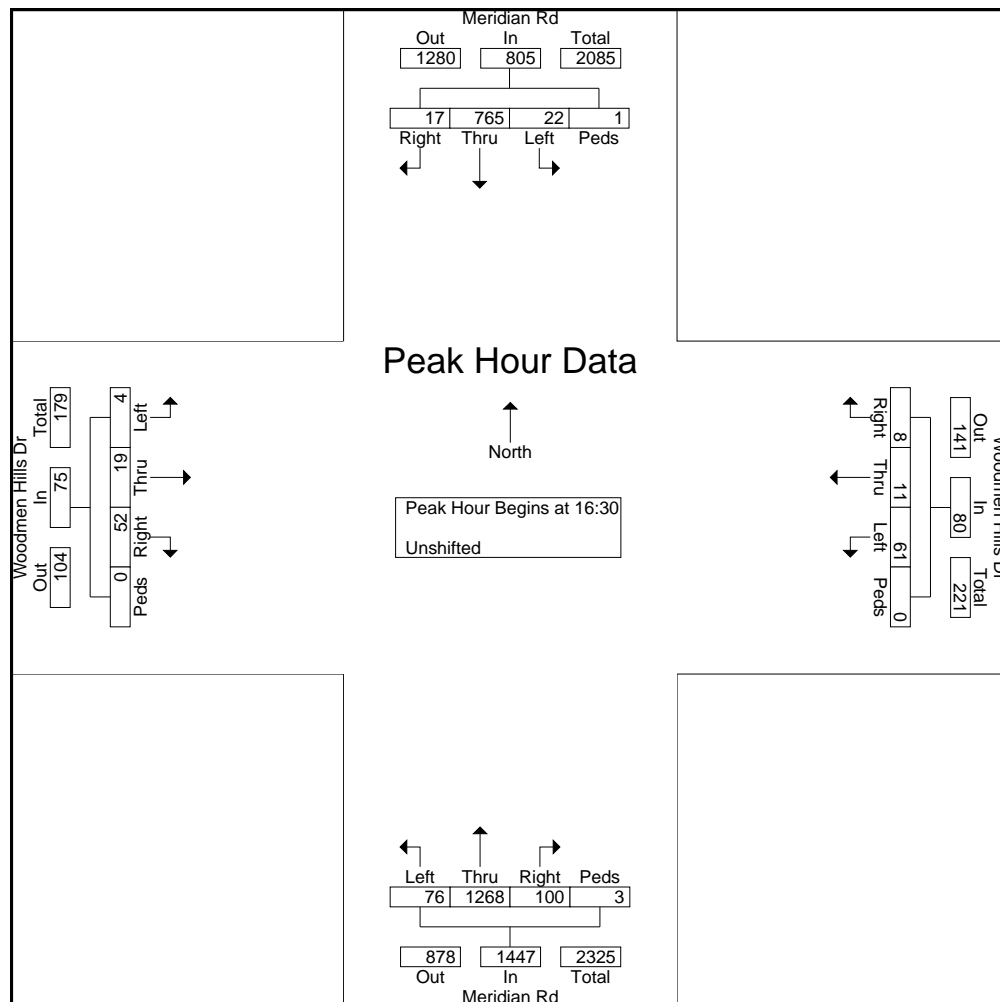
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| | Meridian Rd Southbound | | | | | Woodmen Hills Dr Westbound | | | | | Meridian Rd Northbound | | | | | Woodmen Hills Dr Eastbound | | | | | |
|--|------------------------|------|-------|------|------------|----------------------------|------|-------|------|------------|------------------------|------|-------|------|------------|----------------------------|------|-------|------|------------|------------|
| Start Time | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Int. Total |
| Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1 | | | | | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 16:30 | | | | | | | | | | | | | | | | | | | | | |
| 16:30 | 4 | 181 | 6 | 0 | 191 | 24 | 3 | 2 | 0 | 29 | 14 | 320 | 24 | 0 | 358 | 3 | 5 | 12 | 0 | 20 | 598 |
| 16:45 | 2 | 215 | 3 | 0 | 220 | 4 | 5 | 3 | 0 | 12 | 23 | 297 | 23 | 1 | 344 | 1 | 1 | 14 | 0 | 16 | 592 |
| 17:00 | 5 | 195 | 5 | 1 | 206 | 20 | 3 | 1 | 0 | 24 | 27 | 334 | 22 | 0 | 383 | 0 | 8 | 12 | 0 | 20 | 633 |
| 17:15 | 11 | 174 | 3 | 0 | 188 | 13 | 0 | 2 | 0 | 15 | 12 | 317 | 31 | 2 | 362 | 0 | 5 | 14 | 0 | 19 | 584 |
| Total Volume | 22 | 765 | 17 | 1 | 805 | 61 | 11 | 8 | 0 | 80 | 76 | 1268 | 100 | 3 | 1447 | 4 | 19 | 52 | 0 | 75 | 2407 |
| % App. Total | 2.7 | 95 | 2.1 | 0.1 | | 76.2 | 13.8 | 10 | 0 | | 5.3 | 87.6 | 6.9 | 0.2 | | 5.3 | 25.3 | 69.3 | 0 | | |
| PHF | .500 | .890 | .708 | .250 | .915 | .635 | .550 | .667 | .000 | .690 | .704 | .949 | .806 | .375 | .945 | .333 | .594 | .929 | .000 | .938 | .951 |



LSC Transportation Consultants, Inc.

545 E Pikes Peak Ave, Suite 210

Colorado Springs, CO 80905

719-633-2868

File Name : Meridian Rd - Woodmen Rd AM

Site Code : 184390

Start Date : 05/24/2018

Page No : 1

Groups Printed- Unshifted

| | Meridian Rd Southbound | | | | | Woodmen Rd Westbound | | | | | Meridian Rd Northbound | | | | | Woodmen Rd Eastbound | | | | | |
|------------|-----------------------------------|------|-------|------|------------|---------------------------------|------|-------|------|------------|-----------------------------------|------|-------|------|------------|---------------------------------|------|-------|------|------------|------------|
| Start Time | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Int. Total |
| 06:30 | 16 | 38 | 84 | 0 | 138 | 1 | 69 | 9 | 0 | 79 | 7 | 8 | 1 | 0 | 16 | 37 | 35 | 4 | 0 | 76 | 309 |
| 06:45 | 61 | 95 | 139 | 1 | 296 | 12 | 135 | 30 | 0 | 177 | 13 | 26 | 3 | 0 | 42 | 58 | 92 | 18 | 0 | 168 | 683 |
| Total | 77 | 133 | 223 | 1 | 434 | 13 | 204 | 39 | 0 | 256 | 20 | 34 | 4 | 0 | 58 | 95 | 127 | 22 | 0 | 244 | 992 |
| 07:00 | 72 | 98 | 174 | 0 | 344 | 30 | 137 | 32 | 0 | 199 | 12 | 22 | 6 | 0 | 40 | 87 | 121 | 18 | 1 | 227 | 810 |
| 07:15 | 81 | 100 | 232 | 0 | 413 | 21 | 164 | 31 | 0 | 216 | 15 | 30 | 4 | 0 | 49 | 92 | 90 | 19 | 0 | 201 | 879 |
| 07:30 | 51 | 104 | 216 | 0 | 371 | 17 | 196 | 20 | 0 | 233 | 18 | 34 | 4 | 1 | 57 | 84 | 104 | 17 | 0 | 205 | 866 |
| 07:45 | 58 | 102 | 131 | 0 | 291 | 19 | 95 | 28 | 0 | 142 | 18 | 50 | 10 | 0 | 78 | 97 | 90 | 10 | 0 | 197 | 708 |
| Total | 262 | 404 | 753 | 0 | 1419 | 87 | 592 | 111 | 0 | 790 | 63 | 136 | 24 | 1 | 224 | 360 | 405 | 64 | 1 | 830 | 3263 |
| 08:00 | 43 | 75 | 150 | 0 | 268 | 13 | 109 | 27 | 0 | 149 | 15 | 24 | 7 | 0 | 46 | 103 | 90 | 24 | 0 | 217 | 680 |
| 08:15 | 40 | 60 | 143 | 0 | 243 | 17 | 139 | 22 | 0 | 178 | 19 | 27 | 7 | 2 | 55 | 94 | 56 | 17 | 0 | 167 | 643 |

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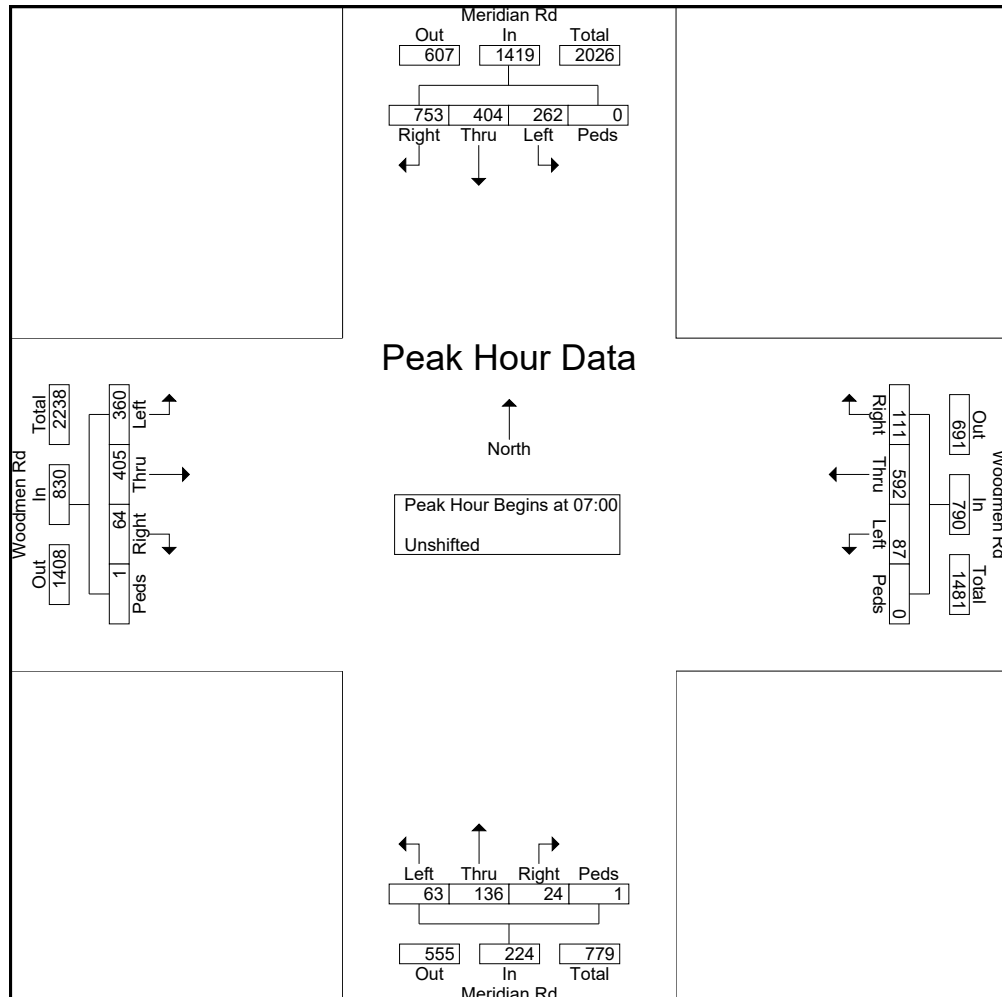
File Name : Meridian Rd - Woodmen Rd AM

Site Code : 184390

Start Date : 05/24/2018

Page No : 3

| | Meridian Rd Southbound | | | | | Woodmen Rd Westbound | | | | | Meridian Rd Northbound | | | | | Woodmen Rd Eastbound | | | | | |
|--|------------------------|------|-------|------|------------|----------------------|------|-------|------|------------|------------------------|------|-------|------|------------|----------------------|------|-------|------|------------|------------|
| Start Time | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Int. Total |
| Peak Hour Analysis From 06:30 to 08:15 - Peak 1 of 1 | | | | | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 07:00 | | | | | | | | | | | | | | | | | | | | | |
| 07:00 | 72 | 98 | 174 | 0 | 344 | 30 | 137 | 32 | 0 | 199 | 12 | 22 | 6 | 0 | 40 | 87 | 121 | 18 | 1 | 227 | 810 |
| 07:15 | 81 | 100 | 232 | 0 | 413 | 21 | 164 | 31 | 0 | 216 | 15 | 30 | 4 | 0 | 49 | 92 | 90 | 19 | 0 | 201 | 879 |
| 07:30 | 51 | 104 | 216 | 0 | 371 | 17 | 196 | 20 | 0 | 233 | 18 | 34 | 4 | 1 | 57 | 84 | 104 | 17 | 0 | 205 | 866 |
| 07:45 | 58 | 102 | 131 | 0 | 291 | 19 | 95 | 28 | 0 | 142 | 18 | 50 | 10 | 0 | 78 | 97 | 90 | 10 | 0 | 197 | 708 |
| Total Volume | 262 | 404 | 753 | 0 | 1419 | 87 | 592 | 111 | 0 | 790 | 63 | 136 | 24 | 1 | 224 | 360 | 405 | 64 | 1 | 830 | 3263 |
| % App. Total | 18.5 | 28.5 | 53.1 | 0 | | 11 | 74.9 | 14.1 | 0 | | 28.1 | 60.7 | 10.7 | 0.4 | | 43.4 | 48.8 | 7.7 | 0.1 | | |
| PHF | .809 | .971 | .811 | .000 | .859 | .725 | .755 | .867 | .000 | .848 | .875 | .680 | .600 | .250 | .718 | .928 | .837 | .842 | .250 | .914 | .928 |



LSC Transportation Consultants, Inc.

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Colorado Springs, CO 80905

719-633-2868

File Name : Meridian Rd - Woodmen Rd PM

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Start Date : 05/24/2018

Page No : 1

Groups Printed- Unshifted

| | Meridian Rd Southbound | | | | | Woodmen Rd Westbound | | | | | Meridian Rd Northbound | | | | | Woodmen Rd Eastbound | | | | | |
|------------|-----------------------------------|------|-------|------|------------|---------------------------------|------|-------|------|------------|-----------------------------------|------|-------|------|------------|---------------------------------|------|-------|------|------------|------------|
| Start Time | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Int. Total |
| 16:00 | 41 | 86 | 117 | 0 | 244 | 14 | 131 | 29 | 0 | 174 | 23 | 111 | 26 | 2 | 162 | 187 | 127 | 8 | 1 | 323 | 903 |
| 16:15 | 37 | 86 | 115 | 0 | 238 | 34 | 105 | 37 | 0 | 176 | 30 | 112 | 23 | 0 | 165 | 187 | 169 | 21 | 0 | 377 | 956 |
| 16:30 | 38 | 70 | 111 | 0 | 219 | 38 | 170 | 22 | 0 | 230 | 23 | 111 | 17 | 2 | 153 | 191 | 164 | 19 | 0 | 374 | 976 |
| 16:45 | 41 | 79 | 136 | 0 | 256 | 29 | 111 | 44 | 1 | 185 | 32 | 97 | 28 | 2 | 159 | 190 | 146 | 30 | 0 | 366 | 966 |
| Total | 157 | 321 | 479 | 0 | 957 | 115 | 517 | 132 | 1 | 765 | 108 | 431 | 94 | 6 | 639 | 755 | 606 | 78 | 1 | 1440 | 3801 |
| 17:00 | 29 | 72 | 113 | 0 | 214 | 30 | 133 | 52 | 0 | 215 | 21 | 89 | 30 | 2 | 142 | 147 | 140 | 23 | 0 | 310 | 881 |
| 17:15 | 47 | 78 | 95 | 0 | 220 | 60 | 84 | 34 | 0 | 178 | 25 | 121 | 22 | 3 | 171 | 185 | 150 | 32 | 0 | 367 | 936 |
| 17:30 | 34 | 68 | 104 | 0 | 206 | 47 | 79 | 32 | 0 | 158 | 18 | 102 | 26 | 2 | 148 | 222 | 166 | 26 | 0 | 414 | 926 |
| 17:45 | 34 | 58 | 94 | 0 | 186 | 37 | 106 | 40 | 0 | 183 | 20 | 81 | 15 | 2 | 118 | 157 | 151 | 18 | 0 | 326 | 813 |
| Total | 144 | 276 | 406 | 0 | 826 | 174 | 402 | 158 | 0 | 734 | 84 | 393 | 93 | 9 | 579 | 711 | 607 | 99 | 0 | 1417 | 3556 |

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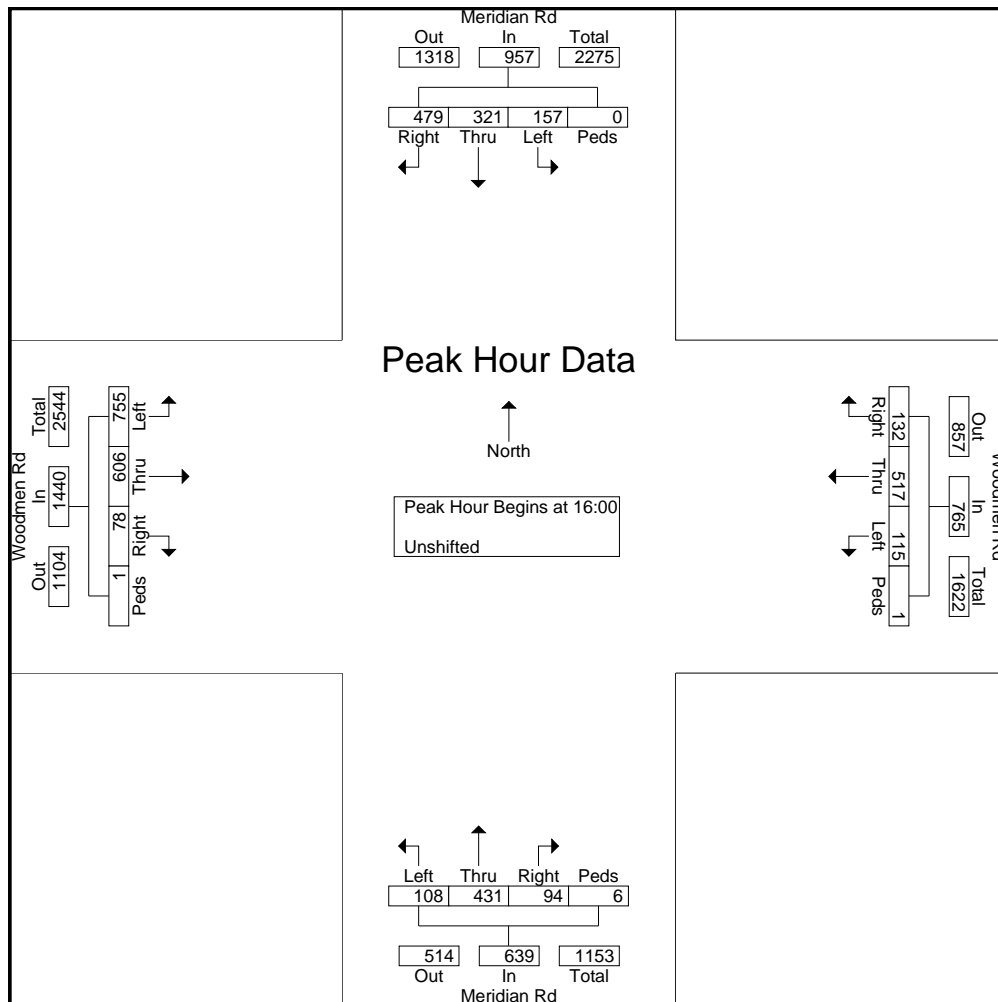
File Name : Meridian Rd - Woodmen Rd PM

Site Code : 184390

Start Date : 05/24/2018

Page No : 3

| | Meridian Rd Southbound | | | | | Woodmen Rd Westbound | | | | | Meridian Rd Northbound | | | | | Woodmen Rd Eastbound | | | | | |
|--|------------------------|------|-------|------|------------|----------------------|------|-------|------|------------|------------------------|------|-------|------|------------|----------------------|------|-------|------|------------|------------|
| Start Time | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Int. Total |
| Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1 | | | | | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 16:00 | | | | | | | | | | | | | | | | | | | | | |
| 16:00 | 41 | 86 | 117 | 0 | 244 | 14 | 131 | 29 | 0 | 174 | 23 | 111 | 26 | 2 | 162 | 187 | 127 | 8 | 1 | 323 | 903 |
| 16:15 | 37 | 86 | 115 | 0 | 238 | 34 | 105 | 37 | 0 | 176 | 30 | 112 | 23 | 0 | 165 | 187 | 169 | 21 | 0 | 377 | 956 |
| 16:30 | 38 | 70 | 111 | 0 | 219 | 38 | 170 | 22 | 0 | 230 | 23 | 111 | 17 | 2 | 153 | 191 | 164 | 19 | 0 | 374 | 976 |
| 16:45 | 41 | 79 | 136 | 0 | 256 | 29 | 111 | 44 | 1 | 185 | 32 | 97 | 28 | 2 | 159 | 190 | 146 | 30 | 0 | 366 | 966 |
| Total Volume | 157 | 321 | 479 | 0 | 957 | 115 | 517 | 132 | 1 | 765 | 108 | 431 | 94 | 6 | 639 | 755 | 606 | 78 | 1 | 1440 | 3801 |
| % App. Total | 16.4 | 33.5 | 50.1 | 0 | | 15 | 67.6 | 17.3 | 0.1 | | 16.9 | 67.4 | 14.7 | 0.9 | | 52.4 | 42.1 | 5.4 | 0.1 | | |
| PHF | .957 | .933 | .881 | .000 | .935 | .757 | .760 | .750 | .250 | .832 | .844 | .962 | .839 | .750 | .968 | .988 | .896 | .650 | .250 | .955 | .974 |



LSC Transportation Consultants, Inc.

545 E Pikes Peak Ave, Suite 210

Colorado Springs, CO 80905

719-633-2868

File Name : Stapleton Dr - Towner Ave AM

Site Code : 184390

Start Date : 05/03/2018

Page No : 1

Groups Printed- Unshifted

| | Towner Ave Southbound | | | | | Stapleton Dr Westbound | | | | | Towner Ave 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 |
| 06:30 | 22 | 1 | 0 | 0 | 23 | 1 | 0 | 16 | 0 | 17 | 0 | 2 | 1 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 43 |
| 06:45 | 26 | 1 | 0 | 0 | 27 | 0 | 0 | 33 | 0 | 33 | 0 | 2 | 1 | 0 | 3 | 0 | 1 | 0 | 0 | 1 | 64 |
| Total | 48 | 2 | 0 | 0 | 50 | 1 | 0 | 49 | 0 | 50 | 0 | 4 | 2 | 0 | 6 | 0 | 1 | 0 | 0 | 1 | 107 |
| 07:00 | 48 | 5 | 0 | 0 | 53 | 0 | 0 | 47 | 0 | 47 | 0 | 5 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 105 |
| 07:15 | 65 | 4 | 0 | 0 | 69 | 0 | 0 | 93 | 0 | 93 | 0 | 6 | 2 | 0 | 8 | 0 | 0 | 0 | 0 | 0 | 170 |
| 07:30 | 59 | 4 | 0 | 0 | 63 | 1 | 0 | 119 | 0 | 120 | 0 | 8 | 1 | 0 | 9 | 0 | 0 | 0 | 0 | 0 | 192 |
| 07:45 | 45 | 2 | 0 | 0 | 47 | 1 | 0 | 31 | 0 | 32 | 0 | 3 | 1 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 83 |
| Total | 217 | 15 | 0 | 0 | 232 | 2 | 0 | 290 | 0 | 292 | 0 | 22 | 4 | 0 | 26 | 0 | 0 | 0 | 0 | 0 | 550 |
| 08:00 | 22 | 1 | 0 | 0 | 23 | 1 | 0 | 20 | 0 | 21 | 0 | 2 | 1 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 47 |
| 08:15 | 16 | 2 | 0 | 0 | 18 | 0 | 0 | 12 | 0 | 12 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 31 |

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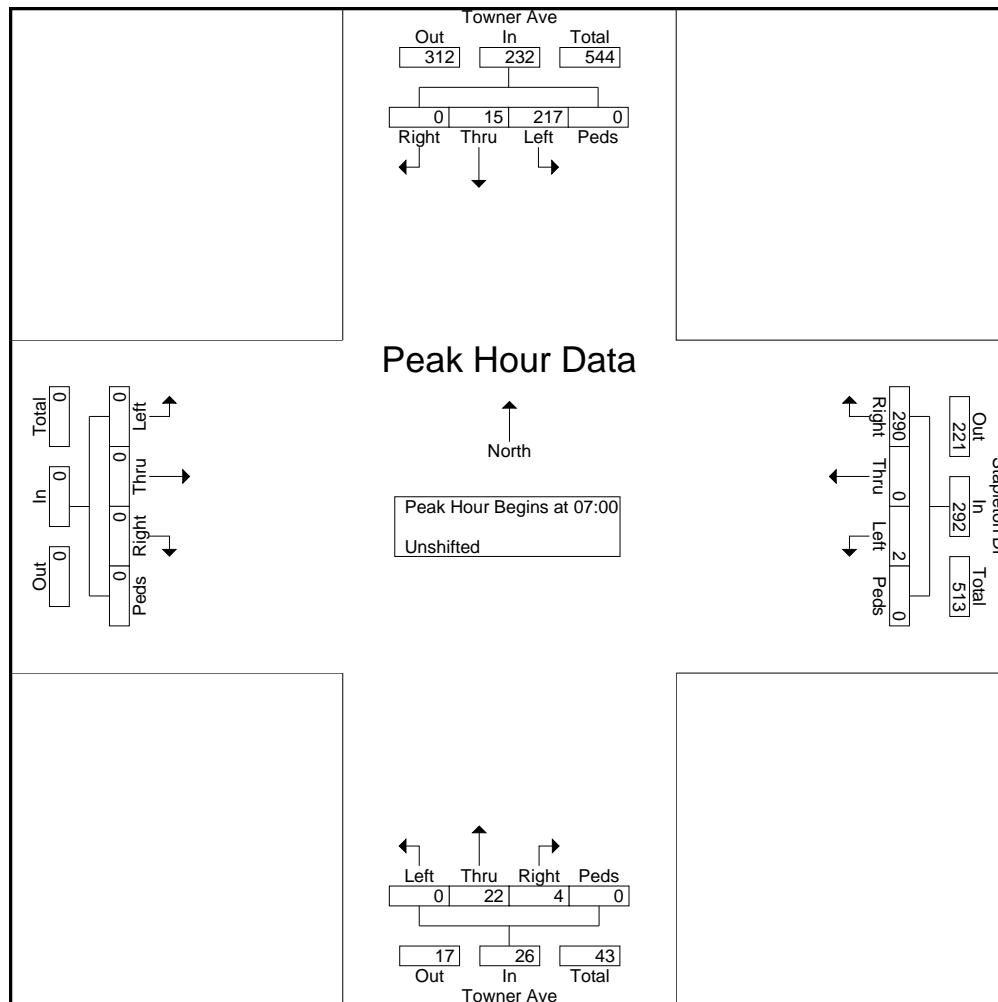
File Name : Stapleton Dr - Towner Ave AM

Site Code : 184390

Start Date : 05/03/2018

Page No : 3

| | Towner Ave Southbound | | | | | Stapleton Dr Westbound | | | | | Towner Ave 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 | 48 | 5 | 0 | 0 | 53 | 0 | 0 | 47 | 0 | 47 | 0 | 5 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 105 |
| 07:15 | 65 | 4 | 0 | 0 | 69 | 0 | 0 | 93 | 0 | 93 | 0 | 6 | 2 | 0 | 8 | 0 | 0 | 0 | 0 | 0 | 170 |
| 07:30 | 59 | 4 | 0 | 0 | 63 | 1 | 0 | 119 | 0 | 120 | 0 | 8 | 1 | 0 | 9 | 0 | 0 | 0 | 0 | 0 | 192 |
| 07:45 | 45 | 2 | 0 | 0 | 47 | 1 | 0 | 31 | 0 | 32 | 0 | 3 | 1 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 83 |
| Total Volume | 217 | 15 | 0 | 0 | 232 | 2 | 0 | 290 | 0 | 292 | 0 | 22 | 4 | 0 | 26 | 0 | 0 | 0 | 0 | 0 | 550 |
| % App. Total | 93.5 | 6.5 | 0 | 0 | | 0.7 | 0 | 99.3 | 0 | | 0 | 84.6 | 15.4 | 0 | | 0 | 0 | 0 | 0 | | |
| PHF | .835 | .750 | .000 | .000 | .841 | .500 | .000 | .609 | .000 | .608 | .000 | .688 | .500 | .000 | .722 | .000 | .000 | .000 | .000 | .000 | .716 |



LSC Transportation Consultants, Inc.

545 E Pikes Peak Ave, Suite 210

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719-633-2868

File Name : Stapleton Dr - Towner Ave PM

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Page No : 1

Groups Printed- Unshifted

| | Towner ave Southbound | | | | | Stapleton Dr Westbound | | | | | Towner ave 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 |
| 16:00 | 16 | 0 | 0 | 0 | 16 | 0 | 0 | 10 | 0 | 10 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 27 |
| 16:15 | 16 | 2 | 0 | 0 | 18 | 0 | 0 | 34 | 0 | 34 | 0 | 1 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 54 |
| 16:30 | 12 | 0 | 0 | 0 | 12 | 1 | 0 | 26 | 0 | 27 | 0 | 3 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 42 |
| 16:45 | 17 | 0 | 0 | 0 | 17 | 2 | 0 | 25 | 0 | 27 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 45 |
| Total | 61 | 2 | 0 | 0 | 63 | 3 | 0 | 95 | 0 | 98 | 0 | 6 | 1 | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 168 |
| 17:00 | 29 | 2 | 0 | 0 | 31 | 1 | 0 | 18 | 0 | 19 | 0 | 1 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 52 |
| 17:15 | 13 | 1 | 0 | 0 | 14 | 0 | 0 | 14 | 0 | 14 | 0 | 3 | 1 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 32 |
| 17:30 | 11 | 1 | 0 | 0 | 12 | 1 | 0 | 16 | 0 | 17 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 29 |
| 17:45 | 9 | 0 | 0 | 0 | 9 | 1 | 0 | 12 | 0 | 13 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 23 |
| Total | 62 | 4 | 0 | 0 | 66 | 3 | 0 | 60 | 0 | 63 | 0 | 5 | 2 | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 136 |

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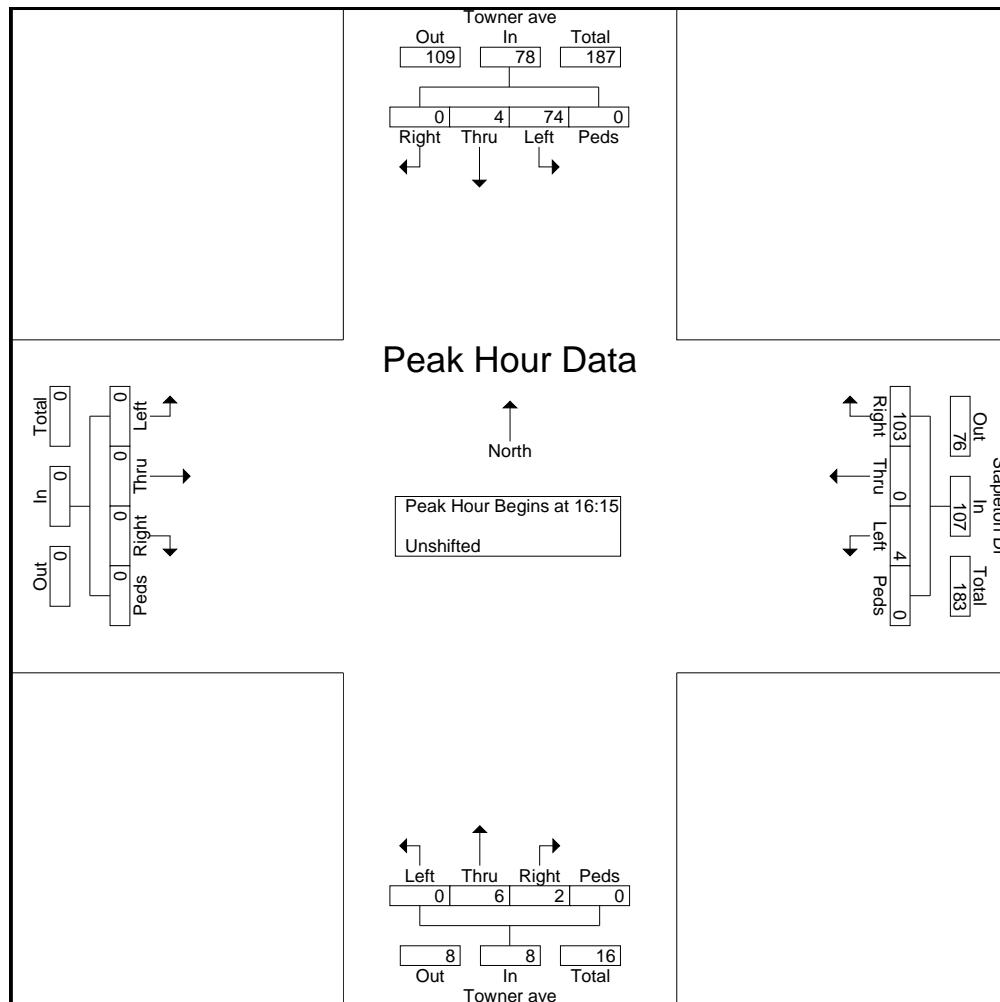
File Name : Stapleton Dr - Towner Ave PM

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| | Towner ave Southbound | | | | | Stapleton Dr Westbound | | | | | Towner ave 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 16:15 | | | | | | | | | | | | | | | | | | | | | |
| 16:15 | 16 | 2 | 0 | 0 | 18 | 0 | 0 | 34 | 0 | 34 | 0 | 1 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 54 |
| 16:30 | 12 | 0 | 0 | 0 | 12 | 1 | 0 | 26 | 0 | 27 | 0 | 3 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 42 |
| 16:45 | 17 | 0 | 0 | 0 | 17 | 2 | 0 | 25 | 0 | 27 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 45 |
| 17:00 | 29 | 2 | 0 | 0 | 31 | 1 | 0 | 18 | 0 | 19 | 0 | 1 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 52 |
| Total Volume | 74 | 4 | 0 | 0 | 78 | 4 | 0 | 103 | 0 | 107 | 0 | 6 | 2 | 0 | 8 | 0 | 0 | 0 | 0 | 0 | 193 |
| % App. Total | 94.9 | 5.1 | 0 | 0 | | 3.7 | 0 | 96.3 | 0 | | 0 | 75 | 25 | 0 | | 0 | 0 | 0 | 0 | | |
| PHF | .638 | .500 | .000 | .000 | .629 | .500 | .000 | .757 | .000 | .787 | .000 | .500 | .500 | .000 | .667 | .000 | .000 | .000 | .000 | .000 | .894 |






HCM 6th AWSC
5: Towner Ave & Stapleton Dr

Existing Traffic
AM Peak Hour

Intersection

Intersection Delay, s/veh 11.6

Intersection LOS B

























| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---------------------|---|------|---|------|------|---|
| Lane Configurations |  | |  | | |  |
| Traffic Vol, veh/h | 2 | 290 | 22 | 4 | 217 | 15 |
| Future Vol, veh/h | 2 | 290 | 22 | 4 | 217 | 15 |
| Peak Hour Factor | 0.61 | 0.61 | 0.72 | 0.72 | 0.92 | 0.92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 3 | 475 | 31 | 6 | 236 | 16 |
| Number of Lanes | 1 | 0 | 1 | 0 | 0 | 1 |

| Approach | WB | NB | SB |
|-------------------------------|----|-----|------|
| Opposing Approach | | SB | NB |
| Opposing Lanes | 0 | 1 | 1 |
| Conflicting Approach Left NB | | | WB |
| Conflicting Lanes Left | 1 | 0 | 1 |
| Conflicting Approach Right SB | | WB | |
| Conflicting Lanes Right | 1 | 1 | 0 |
| HCM Control Delay | 12 | 8.6 | 11.2 |
| HCM LOS | B | A | B |

| Lane | NBLn1 | WBLn1 | SBLn1 |
|------------------------|-------|-------|-------|
| Vol Left, % | 0% | 1% | 94% |
| Vol Thru, % | 85% | 0% | 6% |
| Vol Right, % | 15% | 99% | 0% |
| Sign Control | Stop | Stop | Stop |
| Traffic Vol by Lane | 26 | 292 | 232 |
| LT Vol | 0 | 2 | 217 |
| Through Vol | 22 | 0 | 15 |
| RT Vol | 4 | 290 | 0 |
| Lane Flow Rate | 36 | 479 | 252 |
| Geometry Grp | 1 | 1 | 1 |
| Degree of Util (X) | 0.052 | 0.546 | 0.363 |
| Departure Headway (Hd) | 5.214 | 4.104 | 5.181 |
| Convergence, Y/N | Yes | Yes | Yes |
| Cap | 679 | 876 | 688 |
| Service Time | 3.304 | 2.133 | 3.256 |
| HCM Lane V/C Ratio | 0.053 | 0.547 | 0.366 |
| HCM Control Delay | 8.6 | 12 | 11.2 |
| HCM Lane LOS | A | B | B |
| HCM 95th-tile Q | 0.2 | 3.4 | 1.7 |

Timings 6: Meridian Rd & Stapleton Dr

Existing Traffic
AM Peak Hour

| |  |  |  |  |  |  |  |  |  |  |  |  |
|----------------------|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations |  |  |  |  |  |  |  |  |  |  |  |  |
| Traffic Volume (vph) | 35 | 44 | 234 | 259 | 106 | 142 | 182 | 436 | 62 | 103 | 917 | 19 |
| Future Volume (vph) | 35 | 44 | 234 | 259 | 106 | 142 | 182 | 436 | 62 | 103 | 917 | 19 |
| Turn Type | Perm | NA | Perm | Perm | NA | Free | pm+pt | NA | Free | pm+pt | NA | Perm |
| Protected Phases | | 4 | | | 8 | | 5 | 2 | | 1 | 6 | |
| Permitted Phases | 4 | | 4 | 8 | | Free | 2 | | Free | 6 | | 6 |
| Detector Phase | 4 | 4 | 4 | 8 | 8 | | 5 | 2 | | 1 | 6 | 6 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | | 4.0 | 4.0 | | 4.0 | 4.0 | 4.0 |
| Minimum Split (s) | 9.0 | 9.0 | 9.0 | 9.0 | 9.0 | | 9.0 | 9.0 | | 9.0 | 9.0 | 9.0 |
| Total Split (s) | 40.0 | 40.0 | 40.0 | 40.0 | 40.0 | | 10.0 | 50.0 | | 10.0 | 50.0 | 50.0 |
| Total Split (%) | 40.0% | 40.0% | 40.0% | 40.0% | 40.0% | | 10.0% | 50.0% | | 10.0% | 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 | Lag |
| Lead-Lag Optimize? | | | | | | | Yes | Yes | | Yes | Yes | Yes |
| Recall Mode | None | None | None | None | None | | None | Max | | None | Max | Max |
| Act Effect Green (s) | 24.5 | 24.5 | 24.5 | 24.5 | 24.5 | 89.9 | 50.3 | 45.3 | 89.9 | 50.3 | 45.3 | 45.3 |
| Actuated g/C Ratio | 0.27 | 0.27 | 0.27 | 0.27 | 0.27 | 1.00 | 0.56 | 0.50 | 1.00 | 0.56 | 0.50 | 0.50 |
| v/c Ratio | 0.10 | 0.09 | 0.43 | 0.82 | 0.24 | 0.10 | 0.78 | 0.28 | 0.04 | 0.23 | 0.60 | 0.03 |
| Control Delay | 23.9 | 23.5 | 12.2 | 48.1 | 25.8 | 0.1 | 34.7 | 14.5 | 0.0 | 10.2 | 18.8 | 0.1 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 23.9 | 23.5 | 12.2 | 48.1 | 25.8 | 0.1 | 34.7 | 14.5 | 0.0 | 10.2 | 18.8 | 0.1 |
| LOS | C | C | B | D | C | A | C | B | A | B | B | A |
| Approach Delay | | 15.1 | | | 30.0 | | | 18.6 | | | 17.6 | |
| Approach LOS | | B | | | C | | | B | | | B | |

Intersection Summary

Cycle Length: 100

Actuated Cycle Length: 89.9

Natural Cycle: 55

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.82

Intersection Signal Delay: 20.1







Intersection LOS: C

Intersection Capacity Utilization 68.9%

ICU Level of Service C



















Analysis Period (min) 15

Splits and Phases: 6: Meridian Rd & Stapleton Dr

| | | |
|---|---|--|
|  |  |  |
| Ø1 | Ø2 | Ø4 |
| 10 s | 50 s | 40 s |
|  |  |  |
| Ø5 | Ø6 | Ø8 |
| 10 s | 50 s | 40 s |

Timings
16: Meridian Rd & Woodmen Hills Dr

Existing Traffic
AM Peak Hour

| |  |  |  |  |  |  |  |  |  |  |
|----------------------|---|---|---|---|---|---|--|---|---|---|
| Lane Group | EBL | EBT | WBL | WBT | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | |  | |  |  |  |  |  |  |  |
| Traffic Volume (vph) | 21 | 17 | 132 | 9 | 21 | 659 | 18 | 44 | 1396 | 8 |
| Future Volume (vph) | 21 | 17 | 132 | 9 | 21 | 659 | 18 | 44 | 1396 | 8 |
| Turn Type | Perm | NA | Perm | NA | pm+pt | NA | Perm | pm+pt | NA | Perm |
| Protected Phases | | 4 | | 8 | 5 | 2 | | 1 | 6 | |
| Permitted Phases | 4 | | 8 | | 2 | | 2 | 6 | | 6 |
| Detector Phase | 4 | 4 | 8 | 8 | 5 | 2 | 2 | 1 | 6 | 6 |
| Switch Phase | | | | | | | | | | |
| Minimum Initial (s) | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 |
| Minimum Split (s) | 9.0 | 9.0 | 9.0 | 9.0 | 9.0 | 9.0 | 9.0 | 9.0 | 9.0 | 9.0 |
| Total Split (s) | 35.0 | 35.0 | 35.0 | 35.0 | 10.0 | 55.0 | 55.0 | 10.0 | 55.0 | 55.0 |
| Total Split (%) | 35.0% | 35.0% | 35.0% | 35.0% | 10.0% | 55.0% | 55.0% | 10.0% | 55.0% | 55.0% |
| 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 |
| 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 Effect Green (s) | | 17.4 | | 17.4 | 53.6 | 50.8 | 50.8 | 54.5 | 52.7 | 52.7 |
| Actuated g/C Ratio | | 0.21 | | 0.21 | 0.64 | 0.61 | 0.61 | 0.65 | 0.63 | 0.63 |
| v/c Ratio | | 0.37 | | 0.74 | 0.12 | 0.32 | 0.02 | 0.11 | 0.77 | 0.01 |
| Control Delay | | 12.9 | | 47.1 | 7.6 | 10.4 | 0.1 | 6.6 | 17.0 | 0.0 |
| Queue Delay | | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | | 12.9 | | 47.1 | 7.6 | 10.4 | 0.1 | 6.6 | 17.0 | 0.0 |
| LOS | | B | | D | A | B | A | A | B | A |
| Approach Delay | | 12.9 | | 47.1 | | 10.1 | | | 16.6 | |
| Approach LOS | | B | | D | | B | | | B | |

Intersection Summary

Cycle Length: 100

Actuated Cycle Length: 83.9

Natural Cycle: 65

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.77

Intersection Signal Delay: 16.7


Intersection LOS: B

Intersection Capacity Utilization 64.1%

ICU Level of Service C

























Analysis Period (min) 15

Splits and Phases: 16: Meridian Rd & Woodmen Hills Dr

| | | |
|---|---|---|
|  |  |  |
| 10 s | 55 s | 35 s |
|  |  |  |
| 10 s | 55 s | 35 s |

Timings
163: Meridian & Woodmen

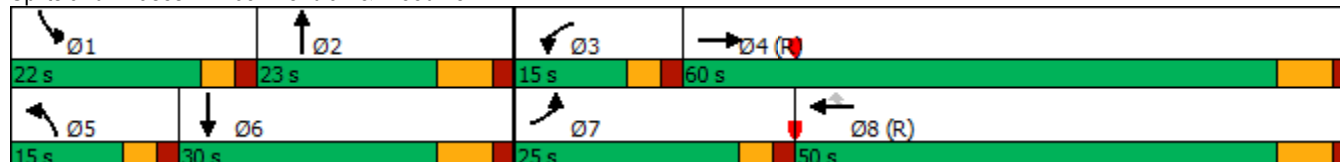
Existing Traffic
AM Peak Hour

| |  |  |  |  |  |  |  |  |  |  |  |  |
|----------------------|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations |  |  |  |  |  |  |  |  |  |  |  |  |
| Traffic Volume (vph) | 360 | 405 | 64 | 87 | 592 | 111 | 63 | 136 | 24 | 262 | 404 | 753 |
| Future Volume (vph) | 360 | 405 | 64 | 87 | 592 | 111 | 63 | 136 | 24 | 262 | 404 | 753 |
| Turn Type | Prot | NA | Free | Prot | NA | Perm | Prot | NA | Free | Prot | NA | Free |
| Protected Phases | 7 | 4 | | 3 | 8 | | 5 | 2 | | 1 | 6 | |
| Permitted Phases | | | Free | | | 8 | | | Free | | | Free |
| Detector Phase | 7 | 4 | | 3 | 8 | 8 | 5 | 2 | | 1 | 6 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 4.0 | 4.0 | | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | | 4.0 | 4.0 | |
| Minimum Split (s) | 9.0 | 21.0 | | 9.0 | 21.0 | 21.0 | 9.0 | 21.0 | | 9.0 | 21.0 | |
| Total Split (s) | 25.0 | 60.0 | | 15.0 | 50.0 | 50.0 | 15.0 | 23.0 | | 22.0 | 30.0 | |
| Total Split (%) | 20.8% | 50.0% | | 12.5% | 41.7% | 41.7% | 12.5% | 19.2% | | 18.3% | 25.0% | |
| Yellow Time (s) | 3.0 | 5.0 | | 3.0 | 5.0 | 5.0 | 3.0 | 5.0 | | 3.0 | 5.0 | |
| All-Red Time (s) | 2.0 | 2.0 | | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | | 2.0 | 2.0 | |
| Lost Time Adjust (s) | -1.0 | -1.0 | | -1.0 | -1.0 | -1.0 | -1.0 | -1.0 | | -1.0 | -1.0 | |
| Total Lost Time (s) | 4.0 | 6.0 | | 4.0 | 6.0 | 6.0 | 4.0 | 6.0 | | 4.0 | 6.0 | |
| Lead/Lag | Lead | Lag | | Lead | Lag | Lag | Lead | Lag | | Lead | Lag | |
| Lead-Lag Optimize? | Yes | Yes | | Yes | Yes | Yes | Yes | Yes | | Yes | Yes | |
| Recall Mode | Max | C-Max | | Max | C-Max | C-Max | Max | Max | | Max | Max | |
| Act Effect Green (s) | 21.0 | 54.0 | 120.0 | 11.0 | 44.0 | 44.0 | 11.0 | 17.0 | 120.0 | 18.0 | 24.0 | 120.0 |
| Actuated g/C Ratio | 0.18 | 0.45 | 1.00 | 0.09 | 0.37 | 0.37 | 0.09 | 0.14 | 1.00 | 0.15 | 0.20 | 1.00 |
| v/c Ratio | 0.60 | 0.25 | 0.04 | 0.31 | 0.50 | 0.17 | 0.20 | 0.27 | 0.02 | 0.59 | 0.66 | 0.55 |
| Control Delay | 50.4 | 21.0 | 0.0 | 53.8 | 31.2 | 0.5 | 52.2 | 47.6 | 0.0 | 52.9 | 49.5 | 1.4 |
| 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 | 50.4 | 21.0 | 0.0 | 53.8 | 31.2 | 0.5 | 52.2 | 47.6 | 0.0 | 52.9 | 49.5 | 1.4 |
| LOS | D | C | A | D | C | A | D | D | A | D | D | A |
| Approach Delay | | 32.2 | | | 29.4 | | | 43.8 | | | 24.6 | |
| Approach LOS | | C | | | C | | | D | | | C | |

Intersection Summary

























Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 0 (0%), Referenced to phase 4:EBT and 8:WBT, Start of Green, Master Intersection
 Natural Cycle: 60
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.66
 Intersection Signal Delay: 28.7
 Intersection Capacity Utilization 57.8%
 Analysis Period (min) 15

Splits and Phases: 163: Meridian & Woodmen



Timings 6: Meridian Rd & Stapleton Dr

Existing Traffic
PM Peak Hour

| |  |  |  |  |  |  |  |  |  |  |  |  |
|----------------------|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations |  |  |  |  |  |  |  |  |  |  |  |  |
| Traffic Volume (vph) | 6 | 30 | 115 | 161 | 44 | 85 | 188 | 881 | 205 | 111 | 520 | 8 |
| Future Volume (vph) | 6 | 30 | 115 | 161 | 44 | 85 | 188 | 881 | 205 | 111 | 520 | 8 |
| Turn Type | Perm | NA | Perm | Perm | NA | Free | pm+pt | NA | Free | pm+pt | NA | Perm |
| Protected Phases | | 4 | | | 8 | | 5 | 2 | | 1 | 6 | |
| Permitted Phases | 4 | | 4 | 8 | | Free | 2 | | Free | 6 | | 6 |
| Detector Phase | 4 | 4 | 4 | 8 | 8 | | 5 | 2 | | 1 | 6 | 6 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | | 4.0 | 4.0 | | 4.0 | 4.0 | 4.0 |
| Minimum Split (s) | 9.0 | 9.0 | 9.0 | 9.0 | 9.0 | | 9.0 | 9.0 | | 9.0 | 9.0 | 9.0 |
| Total Split (s) | 40.0 | 40.0 | 40.0 | 40.0 | 40.0 | | 10.0 | 50.0 | | 10.0 | 50.0 | 50.0 |
| Total Split (%) | 40.0% | 40.0% | 40.0% | 40.0% | 40.0% | | 10.0% | 50.0% | | 10.0% | 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 | Lag |
| Lead-Lag Optimize? | | | | | | | Yes | Yes | | Yes | Yes | Yes |
| Recall Mode | None | None | None | None | None | | None | Max | | None | Max | Max |
| Act Effect Green (s) | 14.4 | 14.4 | 14.4 | 14.4 | 14.4 | 79.6 | 51.2 | 47.3 | 79.6 | 50.1 | 45.1 | 45.1 |
| Actuated g/C Ratio | 0.18 | 0.18 | 0.18 | 0.18 | 0.18 | 1.00 | 0.64 | 0.59 | 1.00 | 0.63 | 0.57 | 0.57 |
| v/c Ratio | 0.02 | 0.09 | 0.30 | 0.65 | 0.13 | 0.05 | 0.35 | 0.46 | 0.14 | 0.29 | 0.26 | 0.01 |
| Control Delay | 25.7 | 26.7 | 7.8 | 42.4 | 27.3 | 0.1 | 7.2 | 11.2 | 0.2 | 7.1 | 9.8 | 0.0 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 25.7 | 26.7 | 7.8 | 42.4 | 27.3 | 0.1 | 7.2 | 11.2 | 0.2 | 7.1 | 9.8 | 0.0 |
| LOS | C | C | A | D | C | A | A | B | A | A | A | A |
| Approach Delay | | 12.3 | | | 27.7 | | | 8.8 | | | 9.2 | |
| Approach LOS | | B | | | C | | | A | | | A | |

Intersection Summary

Cycle Length: 100

Actuated Cycle Length: 79.6

Natural Cycle: 45

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.65

Intersection Signal Delay: 11.4

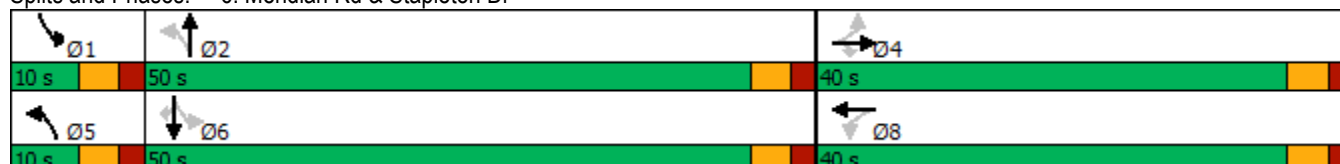
Intersection LOS: B

Intersection Capacity Utilization 58.6%

ICU Level of Service B



















Analysis Period (min) 15

Splits and Phases: 6: Meridian Rd & Stapleton Dr



Timings
16: Meridian Rd & Woodmen Hills Dr

Existing Traffic
PM Peak Hour

| |  |  |  |  |  |  |  |  |  |  |
|----------------------|---|---|---|---|---|---|---|---|---|---|
| Lane Group | EBL | EBT | WBL | WBT | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | |  | |  |  |  |  |  |  |  |
| Traffic Volume (vph) | 4 | 19 | 61 | 11 | 76 | 1268 | 100 | 22 | 765 | 17 |
| Future Volume (vph) | 4 | 19 | 61 | 11 | 76 | 1268 | 100 | 22 | 765 | 17 |
| Turn Type | Perm | NA | Perm | NA | pm+pt | NA | Perm | pm+pt | NA | Perm |
| Protected Phases | | 4 | | 8 | 5 | 2 | | 1 | 6 | |
| Permitted Phases | 4 | | 8 | | 2 | | 2 | 6 | | 6 |
| Detector Phase | 4 | 4 | 8 | 8 | 5 | 2 | 2 | 1 | 6 | 6 |
| Switch Phase | | | | | | | | | | |
| Minimum Initial (s) | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 |
| Minimum Split (s) | 9.0 | 9.0 | 9.0 | 9.0 | 9.0 | 9.0 | 9.0 | 9.0 | 9.0 | 9.0 |
| Total Split (s) | 35.0 | 35.0 | 35.0 | 35.0 | 10.0 | 55.0 | 55.0 | 10.0 | 55.0 | 55.0 |
| Total Split (%) | 35.0% | 35.0% | 35.0% | 35.0% | 10.0% | 55.0% | 55.0% | 10.0% | 55.0% | 55.0% |
| 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 |
| 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 Effect Green (s) | | 10.2 | | 10.4 | 57.8 | 57.2 | 57.2 | 55.8 | 53.3 | 53.3 |
| Actuated g/C Ratio | | 0.13 | | 0.13 | 0.75 | 0.74 | 0.74 | 0.72 | 0.69 | 0.69 |
| v/c Ratio | | 0.29 | | 0.48 | 0.15 | 0.52 | 0.09 | 0.07 | 0.32 | 0.02 |
| Control Delay | | 16.7 | | 38.6 | 4.1 | 8.0 | 1.9 | 4.0 | 7.6 | 0.0 |
| Queue Delay | | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | | 16.7 | | 38.6 | 4.1 | 8.0 | 1.9 | 4.0 | 7.6 | 0.0 |
| LOS | | B | | D | A | A | A | A | A | A |
| Approach Delay | | 16.7 | | 38.6 | | 7.4 | | | 7.3 | |
| Approach LOS | | B | | D | | A | | | A | |

Intersection Summary

Cycle Length: 100

Actuated Cycle Length: 77.3

Natural Cycle: 50

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.52

Intersection Signal Delay: 8.8


Intersection LOS: A

Intersection Capacity Utilization 62.0%

ICU Level of Service B

























Analysis Period (min) 15

Splits and Phases: 16: Meridian Rd & Woodmen Hills Dr

| | | |
|---|---|---|
|  |  |  |
| 10 s | 55 s | 35 s |
|  |  |  |
| 10 s | 55 s | 35 s |

Timings
163: Meridian & Woodmen

Existing Traffic
PM Peak Hour

| |  |  |  |  |  |  |  |  |  |  |  |  |
|----------------------|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations |  |  |  |  |  |  |  |  |  |  |  |  |
| Traffic Volume (vph) | 755 | 606 | 78 | 115 | 517 | 132 | 108 | 431 | 94 | 157 | 321 | 479 |
| Future Volume (vph) | 755 | 606 | 78 | 115 | 517 | 132 | 108 | 431 | 94 | 157 | 321 | 479 |
| Turn Type | Prot | NA | Free | Prot | NA | Perm | Prot | NA | Free | Prot | NA | Free |
| Protected Phases | 7 | 4 | | 3 | 8 | | 5 | 2 | | 1 | 6 | |
| Permitted Phases | | | Free | | | 8 | | | Free | | | Free |
| Detector Phase | 7 | 4 | | 3 | 8 | 8 | 5 | 2 | | 1 | 6 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 4.0 | 4.0 | | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | | 4.0 | 4.0 | |
| Minimum Split (s) | 9.0 | 21.0 | | 9.0 | 21.0 | 21.0 | 9.0 | 21.0 | | 9.0 | 21.0 | |
| Total Split (s) | 32.0 | 59.0 | | 16.0 | 43.0 | 43.0 | 15.0 | 28.0 | | 17.0 | 30.0 | |
| Total Split (%) | 26.7% | 49.2% | | 13.3% | 35.8% | 35.8% | 12.5% | 23.3% | | 14.2% | 25.0% | |
| Yellow Time (s) | 3.0 | 5.0 | | 3.0 | 5.0 | 5.0 | 3.0 | 5.0 | | 3.0 | 5.0 | |
| All-Red Time (s) | 2.0 | 2.0 | | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | | 2.0 | 2.0 | |
| Lost Time Adjust (s) | -2.0 | -3.0 | | -1.0 | -4.0 | -3.0 | -1.0 | -3.0 | | -1.0 | -3.0 | |
| Total Lost Time (s) | 3.0 | 4.0 | | 4.0 | 3.0 | 4.0 | 4.0 | 4.0 | | 4.0 | 4.0 | |
| Lead/Lag | Lead | Lag | | Lead | Lag | Lag | Lead | Lag | | Lead | Lag | |
| Lead-Lag Optimize? | Yes | Yes | | Yes | Yes | Yes | Yes | Yes | | Yes | Yes | |
| Recall Mode | Max | C-Max | | Max | C-Max | C-Max | Max | Max | | Max | Max | |
| Act Effect Green (s) | 29.0 | 55.0 | 120.0 | 12.0 | 40.0 | 39.0 | 11.0 | 24.0 | 120.0 | 13.0 | 26.0 | 120.0 |
| Actuated g/C Ratio | 0.24 | 0.46 | 1.00 | 0.10 | 0.33 | 0.32 | 0.09 | 0.20 | 1.00 | 0.11 | 0.22 | 1.00 |
| v/c Ratio | 0.95 | 0.39 | 0.05 | 0.41 | 0.53 | 0.25 | 0.34 | 0.61 | 0.06 | 0.42 | 0.42 | 0.30 |
| Control Delay | 66.0 | 22.3 | 0.1 | 54.5 | 34.3 | 4.4 | 54.4 | 48.0 | 0.1 | 53.9 | 42.5 | 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 | 66.0 | 22.3 | 0.1 | 54.5 | 34.3 | 4.4 | 54.4 | 48.0 | 0.1 | 53.9 | 42.5 | 0.5 |
| LOS | E | C | A | D | C | A | D | D | A | D | D | A |
| Approach Delay | | 44.0 | | | 32.2 | | | 42.0 | | | 23.3 | |
| Approach LOS | | D | | | C | | | D | | | C | |

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 0 (0%), Referenced to phase 4:EBT and 8:WBT, Start of Green

Natural Cycle: 70

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.95

Intersection Signal Delay: 36.1

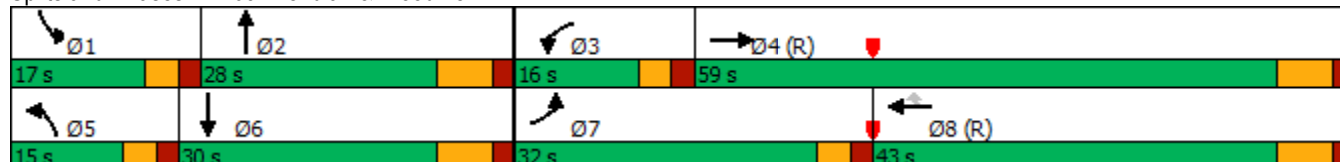
Intersection LOS: D

Intersection Capacity Utilization 65.6%

ICU Level of Service C

Analysis Period (min) 15

























Splits and Phases: 163: Meridian & Woodmen



Timings

1: Banning Lewis Pkwy & Briargate Pkwy

2040 Background Traffic
AM Peak Hour

| |  |  |  |  |  |  |  |  |  |  |  |  |
|----------------------|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations |  |  |  |  |  |  |  |  |  |  |  |  |
| Traffic Volume (vph) | 55 | 168 | 530 | 329 | 866 | 55 | 650 | 105 | 222 | 40 | 155 | 25 |
| Future Volume (vph) | 55 | 168 | 530 | 329 | 866 | 55 | 650 | 105 | 222 | 40 | 155 | 25 |
| Turn Type | Prot | NA | Free | Prot | NA | Free | Prot | NA | Free | Prot | NA | Free |
| Protected Phases | 5 | 2 | | 1 | 6 | | 3 | 8 | | 7 | 4 | |
| Permitted Phases | | | Free | | | Free | | | Free | | | Free |
| Detector Phase | 5 | 2 | | 1 | 6 | | 3 | 8 | | 7 | 4 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 4.0 | 4.0 | | 4.0 | 4.0 | | 4.0 | 4.0 | | 4.0 | 4.0 | |
| Minimum Split (s) | 9.0 | 9.0 | | 9.0 | 9.0 | | 9.0 | 9.0 | | 9.0 | 9.0 | |
| Total Split (s) | 13.0 | 39.0 | | 30.0 | 56.0 | | 27.0 | 30.0 | | 11.0 | 14.0 | |
| Total Split (%) | 11.8% | 35.5% | | 27.3% | 50.9% | | 24.5% | 27.3% | | 10.0% | 12.7% | |
| Yellow Time (s) | 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 | |
| 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 | | Lead | Lag | | Lead | Lag | | Lead | Lag | |
| Lead-Lag Optimize? | Yes | Yes | | Yes | Yes | | Yes | Yes | | Yes | Yes | |
| Recall Mode | None | None | | None | None | | None | None | | None | None | |
| Act Effect Green (s) | 6.9 | 18.9 | 82.6 | 13.5 | 28.5 | 82.6 | 21.2 | 28.7 | 82.6 | 6.0 | 8.5 | 82.6 |
| Actuated g/C Ratio | 0.08 | 0.23 | 1.00 | 0.16 | 0.35 | 1.00 | 0.26 | 0.35 | 1.00 | 0.07 | 0.10 | 1.00 |
| v/c Ratio | 0.20 | 0.22 | 0.35 | 0.60 | 0.73 | 0.04 | 0.75 | 0.09 | 0.15 | 0.17 | 0.45 | 0.02 |
| Control Delay | 40.9 | 26.5 | 0.6 | 38.4 | 28.3 | 0.0 | 36.6 | 23.7 | 0.2 | 42.0 | 42.1 | 0.0 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 40.9 | 26.5 | 0.6 | 38.4 | 28.3 | 0.0 | 36.6 | 23.7 | 0.2 | 42.0 | 42.1 | 0.0 |
| LOS | D | C | A | D | C | A | D | C | A | D | D | A |
| Approach Delay | | 9.3 | | | 29.7 | | | 26.8 | | | 37.4 | |
| Approach LOS | | A | | | C | | | C | | | D | |

Intersection Summary

Cycle Length: 110

Actuated Cycle Length: 82.6

Natural Cycle: 60

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.75

Intersection Signal Delay: 24.4

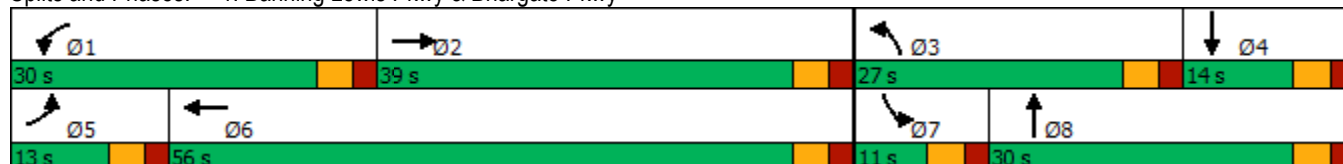
Intersection LOS: C

Intersection Capacity Utilization 66.8%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 1: Banning Lewis Pkwy & Briargate Pkwy

























HCM 6th Roundabout
3: Woodmen Hills Dr/Raygor Rd & Briargate Pkwy

2040 Background Traffic
AM Peak Hour

| Intersection | | | | | | | | |
|-------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|
| Intersection Delay, s/veh 6.8 | | | | | | | | |
| Intersection LOS A | | | | | | | | |
| Approach | EB | | WB | | NB | | SB | |
| Entry Lanes | 2 | | 2 | | 2 | | 2 | |
| Conflicting Circle Lanes | 2 | | 2 | | 2 | | 2 | |
| Adj Approach Flow, veh/h | 452 | | 1253 | | 53 | | 16 | |
| Demand Flow Rate, veh/h | 461 | | 1278 | | 54 | | 16 | |
| Vehicles Circulating, veh/h | 4 | | 58 | | 420 | | 1331 | |
| Vehicles Exiting, veh/h | 1343 | | 416 | | 45 | | 5 | |
| 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 | | 7.8 | | 4.5 | | 8.5 | |
| Approach LOS | A | | A | | A | | A | |
| Lane | Left | Right | Left | Right | Left | Right | Left | Right |
| Designated Moves | LT | TR | LT | TR | LT | R | LT | R |
| Assumed Moves | LT | TR | LT | TR | LT | R | LT | R |
| RT Channelized | | | | | | | | |
| Lane Util | 0.471 | 0.529 | 0.470 | 0.530 | 1.000 | 0.000 | 0.250 | 0.750 |
| Follow-Up Headway, s | 2.667 | 2.535 | 2.667 | 2.535 | 2.667 | 2.535 | 2.667 | 2.535 |
| Critical Headway, s | 4.645 | 4.328 | 4.645 | 4.328 | 4.645 | 4.328 | 4.645 | 4.328 |
| Entry Flow, veh/h | 217 | 244 | 601 | 677 | 54 | 0 | 4 | 12 |
| Cap Entry Lane, veh/h | 1345 | 1415 | 1280 | 1352 | 917 | 994 | 397 | 458 |
| Entry HV Adj Factor | 0.979 | 0.982 | 0.980 | 0.981 | 0.981 | 1.000 | 1.000 | 1.000 |
| Flow Entry, veh/h | 212 | 240 | 589 | 664 | 53 | 0 | 4 | 12 |
| Cap Entry, veh/h | 1316 | 1389 | 1254 | 1326 | 900 | 994 | 397 | 458 |
| V/C Ratio | 0.161 | 0.172 | 0.470 | 0.501 | 0.059 | 0.000 | 0.010 | 0.026 |
| Control Delay, s/veh | 4.1 | 4.0 | 7.7 | 7.9 | 4.5 | 3.6 | 9.2 | 8.2 |
| LOS | A | A | A | A | A | A | A | A |
| 95th %tile Queue, veh | 1 | 1 | 3 | 3 | 0 | 0 | 0 | 0 |

Timings
5: Towner Ave & Briargate Pkwy

2040 Background Traffic
AM Peak Hour

| |  |  |  |  |  |  |  |  |  |  |  |
|----------------------|---|---|---|---|---|---|---|---|---|---|---|
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | SBL | SBT | SBR |
| Lane Configurations |  |  |  |  |  |  |  |  |  |  |  |
| Traffic Volume (vph) | 252 | 121 | 15 | 5 | 872 | 112 | 50 | 19 | 67 | 19 | 268 |
| Future Volume (vph) | 252 | 121 | 15 | 5 | 872 | 112 | 50 | 19 | 67 | 19 | 268 |
| Turn Type | pm+pt | NA | Perm | pm+pt | NA | Perm | Perm | NA | Perm | NA | Perm |
| Protected Phases | 5 | 2 | | 1 | 6 | | | 8 | | 4 | |
| Permitted Phases | 2 | | 2 | 6 | | 6 | 8 | | 4 | | 4 |
| Detector Phase | 5 | 2 | 2 | 1 | 6 | 6 | 8 | 8 | 4 | 4 | 4 |
| Switch Phase | | | | | | | | | | | |
| Minimum Initial (s) | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 |
| Minimum Split (s) | 8.0 | 20.0 | 20.0 | 8.0 | 20.0 | 20.0 | 20.0 | 20.0 | 20.0 | 20.0 | 20.0 |
| Total Split (s) | 10.0 | 65.0 | 65.0 | 10.0 | 65.0 | 65.0 | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 |
| Total Split (%) | 10.0% | 65.0% | 65.0% | 10.0% | 65.0% | 65.0% | 25.0% | 25.0% | 25.0% | 25.0% | 25.0% |
| Yellow Time (s) | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 |
| All-Red Time (s) | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 |
| Lead/Lag | Lead | Lag | Lag | Lead | Lag | Lag | | | | | |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | Yes | Yes | | | | | |
| Recall Mode | None | C-Max | C-Max | None | C-Max | C-Max | None | None | None | None | None |
| Act Effect Green (s) | 80.3 | 78.7 | 78.7 | 74.1 | 68.5 | 68.5 | 11.3 | 11.3 | 11.3 | 11.3 | 11.3 |
| Actuated g/C Ratio | 0.80 | 0.79 | 0.79 | 0.74 | 0.68 | 0.68 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| v/c Ratio | 0.54 | 0.05 | 0.01 | 0.01 | 0.38 | 0.11 | 0.34 | 0.15 | 0.46 | 0.09 | 0.73 |
| Control Delay | 6.9 | 3.6 | 0.0 | 3.2 | 7.9 | 1.7 | 44.7 | 28.0 | 49.3 | 37.8 | 20.4 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 6.9 | 3.6 | 0.0 | 3.2 | 7.9 | 1.7 | 44.7 | 28.0 | 49.3 | 37.8 | 20.4 |
| LOS | A | A | A | A | A | A | D | C | D | D | C |
| Approach Delay | | 5.6 | | | 7.2 | | | 38.4 | | 26.8 | |
| Approach LOS | | A | | | A | | | D | | C | |

Intersection Summary

Cycle Length: 100

Actuated Cycle Length: 100

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

Natural Cycle: 60

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.73

Intersection Signal Delay: 12.1

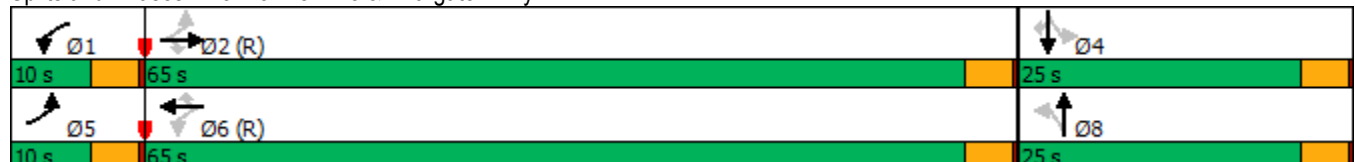
Intersection LOS: B

Intersection Capacity Utilization 58.4%

ICU Level of Service B

























Analysis Period (min) 15

Splits and Phases: 5: Towner Ave & Briargate Pkwy



Timings 6: Meridian Rd & Briargate Pkwy/Stapleton Dr

2040 Background Traffic
AM Peak Hour

| |  |  |  |  |  |  |  |  |  |  |  |  |
|----------------------|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations |  |  |  |  |  |  |  |  |  |  |  |  |
| Traffic Volume (vph) | 147 | 753 | 225 | 405 | 1270 | 156 | 255 | 225 | 202 | 51 | 741 | 343 |
| Future Volume (vph) | 147 | 753 | 225 | 405 | 1270 | 156 | 255 | 225 | 202 | 51 | 741 | 343 |
| Turn Type | Prot | NA | Perm | Prot | NA | Free | Prot | NA | Free | pm+pt | NA | Perm |
| Protected Phases | 7 | 4 | | 3 | 8 | | 5 | 2 | | 1 | 6 | |
| Permitted Phases | | | 4 | | | Free | | | Free | 6 | | 6 |
| Detector Phase | 7 | 4 | 4 | 3 | 8 | | 5 | 2 | | 1 | 6 | 6 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | | 4.0 | 4.0 | | 4.0 | 4.0 | 4.0 |
| Minimum Split (s) | 9.0 | 9.0 | 9.0 | 9.0 | 9.0 | | 9.0 | 9.0 | | 9.0 | 9.0 | 9.0 |
| Total Split (s) | 13.0 | 34.0 | 34.0 | 22.0 | 43.0 | | 15.0 | 34.0 | | 10.0 | 29.0 | 29.0 |
| Total Split (%) | 13.0% | 34.0% | 34.0% | 22.0% | 43.0% | | 15.0% | 34.0% | | 10.0% | 29.0% | 29.0% |
| 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 | Lag | Lead | Lag | | Lead | 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 Effect Green (s) | 7.8 | 30.1 | 30.1 | 15.7 | 38.0 | 99.2 | 9.9 | 30.5 | 99.2 | 28.5 | 23.5 | 23.5 |
| Actuated g/C Ratio | 0.08 | 0.30 | 0.30 | 0.16 | 0.38 | 1.00 | 0.10 | 0.31 | 1.00 | 0.29 | 0.24 | 0.24 |
| v/c Ratio | 0.56 | 0.72 | 0.38 | 0.76 | 0.96 | 0.10 | 0.76 | 0.21 | 0.13 | 0.15 | 0.90 | 0.66 |
| Control Delay | 52.7 | 35.7 | 9.0 | 49.6 | 46.9 | 0.1 | 59.0 | 27.0 | 0.2 | 20.8 | 52.1 | 21.2 |
| 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 | 52.7 | 35.7 | 9.0 | 49.6 | 46.9 | 0.1 | 59.0 | 27.0 | 0.2 | 20.8 | 52.1 | 21.2 |
| LOS | D | D | A | D | D | A | E | C | A | C | D | C |
| Approach Delay | | 32.6 | | | 43.5 | | | 31.0 | | | 41.4 | |
| Approach LOS | | C | | | D | | | C | | | D | |

Intersection Summary

Cycle Length: 100

Actuated Cycle Length: 99.2

Natural Cycle: 80

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.96

Intersection Signal Delay: 38.6

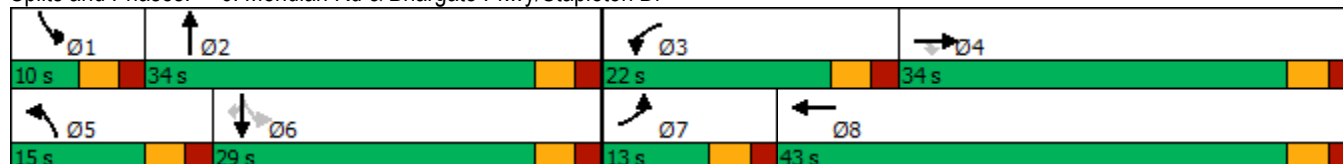
Intersection LOS: D

Intersection Capacity Utilization 83.7%

ICU Level of Service E



















Analysis Period (min) 15

Splits and Phases: 6: Meridian Rd & Briargate Pkwy/Stapleton Dr



Timings
16: Meridian Rd & Woodmen Hills Dr

2040 Background Traffic
AM Peak Hour

| |  |  |  |  |  |  |  |  |  |  |
|----------------------|---|---|---|---|---|---|--|---|---|---|
| Lane Group | EBL | EBT | WBL | WBT | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | |  | |  |  |  |  |  |  |  |
| Traffic Volume (vph) | 18 | 33 | 99 | 53 | 16 | 630 | 13 | 33 | 1331 | 7 |
| Future Volume (vph) | 18 | 33 | 99 | 53 | 16 | 630 | 13 | 33 | 1331 | 7 |
| Turn Type | Perm | NA | Perm | NA | pm+pt | NA | Perm | pm+pt | NA | Perm |
| Protected Phases | | 4 | | 8 | 5 | 2 | | 1 | 6 | |
| Permitted Phases | 4 | | 8 | | 2 | | 2 | 6 | | 6 |
| Detector Phase | 4 | 4 | 8 | 8 | 5 | 2 | 2 | 1 | 6 | 6 |
| Switch Phase | | | | | | | | | | |
| Minimum Initial (s) | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 |
| Minimum Split (s) | 9.0 | 9.0 | 9.0 | 9.0 | 9.0 | 9.0 | 9.0 | 9.0 | 9.0 | 9.0 |
| Total Split (s) | 30.0 | 30.0 | 30.0 | 30.0 | 10.0 | 60.0 | 60.0 | 10.0 | 60.0 | 60.0 |
| Total Split (%) | 30.0% | 30.0% | 30.0% | 30.0% | 10.0% | 60.0% | 60.0% | 10.0% | 60.0% | 60.0% |
| 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 |
| 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 | None | None | None | None | None |
| Act Effect Green (s) | | 15.5 | | 15.5 | 36.3 | 34.9 | 34.9 | 36.3 | 34.9 | 34.9 |
| Actuated g/C Ratio | | 0.24 | | 0.24 | 0.56 | 0.54 | 0.54 | 0.56 | 0.54 | 0.54 |
| v/c Ratio | | 0.29 | | 0.55 | 0.07 | 0.34 | 0.02 | 0.07 | 0.71 | 0.01 |
| Control Delay | | 16.4 | | 31.0 | 6.4 | 9.7 | 0.0 | 6.2 | 14.5 | 0.0 |
| Queue Delay | | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | | 16.4 | | 31.0 | 6.4 | 9.7 | 0.0 | 6.2 | 14.5 | 0.0 |
| LOS | | B | | C | A | A | A | A | B | A |
| Approach Delay | | 16.4 | | 31.0 | | 9.5 | | | 14.2 | |
| Approach LOS | | B | | C | | A | | | B | |

Intersection Summary

Cycle Length: 100

Actuated Cycle Length: 64.6

Natural Cycle: 55

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.71

Intersection Signal Delay: 14.4

Intersection LOS: B

Intersection Capacity Utilization 62.1%

ICU Level of Service B

























Analysis Period (min) 15

Splits and Phases: 16: Meridian Rd & Woodmen Hills Dr

| | | |
|---|---|---|
|  |  |  |
| 10 s | 60 s | 30 s |
|  |  |  |
| 10 s | 60 s | 30 s |

Timings
163: Meridian Rd & Woodmen Rd

2040 Background Traffic
AM Peak Hour

| |  |  |  |  |  |  |  |  |  |  |  |  |
|----------------------|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations |  |  |  |  |  |  |  |  |  |  |  |  |
| Traffic Volume (vph) | 457 | 520 | 175 | 150 | 884 | 144 | 328 | 287 | 100 | 229 | 785 | 1041 |
| Future Volume (vph) | 457 | 520 | 175 | 150 | 884 | 144 | 328 | 287 | 100 | 229 | 785 | 1041 |
| Turn Type | Prot | NA | Free | Prot | NA | Perm | Prot | NA | Free | Prot | NA | Free |
| Protected Phases | 5 | 2 | | 1 | 6 | | 3 | 8 | | 7 | 4 | |
| Permitted Phases | | | Free | | | 6 | | | Free | | | Free |
| Detector Phase | 5 | 2 | | 1 | 6 | 6 | 3 | 8 | | 7 | 4 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 5.0 | 5.0 | | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | | 5.0 | 5.0 | |
| Minimum Split (s) | 10.0 | 11.5 | | 10.0 | 11.5 | 11.5 | 10.0 | 11.5 | | 10.0 | 11.5 | |
| Total Split (s) | 22.0 | 45.0 | | 17.0 | 40.0 | 40.0 | 17.0 | 35.0 | | 23.0 | 41.0 | |
| Total Split (%) | 18.3% | 37.5% | | 14.2% | 33.3% | 33.3% | 14.2% | 29.2% | | 19.2% | 34.2% | |
| Yellow Time (s) | 3.0 | 4.5 | | 3.0 | 4.5 | 4.5 | 3.0 | 4.5 | | 3.0 | 4.5 | |
| All-Red Time (s) | 2.0 | 2.0 | | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | | 2.0 | 2.0 | |
| Lost Time Adjust (s) | -1.0 | -1.0 | | -1.0 | -1.0 | -1.0 | -1.0 | -1.0 | | -1.0 | -1.0 | |
| Total Lost Time (s) | 4.0 | 5.5 | | 4.0 | 5.5 | 5.5 | 4.0 | 5.5 | | 4.0 | 5.5 | |
| Lead/Lag | Lead | Lag | | Lead | Lag | Lag | Lead | Lag | | Lead | Lag | |
| Lead-Lag Optimize? | Yes | Yes | | Yes | Yes | Yes | Yes | Yes | | Yes | Yes | |
| Recall Mode | None | Min | | None | Min | Min | None | None | | None | None | |
| Act Effect Green (s) | 18.1 | 40.2 | 115.3 | 11.2 | 33.3 | 33.3 | 13.0 | 30.7 | 115.3 | 14.2 | 31.8 | 115.3 |
| Actuated g/C Ratio | 0.16 | 0.35 | 1.00 | 0.10 | 0.29 | 0.29 | 0.11 | 0.27 | 1.00 | 0.12 | 0.28 | 1.00 |
| v/c Ratio | 0.90 | 0.43 | 0.11 | 0.46 | 0.88 | 0.26 | 0.86 | 0.31 | 0.06 | 0.56 | 0.82 | 0.67 |
| Control Delay | 69.0 | 30.9 | 0.1 | 54.6 | 50.9 | 4.5 | 73.3 | 35.5 | 0.1 | 53.2 | 47.0 | 2.3 |
| 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 | 69.0 | 30.9 | 0.1 | 54.6 | 50.9 | 4.5 | 73.3 | 35.5 | 0.1 | 53.2 | 47.0 | 2.3 |
| LOS | E | C | A | D | D | A | E | D | A | D | D | A |
| Approach Delay | | 41.7 | | | 45.7 | | | 47.9 | | | 25.0 | |
| Approach LOS | | D | | | D | | | D | | | C | |

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 115.3

Natural Cycle: 80

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.90

Intersection Signal Delay: 36.8

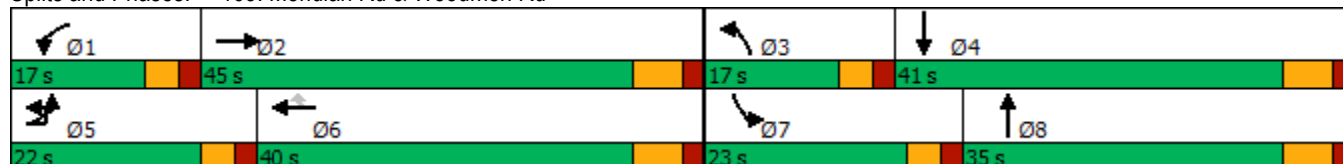
Intersection LOS: D

Intersection Capacity Utilization 84.8%

ICU Level of Service E

Analysis Period (min) 15

























Splits and Phases: 163: Meridian Rd & Woodmen Rd



Timings

1: Banning Lewis Pkwy & Briargate Pkwy

2040 Background Traffic
PM Peak Hour

| |  |  |  |  |  |  |  |  |  |  |  |  |
|----------------------|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations |  |  |  |  |  |  |  |  |  |  |  |  |
| Traffic Volume (vph) | 135 | 901 | 595 | 153 | 403 | 135 | 685 | 340 | 399 | 130 | 335 | 130 |
| Future Volume (vph) | 135 | 901 | 595 | 153 | 403 | 135 | 685 | 340 | 399 | 130 | 335 | 130 |
| Turn Type | Prot | NA | Free | Prot | NA | Free | Prot | NA | Free | Prot | NA | Free |
| Protected Phases | 5 | 2 | | 1 | 6 | | 3 | 8 | | 7 | 4 | |
| Permitted Phases | | | Free | | | Free | | | Free | | | Free |
| Detector Phase | 5 | 2 | | 1 | 6 | | 3 | 8 | | 7 | 4 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 4.0 | 4.0 | | 4.0 | 4.0 | | 4.0 | 4.0 | | 4.0 | 4.0 | |
| Minimum Split (s) | 9.0 | 9.0 | | 9.0 | 9.0 | | 9.0 | 9.0 | | 9.0 | 9.0 | |
| Total Split (s) | 13.0 | 46.0 | | 23.0 | 56.0 | | 24.0 | 30.0 | | 11.0 | 17.0 | |
| Total Split (%) | 11.8% | 41.8% | | 20.9% | 50.9% | | 21.8% | 27.3% | | 10.0% | 15.5% | |
| Yellow Time (s) | 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 | |
| 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 | | Lead | Lag | | Lead | Lag | | Lead | Lag | |
| Lead-Lag Optimize? | Yes | Yes | | Yes | Yes | | Yes | Yes | | Yes | Yes | |
| Recall Mode | None | None | | None | None | | None | None | | None | None | |
| Act Effect Green (s) | 7.8 | 30.2 | 91.2 | 9.6 | 32.0 | 91.2 | 19.2 | 25.2 | 91.2 | 6.1 | 12.0 | 91.2 |
| Actuated g/C Ratio | 0.09 | 0.33 | 1.00 | 0.11 | 0.35 | 1.00 | 0.21 | 0.28 | 1.00 | 0.07 | 0.13 | 1.00 |
| v/c Ratio | 0.49 | 0.78 | 0.40 | 0.43 | 0.34 | 0.09 | 0.97 | 0.37 | 0.27 | 0.60 | 0.76 | 0.09 |
| Control Delay | 47.9 | 32.8 | 0.7 | 43.5 | 22.0 | 0.1 | 64.8 | 29.6 | 0.4 | 55.6 | 51.3 | 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 | 47.9 | 32.8 | 0.7 | 43.5 | 22.0 | 0.1 | 64.8 | 29.6 | 0.4 | 55.6 | 51.3 | 0.1 |
| LOS | D | C | A | D | C | A | E | C | A | E | D | A |
| Approach Delay | | 22.2 | | | 22.4 | | | 38.0 | | | 41.1 | |
| Approach LOS | | C | | | C | | | D | | | D | |

Intersection Summary

Cycle Length: 110

Actuated Cycle Length: 91.2

Natural Cycle: 65

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.97

Intersection Signal Delay: 30.0

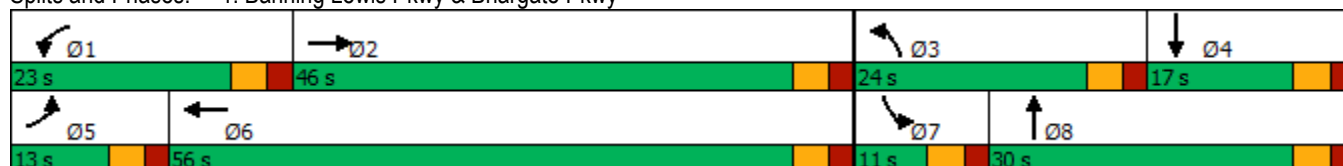
Intersection LOS: C

Intersection Capacity Utilization 74.7%

ICU Level of Service D

Analysis Period (min) 15

Splits and Phases: 1: Banning Lewis Pkwy & Briargate Pkwy

























HCM 6th Roundabout
3: Woodmen Hills Dr/Raygor Rd & Briargate Pkwy

2040 Background Traffic
PM Peak Hour

| Intersection | | | | | | | | | |
|-------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|--|
| Intersection Delay, s/veh 7.7 | | | | | | | | | |
| Intersection LOS A | | | | | | | | | |
| Approach | EB | | WB | | NB | | SB | | |
| Entry Lanes | 2 | | 2 | | 2 | | 2 | | |
| Conflicting Circle Lanes | 2 | | 2 | | 2 | | 2 | | |
| Adj Approach Flow, veh/h | 1505 | | 684 | | 41 | | 10 | | |
| Demand Flow Rate, veh/h | 1535 | | 698 | | 42 | | 10 | | |
| Vehicles Circulating, veh/h | 3 | | 55 | | 1490 | | 735 | | |
| Vehicles Exiting, veh/h | 742 | | 1477 | | 48 | | 18 | | |
| Ped Vol Crossing Leg, #/h | 0 | | 0 | | 0 | | 0 | | |
| Ped Cap Adj | 1.000 | | 1.000 | | 1.000 | | 1.000 | | |
| Approach Delay, s/veh | 8.7 | | 5.1 | | 12.9 | | 5.0 | | |
| Approach LOS | A | | A | | B | | A | | |
| Lane | Left | Right | Left | Right | Left | Right | Left | Right | |
| Designated Moves | LT | TR | LT | TR | LT | R | LT | R | |
| Assumed Moves | LT | TR | LT | TR | LT | R | LT | R | |
| RT Channelized | | | | | | | | | |
| Lane Util | 0.470 | 0.530 | 0.470 | 0.530 | 1.000 | 0.000 | 0.300 | 0.700 | |
| Follow-Up Headway, s | 2.667 | 2.535 | 2.667 | 2.535 | 2.667 | 2.535 | 2.667 | 2.535 | |
| Critical Headway, s | 4.645 | 4.328 | 4.645 | 4.328 | 4.645 | 4.328 | 4.645 | 4.328 | |
| Entry Flow, veh/h | 721 | 814 | 328 | 370 | 42 | 0 | 3 | 7 | |
| Cap Entry Lane, veh/h | 1346 | 1417 | 1283 | 1355 | 343 | 400 | 687 | 760 | |
| Entry HV Adj Factor | 0.981 | 0.980 | 0.981 | 0.980 | 0.976 | 1.000 | 1.000 | 1.000 | |
| Flow Entry, veh/h | 707 | 798 | 322 | 363 | 41 | 0 | 3 | 7 | |
| Cap Entry, veh/h | 1321 | 1388 | 1258 | 1329 | 335 | 400 | 687 | 760 | |
| V/C Ratio | 0.536 | 0.575 | 0.256 | 0.273 | 0.123 | 0.000 | 0.004 | 0.009 | |
| Control Delay, s/veh | 8.5 | 8.9 | 5.1 | 5.1 | 12.9 | 9.0 | 5.3 | 4.8 | |
| LOS | A | A | A | A | B | A | A | A | |
| 95th %tile Queue, veh | 3 | 4 | 1 | 1 | 0 | 0 | 0 | 0 | |

Timings 5: Towner Ave & Briargate Pkwy

2040 Background Traffic
PM Peak Hour

| |  |  |  |  |  |  |  |  |  |  |  |
|----------------------|---|---|---|---|---|---|---|---|---|---|---|
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | SBL | SBT | SBR |
| Lane Configurations |  |  |  |  |  |  |  |  |  |  |  |
| Traffic Volume (vph) | 299 | 1027 | 50 | 29 | 434 | 131 | 25 | 2 | 108 | 2 | 191 |
| Future Volume (vph) | 299 | 1027 | 50 | 29 | 434 | 131 | 25 | 2 | 108 | 2 | 191 |
| Turn Type | pm+pt | NA | Perm | pm+pt | NA | Perm | Perm | NA | Perm | NA | Perm |
| Protected Phases | 5 | 2 | | 1 | 6 | | | 8 | | 4 | |
| Permitted Phases | 2 | | 2 | 6 | | 6 | 8 | | 4 | | 4 |
| Detector Phase | 5 | 2 | 2 | 1 | 6 | 6 | 8 | 8 | 4 | 4 | 4 |
| Switch Phase | | | | | | | | | | | |
| Minimum Initial (s) | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 |
| Minimum Split (s) | 8.0 | 20.0 | 20.0 | 8.0 | 20.0 | 20.0 | 20.0 | 20.0 | 20.0 | 20.0 | 20.0 |
| Total Split (s) | 10.0 | 65.0 | 65.0 | 10.0 | 65.0 | 65.0 | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 |
| Total Split (%) | 10.0% | 65.0% | 65.0% | 10.0% | 65.0% | 65.0% | 25.0% | 25.0% | 25.0% | 25.0% | 25.0% |
| Yellow Time (s) | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 |
| All-Red Time (s) | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 |
| Lead/Lag | Lead | Lag | Lag | Lead | Lag | Lag | | | | | |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | Yes | Yes | | | | | |
| Recall Mode | None | C-Max | C-Max | None | C-Max | C-Max | None | None | None | None | None |
| Act Effect Green (s) | 77.6 | 72.2 | 72.2 | 71.5 | 65.5 | 65.5 | 13.7 | 13.7 | 13.7 | 13.7 | 13.7 |
| Actuated g/C Ratio | 0.78 | 0.72 | 0.72 | 0.72 | 0.66 | 0.66 | 0.14 | 0.14 | 0.14 | 0.14 | 0.14 |
| v/c Ratio | 0.43 | 0.42 | 0.05 | 0.08 | 0.20 | 0.13 | 0.14 | 0.10 | 0.61 | 0.01 | 0.52 |
| Control Delay | 5.6 | 7.5 | 2.1 | 3.9 | 7.7 | 1.7 | 37.1 | 15.7 | 53.2 | 33.5 | 10.2 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 5.6 | 7.5 | 2.1 | 3.9 | 7.7 | 1.7 | 37.1 | 15.7 | 53.2 | 33.5 | 10.2 |
| LOS | A | A | A | A | A | A | D | B | D | C | B |
| Approach Delay | | 6.9 | | | 6.2 | | | 26.8 | | 25.8 | |
| Approach LOS | | A | | | A | | | C | | C | |

Intersection Summary

Cycle Length: 100

Actuated Cycle Length: 100

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

Natural Cycle: 50

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.61

Intersection Signal Delay: 9.6

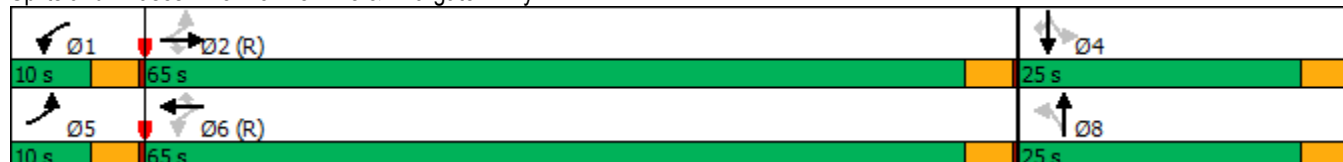
Intersection LOS: A

Intersection Capacity Utilization 54.4%

ICU Level of Service A

























Analysis Period (min) 15

Splits and Phases: 5: Towner Ave & Briargate Pkwy



Timings
6: Meridian Rd & Briargate Pkwy

2040 Background Traffic
PM Peak Hour

| |  |  |  |  |  |  |  |  |  |  |  |  |
|----------------------|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations |  |  |  |  |  |  |  |  |  |  |  |  |
| Traffic Volume (vph) | 450 | 1091 | 265 | 332 | 890 | 184 | 315 | 457 | 450 | 92 | 265 | 275 |
| Future Volume (vph) | 450 | 1091 | 265 | 332 | 890 | 184 | 315 | 457 | 450 | 92 | 265 | 275 |
| Turn Type | Prot | NA | Perm | Prot | NA | Free | Prot | NA | Free | pm+pt | NA | Perm |
| Protected Phases | 7 | 4 | | 3 | 8 | | 5 | 2 | | 1 | 6 | |
| Permitted Phases | | | 4 | | | Free | | | Free | 6 | | 6 |
| Detector Phase | 7 | 4 | 4 | 3 | 8 | | 5 | 2 | | 1 | 6 | 6 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | | 4.0 | 4.0 | | 4.0 | 4.0 | 4.0 |
| Minimum Split (s) | 9.0 | 9.0 | 9.0 | 9.0 | 9.0 | | 9.0 | 9.0 | | 9.0 | 9.0 | 9.0 |
| Total Split (s) | 22.0 | 42.0 | 42.0 | 18.0 | 38.0 | | 20.0 | 29.0 | | 11.0 | 20.0 | 20.0 |
| Total Split (%) | 22.0% | 42.0% | 42.0% | 18.0% | 38.0% | | 20.0% | 29.0% | | 11.0% | 20.0% | 20.0% |
| 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 | Lag | Lead | Lag | | Lead | 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 Effect Green (s) | 15.9 | 34.2 | 34.2 | 12.4 | 30.8 | 92.4 | 13.2 | 22.1 | 92.4 | 18.4 | 12.3 | 12.3 |
| Actuated g/C Ratio | 0.17 | 0.37 | 0.37 | 0.13 | 0.33 | 1.00 | 0.14 | 0.24 | 1.00 | 0.20 | 0.13 | 0.13 |
| v/c Ratio | 0.78 | 0.85 | 0.37 | 0.73 | 0.77 | 0.12 | 0.66 | 0.55 | 0.29 | 0.40 | 0.57 | 0.62 |
| Control Delay | 48.0 | 34.7 | 6.8 | 50.2 | 33.4 | 0.2 | 45.6 | 35.1 | 0.5 | 29.4 | 43.7 | 11.5 |
| 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 | 48.0 | 34.7 | 6.8 | 50.2 | 33.4 | 0.2 | 45.6 | 35.1 | 0.5 | 29.4 | 43.7 | 11.5 |
| LOS | D | C | A | D | C | A | D | D | A | C | D | B |
| Approach Delay | | 33.9 | | | 33.0 | | | 25.0 | | | 27.6 | |
| Approach LOS | | C | | | C | | | C | | | C | |

Intersection Summary

Cycle Length: 100

Actuated Cycle Length: 92.4

Natural Cycle: 65

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.85

Intersection Signal Delay: 30.7

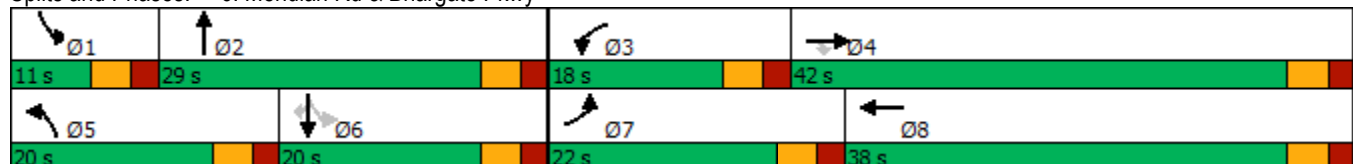
Intersection LOS: C

Intersection Capacity Utilization 74.0%

ICU Level of Service D



















Analysis Period (min) 15

Splits and Phases: 6: Meridian Rd & Briargate Pkwy



Timings
16: Meridian Rd & Woodmen Hills Dr/Raygor Rd

2040 Background Traffic
PM Peak Hour

| |  |  |  |  |  |  |  |  |  |  |
|----------------------|---|---|---|---|---|---|--|---|---|---|
| Lane Group | EBL | EBT | WBL | WBT | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | |  | |  |  |  |  |  |  |  |
| Traffic Volume (vph) | 3 | 50 | 46 | 28 | 57 | 1213 | 75 | 16 | 832 | 14 |
| Future Volume (vph) | 3 | 50 | 46 | 28 | 57 | 1213 | 75 | 16 | 832 | 14 |
| Turn Type | Perm | NA | Perm | NA | pm+pt | NA | Perm | pm+pt | NA | Perm |
| Protected Phases | | 4 | | 8 | 5 | 2 | | 1 | 6 | |
| Permitted Phases | 4 | | 8 | | 2 | | 2 | 6 | | 6 |
| Detector Phase | 4 | 4 | 8 | 8 | 5 | 2 | 2 | 1 | 6 | 6 |
| Switch Phase | | | | | | | | | | |
| Minimum Initial (s) | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 |
| Minimum Split (s) | 9.0 | 9.0 | 9.0 | 9.0 | 9.0 | 9.0 | 9.0 | 9.0 | 9.0 | 9.0 |
| Total Split (s) | 35.0 | 35.0 | 35.0 | 35.0 | 10.0 | 55.0 | 55.0 | 10.0 | 55.0 | 55.0 |
| Total Split (%) | 35.0% | 35.0% | 35.0% | 35.0% | 10.0% | 55.0% | 55.0% | 10.0% | 55.0% | 55.0% |
| 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 |
| 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 | None | None | None | None | None |
| Act Effect Green (s) | | 10.0 | | 10.1 | 28.1 | 30.2 | 30.2 | 26.2 | 26.5 | 26.5 |
| Actuated g/C Ratio | | 0.22 | | 0.22 | 0.61 | 0.66 | 0.66 | 0.57 | 0.58 | 0.58 |
| v/c Ratio | | 0.24 | | 0.25 | 0.12 | 0.53 | 0.07 | 0.04 | 0.41 | 0.02 |
| Control Delay | | 16.3 | | 22.6 | 4.6 | 7.9 | 2.1 | 4.3 | 9.6 | 0.0 |
| Queue Delay | | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | | 16.3 | | 22.6 | 4.6 | 7.9 | 2.1 | 4.3 | 9.6 | 0.0 |
| LOS | | B | | C | A | A | A | A | A | A |
| Approach Delay | | 16.3 | | 22.6 | | 7.5 | | | 9.3 | |
| Approach LOS | | B | | C | | A | | | A | |

Intersection Summary

Cycle Length: 100

Actuated Cycle Length: 45.8

Natural Cycle: 45

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.53

Intersection Signal Delay: 9.0







Intersection LOS: A

Intersection Capacity Utilization 60.4%

ICU Level of Service B

























Analysis Period (min) 15

Splits and Phases: 16: Meridian Rd & Woodmen Hills Dr/Raygor Rd

| | | |
|---|---|---|
|  |  |  |
| 10 s | 55 s | 35 s |
|  |  |  |
| 10 s | 55 s | 35 s |

Timings
163: Meridian Rd & Woodmen Rd

2040 Background Traffic
PM Peak Hour

| |  |  |  |  |  |  |  |  |  |  |  |  |
|----------------------|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations |  |  |  |  |  |  |  |  |  |  |  |  |
| Traffic Volume (vph) | 755 | 794 | 375 | 225 | 665 | 191 | 465 | 722 | 200 | 441 | 603 | 602 |
| Future Volume (vph) | 755 | 794 | 375 | 225 | 665 | 191 | 465 | 722 | 200 | 441 | 603 | 602 |
| Turn Type | Prot | NA | Free | Prot | NA | Perm | Prot | NA | Free | Prot | NA | Free |
| Protected Phases | 5 | 2 | | 1 | 6 | | 3 | 8 | | 7 | 4 | |
| Permitted Phases | | | Free | | | 6 | | | Free | | | Free |
| Detector Phase | 5 | 2 | | 1 | 6 | 6 | 3 | 8 | | 7 | 4 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 5.0 | 5.0 | | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | | 5.0 | 5.0 | |
| Minimum Split (s) | 10.0 | 11.5 | | 10.0 | 11.5 | 11.5 | 10.0 | 11.5 | | 10.0 | 11.5 | |
| Total Split (s) | 32.0 | 44.0 | | 17.0 | 29.0 | 29.0 | 25.0 | 37.0 | | 22.0 | 34.0 | |
| Total Split (%) | 26.7% | 36.7% | | 14.2% | 24.2% | 24.2% | 20.8% | 30.8% | | 18.3% | 28.3% | |
| Yellow Time (s) | 3.0 | 4.5 | | 3.0 | 4.5 | 4.5 | 3.0 | 4.5 | | 3.0 | 4.5 | |
| All-Red Time (s) | 2.0 | 2.0 | | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | | 2.0 | 2.0 | |
| Lost Time Adjust (s) | -1.0 | -1.0 | | -1.0 | -1.0 | -1.0 | -1.0 | -1.0 | | -1.0 | -1.0 | |
| Total Lost Time (s) | 4.0 | 5.5 | | 4.0 | 5.5 | 5.5 | 4.0 | 5.5 | | 4.0 | 5.5 | |
| Lead/Lag | Lead | Lag | | Lead | Lag | Lag | Lead | Lag | | Lead | Lag | |
| Lead-Lag Optimize? | Yes | Yes | | Yes | Yes | Yes | Yes | Yes | | Yes | Yes | |
| Recall Mode | None | Min | | None | Min | Min | None | None | | None | None | |
| Act Effect Green (s) | 28.0 | 39.2 | 117.5 | 12.4 | 23.5 | 23.5 | 20.0 | 29.2 | 117.5 | 17.8 | 26.9 | 117.5 |
| Actuated g/C Ratio | 0.24 | 0.33 | 1.00 | 0.11 | 0.20 | 0.20 | 0.17 | 0.25 | 1.00 | 0.15 | 0.23 | 1.00 |
| v/c Ratio | 0.98 | 0.69 | 0.24 | 0.64 | 0.96 | 0.41 | 0.81 | 0.84 | 0.13 | 0.87 | 0.76 | 0.39 |
| Control Delay | 71.7 | 38.1 | 0.4 | 59.4 | 72.3 | 8.5 | 59.2 | 51.6 | 0.2 | 67.1 | 49.2 | 0.7 |
| 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 | 71.7 | 38.1 | 0.4 | 59.4 | 72.3 | 8.5 | 59.2 | 51.6 | 0.2 | 67.1 | 49.2 | 0.7 |
| LOS | E | D | A | E | E | A | E | D | A | E | D | A |
| Approach Delay | | 44.4 | | | 58.3 | | | 46.7 | | | 36.3 | |
| Approach LOS | | D | | | E | | | D | | | D | |

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 117.5

Natural Cycle: 90

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.98

Intersection Signal Delay: 45.2

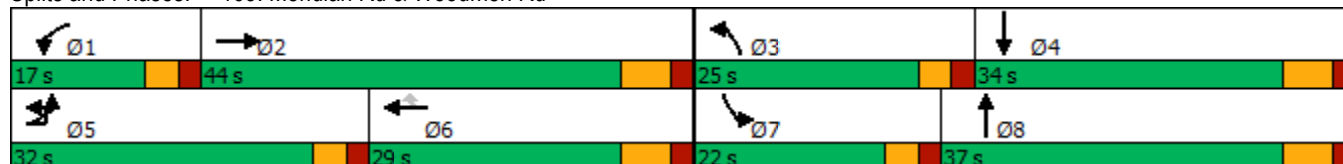
Intersection LOS: D

Intersection Capacity Utilization 89.1%

ICU Level of Service E

Analysis Period (min) 15

Splits and Phases: 163: Meridian Rd & Woodmen Rd



























Timings

1: Banning Lewis Pkwy & Briargate Pkwy

2040 Total Traffic

AM Peak Hour

| |  |  |  |  |  |  |  |  |  |  |  |  |
|----------------------|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations |  |  |  |  |  |  |  |  |  |  |  |  |
| Traffic Volume (vph) | 55 | 276 | 530 | 832 | 1156 | 55 | 650 | 105 | 408 | 40 | 155 | 25 |
| Future Volume (vph) | 55 | 276 | 530 | 832 | 1156 | 55 | 650 | 105 | 408 | 40 | 155 | 25 |
| Turn Type | Prot | NA | Free | Prot | NA | Free | Prot | NA | Free | Prot | NA | Free |
| Protected Phases | 5 | 2 | | 1 | 6 | | 3 | 8 | | 7 | 4 | |
| Permitted Phases | | | Free | | | Free | | | Free | | | Free |
| Detector Phase | 5 | 2 | | 1 | 6 | | 3 | 8 | | 7 | 4 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 4.0 | 4.0 | | 4.0 | 4.0 | | 4.0 | 4.0 | | 4.0 | 4.0 | |
| Minimum Split (s) | 9.0 | 9.0 | | 9.0 | 9.0 | | 9.0 | 9.0 | | 9.0 | 9.0 | |
| Total Split (s) | 13.0 | 39.0 | | 30.0 | 56.0 | | 27.0 | 30.0 | | 11.0 | 14.0 | |
| Total Split (%) | 11.8% | 35.5% | | 27.3% | 50.9% | | 24.5% | 27.3% | | 10.0% | 12.7% | |
| Yellow Time (s) | 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 | |
| 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 | | Lead | Lag | | Lead | Lag | | Lead | Lag | |
| Lead-Lag Optimize? | Yes | Yes | | Yes | Yes | | Yes | Yes | | Yes | Yes | |
| Recall Mode | None | None | | None | None | | None | None | | None | None | |
| Act Effect Green (s) | 6.9 | 21.4 | 97.1 | 25.3 | 42.3 | 97.1 | 21.6 | 29.1 | 97.1 | 5.9 | 8.6 | 97.1 |
| Actuated g/C Ratio | 0.07 | 0.22 | 1.00 | 0.26 | 0.44 | 1.00 | 0.22 | 0.30 | 1.00 | 0.06 | 0.09 | 1.00 |
| v/c Ratio | 0.24 | 0.37 | 0.35 | 0.95 | 0.77 | 0.04 | 0.87 | 0.10 | 0.27 | 0.20 | 0.52 | 0.02 |
| Control Delay | 48.1 | 32.7 | 0.6 | 57.8 | 27.9 | 0.0 | 51.1 | 29.5 | 0.4 | 49.4 | 50.9 | 0.0 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 48.1 | 32.7 | 0.6 | 57.8 | 27.9 | 0.0 | 51.1 | 29.5 | 0.4 | 49.4 | 50.9 | 0.0 |
| LOS | D | C | A | E | C | A | D | C | A | D | D | A |
| Approach Delay | | 13.9 | | | 39.3 | | | 31.0 | | | 44.9 | |
| Approach LOS | | B | | | D | | | C | | | D | |

Intersection Summary

Cycle Length: 110

Actuated Cycle Length: 97.1

Natural Cycle: 65

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.95

Intersection Signal Delay: 32.1

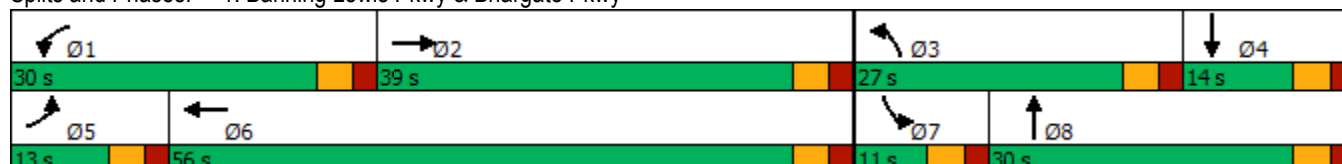
Intersection LOS: C

Intersection Capacity Utilization 74.8%

ICU Level of Service D

Analysis Period (min) 15

Splits and Phases: 1: Banning Lewis Pkwy & Briargate Pkwy



HCM 6th Roundabout
2: Residential Collector/TAZ 7 & Briargate Pkwy

2040 Total Traffic
AM Peak Hour

| Intersection | | | | | | | | | |
|-----------------------------|-------|-------|-------|-------|-------|-------|-------|-------|--|
| Intersection Delay, s/veh | 12.6 | | | | | | | | |
| Intersection LOS | B | | | | | | | | |
| Approach | EB | | WB | | NB | | SB | | |
| Entry Lanes | 2 | | 2 | | 2 | | 2 | | |
| Conflicting Circle Lanes | 2 | | 2 | | 2 | | 2 | | |
| Adj Approach Flow, veh/h | 740 | | 1848 | | 188 | | 121 | | |
| Demand Flow Rate, veh/h | 755 | | 1885 | | 191 | | 124 | | |
| Vehicles Circulating, veh/h | 35 | | 193 | | 728 | | 2045 | | |
| Vehicles Exiting, veh/h | 2134 | | 726 | | 61 | | 33 | | |
| Ped Vol Crossing Leg, #/h | 0 | | 0 | | 0 | | 0 | | |
| Ped Cap Adj | 1.000 | | 1.000 | | 1.000 | | 1.000 | | |
| Approach Delay, s/veh | 4.9 | | 15.9 | | 6.4 | | 19.0 | | |
| Approach LOS | A | | C | | A | | C | | |
| Lane | Left | Right | Left | Right | Left | Right | Left | Right | |
| Designated Moves | LT | TR | LT | TR | L | TR | L | TR | |
| Assumed Moves | LT | TR | LT | TR | L | TR | L | TR | |
| RT Channelized | | | | | | | | | |
| Lane Util | 0.470 | 0.530 | 0.470 | 0.530 | 0.880 | 0.120 | 0.218 | 0.782 | |
| Follow-Up Headway, s | 2.500 | 2.500 | 2.500 | 2.500 | 2.500 | 2.500 | 2.500 | 2.500 | |
| Critical Headway, s | 4.050 | 4.050 | 4.050 | 4.050 | 4.050 | 4.050 | 4.050 | 4.050 | |
| Entry Flow, veh/h | 355 | 400 | 886 | 999 | 168 | 23 | 27 | 97 | |
| Cap Entry Lane, veh/h | 1401 | 1401 | 1239 | 1239 | 817 | 817 | 293 | 293 | |
| Entry HV Adj Factor | 0.979 | 0.980 | 0.981 | 0.981 | 0.982 | 1.000 | 0.963 | 0.979 | |
| Flow Entry, veh/h | 348 | 392 | 869 | 980 | 165 | 23 | 26 | 95 | |
| Cap Entry, veh/h | 1372 | 1374 | 1215 | 1215 | 803 | 817 | 283 | 287 | |
| V/C Ratio | 0.253 | 0.285 | 0.715 | 0.806 | 0.206 | 0.028 | 0.092 | 0.331 | |
| Control Delay, s/veh | 4.8 | 5.1 | 13.6 | 17.9 | 6.7 | 4.7 | 14.5 | 20.2 | |
| LOS | A | A | B | C | A | A | B | C | |
| 95th %tile Queue, veh | 1 | 1 | 7 | 9 | 1 | 0 | 0 | 1 | |





















HCM 6th Roundabout
3: Woodmen Hills Dr/Raygor Rd & Briargate Pkwy

2040 Total Traffic
AM Peak Hour

| Intersection | | | | | | | | | |
|-----------------------------|-------|-------|-------|-------|-------|-------|-------|-------|--|
| Intersection Delay, s/veh | 13.4 | | | | | | | | |
| Intersection LOS | B | | | | | | | | |
| Approach | EB | | WB | | NB | | SB | | |
| Entry Lanes | 2 | | 2 | | 2 | | 2 | | |
| Conflicting Circle Lanes | 2 | | 2 | | 2 | | 2 | | |
| Adj Approach Flow, veh/h | 732 | | 1381 | | 421 | | 314 | | |
| Demand Flow Rate, veh/h | 747 | | 1408 | | 430 | | 320 | | |
| Vehicles Circulating, veh/h | 167 | | 459 | | 614 | | 1742 | | |
| Vehicles Exiting, veh/h | 1895 | | 585 | | 300 | | 125 | | |
| Ped Vol Crossing Leg, #/h | 0 | | 0 | | 0 | | 0 | | |
| Ped Cap Adj | 1.000 | | 1.000 | | 1.000 | | 1.000 | | |
| Approach Delay, s/veh | 5.6 | | 15.4 | | 8.1 | | 30.0 | | |
| Approach LOS | A | | C | | A | | D | | |
| Lane | Left | Right | Left | Right | Left | Right | Left | Right | |
| Designated Moves | LT | TR | LT | TR | L | TR | L | TR | |
| Assumed Moves | LT | TR | LT | TR | L | TR | L | TR | |
| RT Channelized | | | | | | | | | |
| Lane Util | 0.470 | 0.530 | 0.470 | 0.530 | 0.823 | 0.177 | 0.181 | 0.819 | |
| Follow-Up Headway, s | 2.500 | 2.500 | 2.500 | 2.500 | 2.500 | 2.500 | 2.500 | 2.500 | |
| Critical Headway, s | 4.050 | 4.050 | 4.050 | 4.050 | 4.050 | 4.050 | 4.050 | 4.050 | |
| Entry Flow, veh/h | 351 | 396 | 662 | 746 | 354 | 76 | 58 | 262 | |
| Cap Entry Lane, veh/h | 1265 | 1265 | 1008 | 1008 | 893 | 893 | 371 | 371 | |
| Entry HV Adj Factor | 0.981 | 0.980 | 0.981 | 0.981 | 0.980 | 0.976 | 0.983 | 0.982 | |
| Flow Entry, veh/h | 344 | 388 | 649 | 732 | 347 | 74 | 57 | 257 | |
| Cap Entry, veh/h | 1240 | 1239 | 988 | 989 | 876 | 872 | 365 | 365 | |
| V/C Ratio | 0.278 | 0.313 | 0.657 | 0.740 | 0.396 | 0.085 | 0.156 | 0.705 | |
| Control Delay, s/veh | 5.4 | 5.8 | 13.6 | 16.9 | 8.8 | 4.9 | 12.5 | 33.9 | |
| LOS | A | A | B | C | A | A | B | D | |
| 95th %tile Queue, veh | 1 | 1 | 5 | 7 | 2 | 0 | 1 | 5 | |

Timings 4: Briargate Pkwy & Residential Collector

2040 Total Traffic
AM Peak Hour

| |  |  |  |  |  |  |  |  |  |  |
|----------------------|---|---|---|---|---|---|---|---|---|---|
| Lane Group | EBL | EBT | WBL | WBT | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations |  |  |  |  |  |  |  |  |  |  |
| Traffic Volume (vph) | 24 | 6 | 73 | 3 | 18 | 501 | 25 | 23 | 1226 | 7 |
| Future Volume (vph) | 24 | 6 | 73 | 3 | 18 | 501 | 25 | 23 | 1226 | 7 |
| Turn Type | Perm | NA | Perm | NA | Perm | NA | Perm | Perm | NA | Perm |
| Protected Phases | | 4 | | 8 | | 2 | | | 6 | |
| Permitted Phases | 4 | | 8 | | 2 | | 2 | 6 | | 6 |
| Detector Phase | 4 | 4 | 8 | 8 | 2 | 2 | 2 | 6 | 6 | 6 |
| Switch Phase | | | | | | | | | | |
| Minimum Initial (s) | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 |
| Minimum Split (s) | 21.0 | 21.0 | 21.0 | 21.0 | 21.0 | 21.0 | 21.0 | 21.0 | 21.0 | 21.0 |
| Total Split (s) | 31.0 | 31.0 | 31.0 | 31.0 | 69.0 | 69.0 | 69.0 | 69.0 | 69.0 | 69.0 |
| Total Split (%) | 31.0% | 31.0% | 31.0% | 31.0% | 69.0% | 69.0% | 69.0% | 69.0% | 69.0% | 69.0% |
| 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 Optimize? | | | | | | | | | | |
| Recall Mode | None | None | None | None | Max | Max | Max | Max | Max | Max |
| Act Effect Green (s) | 10.1 | 10.1 | 10.3 | 10.3 | 69.5 | 69.5 | 69.5 | 69.5 | 69.5 | 69.5 |
| Actuated g/C Ratio | 0.12 | 0.12 | 0.12 | 0.12 | 0.80 | 0.80 | 0.80 | 0.80 | 0.80 | 0.80 |
| v/c Ratio | 0.16 | 0.26 | 0.49 | 0.26 | 0.07 | 0.19 | 0.02 | 0.04 | 0.45 | 0.01 |
| Control Delay | 35.2 | 13.9 | 45.4 | 12.9 | 3.8 | 3.0 | 1.4 | 3.3 | 4.4 | 0.4 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 35.2 | 13.9 | 45.4 | 12.9 | 3.8 | 3.0 | 1.4 | 3.3 | 4.4 | 0.4 |
| LOS | D | B | D | B | A | A | A | A | A | A |
| Approach Delay | | 20.0 | | 30.9 | | 3.0 | | | 4.3 | |
| Approach LOS | | C | | C | | A | | | A | |

Intersection Summary

Cycle Length: 100

Actuated Cycle Length: 86.5

Natural Cycle: 50

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.49

Intersection Signal Delay: 6.3













Intersection LOS: A

Intersection Capacity Utilization 52.9%

ICU Level of Service A























Analysis Period (min) 15

Splits and Phases: 4: Briargate Pkwy & Residential Collector

| | | | | | |
|---|---|---|---|---|---|
|  |  |  |  |  |  |
| 69 s | | | 31 s | | |
|  |  |  |  |  |  |
| 69 s | | | 31 s | | |

Timings 5: Towner Ave & Briargate Pkwy

2040 Total Traffic
AM Peak Hour

| |  |  |  |  |  |  |  |  |  |  |  |
|----------------------|---|---|---|---|---|---|---|---|---|---|---|
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | SBL | SBT | SBR |
| Lane Configurations |  |  |  |  |  |  |  |  |  |  |  |
| Traffic Volume (vph) | 276 | 290 | 15 | 5 | 929 | 112 | 50 | 19 | 67 | 19 | 277 |
| Future Volume (vph) | 276 | 290 | 15 | 5 | 929 | 112 | 50 | 19 | 67 | 19 | 277 |
| Turn Type | pm+pt | NA | Perm | pm+pt | NA | Perm | Perm | NA | Perm | NA | Perm |
| Protected Phases | 5 | 2 | | 1 | 6 | | | 8 | | 4 | |
| Permitted Phases | 2 | | 2 | 6 | | 6 | 8 | | 4 | | 4 |
| Detector Phase | 5 | 2 | 2 | 1 | 6 | 6 | 8 | 8 | 4 | 4 | 4 |
| Switch Phase | | | | | | | | | | | |
| Minimum Initial (s) | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 |
| Minimum Split (s) | 8.0 | 20.0 | 20.0 | 8.0 | 20.0 | 20.0 | 20.0 | 20.0 | 20.0 | 20.0 | 20.0 |
| Total Split (s) | 10.0 | 65.0 | 65.0 | 10.0 | 65.0 | 65.0 | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 |
| Total Split (%) | 10.0% | 65.0% | 65.0% | 10.0% | 65.0% | 65.0% | 25.0% | 25.0% | 25.0% | 25.0% | 25.0% |
| Yellow Time (s) | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 |
| All-Red Time (s) | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 |
| Lead/Lag | Lead | Lag | Lag | Lead | Lag | Lag | | | | | |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | Yes | Yes | | | | | |
| Recall Mode | None | C-Max | C-Max | None | C-Max | C-Max | None | None | None | None | None |
| Act Effect Green (s) | 78.9 | 77.7 | 77.7 | 72.4 | 66.9 | 66.9 | 12.4 | 12.4 | 12.4 | 12.4 | 12.4 |
| Actuated g/C Ratio | 0.79 | 0.78 | 0.78 | 0.72 | 0.67 | 0.67 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 |
| v/c Ratio | 0.62 | 0.11 | 0.01 | 0.01 | 0.41 | 0.11 | 0.31 | 0.14 | 0.42 | 0.09 | 0.76 |
| Control Delay | 11.9 | 4.0 | 0.0 | 3.8 | 9.0 | 1.8 | 42.1 | 26.6 | 45.9 | 36.1 | 24.5 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 11.9 | 4.0 | 0.0 | 3.8 | 9.0 | 1.8 | 42.1 | 26.6 | 45.9 | 36.1 | 24.5 |
| LOS | B | A | A | A | A | A | D | C | D | D | C |
| Approach Delay | | 7.6 | | | 8.2 | | | 36.3 | | 29.1 | |
| Approach LOS | | A | | | A | | | D | | C | |

Intersection Summary

Cycle Length: 100

Actuated Cycle Length: 100

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

Natural Cycle: 60

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.76

Intersection Signal Delay: 12.8

Intersection LOS: B

Intersection Capacity Utilization 61.3%

ICU Level of Service B


Analysis Period (min) 15

Splits and Phases: 5: Towner Ave & Briargate Pkwy



Timings 6: Meridian Rd & Briargate Pkwy/Stapleton Dr

2040 Total Traffic
AM Peak Hour

| |  | | | | | | | | | | | |
|----------------------|--|-------|-------|-------|-------|------|-------|-------|------|-------|-------|-------|
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 170 | 822 | 302 | 406 | 1295 | 156 | 279 | 226 | 204 | 51 | 741 | 351 |
| Future Volume (vph) | 170 | 822 | 302 | 406 | 1295 | 156 | 279 | 226 | 204 | 51 | 741 | 351 |
| Turn Type | Prot | NA | Perm | Prot | NA | Free | Prot | NA | Free | pm+pt | NA | Perm |
| Protected Phases | 7 | 4 | | 3 | 8 | | 5 | 2 | | 1 | 6 | |
| Permitted Phases | | | 4 | | | Free | | | Free | 6 | | 6 |
| Detector Phase | 7 | 4 | 4 | 3 | 8 | | 5 | 2 | | 1 | 6 | 6 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | | 4.0 | 4.0 | | 4.0 | 4.0 | 4.0 |
| Minimum Split (s) | 9.0 | 9.0 | 9.0 | 9.0 | 9.0 | | 9.0 | 9.0 | | 9.0 | 9.0 | 9.0 |
| Total Split (s) | 13.0 | 34.0 | 34.0 | 22.0 | 43.0 | | 15.0 | 34.0 | | 10.0 | 29.0 | 29.0 |
| Total Split (%) | 13.0% | 34.0% | 34.0% | 22.0% | 43.0% | | 15.0% | 34.0% | | 10.0% | 29.0% | 29.0% |
| 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 | Lag | Lead | Lag | | Lead | 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 Effect Green (s) | 7.9 | 30.1 | 30.1 | 15.8 | 38.0 | 99.7 | 10.0 | 30.8 | 99.7 | 28.8 | 23.8 | 23.8 |
| Actuated g/C Ratio | 0.08 | 0.30 | 0.30 | 0.16 | 0.38 | 1.00 | 0.10 | 0.31 | 1.00 | 0.29 | 0.24 | 0.24 |
| v/c Ratio | 0.64 | 0.78 | 0.51 | 0.76 | 0.98 | 0.10 | 0.83 | 0.21 | 0.13 | 0.14 | 0.90 | 0.68 |
| Control Delay | 55.8 | 38.5 | 14.9 | 49.9 | 51.5 | 0.1 | 65.0 | 27.0 | 0.2 | 20.8 | 51.5 | 22.1 |
| 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 | 55.8 | 38.5 | 14.9 | 49.9 | 51.5 | 0.1 | 65.0 | 27.0 | 0.2 | 20.8 | 51.5 | 22.1 |
| LOS | E | D | B | D | D | A | E | C | A | C | D | C |
| Approach Delay | | 35.2 | | | 46.8 | | | 34.2 | | | 41.1 | |
| Approach LOS | | D | | | D | | | C | | | D | |

Intersection Summary

Cycle Length: 100

Actuated Cycle Length: 99.7

Natural Cycle: 90

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.98

Intersection Signal Delay: 40.7

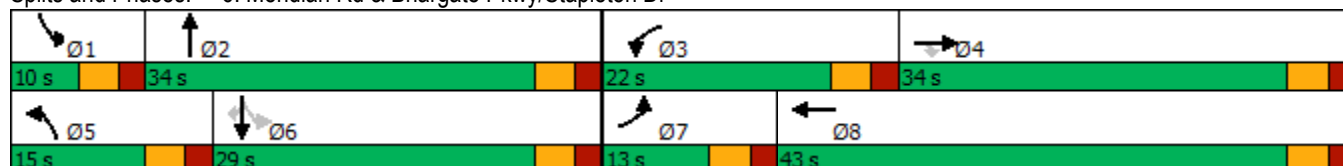
Intersection LOS: D

Intersection Capacity Utilization 85.8%

ICU Level of Service E

Analysis Period (min) 15

Splits and Phases: 6: Meridian Rd & Briargate Pkwy/Stapleton Dr





















HCM 6th Roundabout
13: Woodmen Hills Dr & Residential Collector

2040 Total Traffic
AM Peak Hour

| 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 | 73 | 258 | 165 | 270 |
| Demand Flow Rate, veh/h | 74 | 263 | 168 | 276 |
| Vehicles Circulating, veh/h | 330 | 145 | 162 | 79 |
| Vehicles Exiting, veh/h | 25 | 185 | 242 | 329 |
| Ped Vol Crossing Leg, #/h | 0 | 0 | 0 | 0 |
| Ped Cap Adj | 1.000 | 1.000 | 1.000 | 1.000 |
| Approach Delay, s/veh | 4.4 | 5.1 | 4.4 | 4.8 |
| 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 | 74 | 263 | 168 | 276 |
| Cap Entry Lane, veh/h | 986 | 1190 | 1170 | 1273 |
| Entry HV Adj Factor | 0.981 | 0.980 | 0.980 | 0.979 |
| Flow Entry, veh/h | 73 | 258 | 165 | 270 |
| Cap Entry, veh/h | 966 | 1167 | 1146 | 1246 |
| V/C Ratio | 0.075 | 0.221 | 0.144 | 0.217 |
| Control Delay, s/veh | 4.4 | 5.1 | 4.4 | 4.8 |
| LOS | A | A | A | A |
| 95th %tile Queue, veh | 0 | 1 | 1 | 1 |

Timings
16: Meridian Rd & Woodmen Hills Dr

2040 Total Traffic
AM Peak Hour

| |  |  |  |  |  |  |  |  |  |  |
|----------------------|---|---|---|---|---|---|--|---|---|---|
| Lane Group | EBL | EBT | WBL | WBT | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | |  | |  |  |  |  |  |  |  |
| Traffic Volume (vph) | 21 | 54 | 99 | 61 | 81 | 653 | 13 | 36 | 1405 | 8 |
| Future Volume (vph) | 21 | 54 | 99 | 61 | 81 | 653 | 13 | 36 | 1405 | 8 |
| Turn Type | Perm | NA | Perm | NA | pm+pt | NA | Perm | pm+pt | NA | Perm |
| Protected Phases | | 4 | | 8 | 5 | 2 | | 1 | 6 | |
| Permitted Phases | 4 | | 8 | | 2 | | 2 | 6 | | 6 |
| Detector Phase | 4 | 4 | 8 | 8 | 5 | 2 | 2 | 1 | 6 | 6 |
| Switch Phase | | | | | | | | | | |
| Minimum Initial (s) | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 |
| Minimum Split (s) | 9.0 | 9.0 | 9.0 | 9.0 | 9.0 | 9.0 | 9.0 | 9.0 | 9.0 | 9.0 |
| Total Split (s) | 31.0 | 31.0 | 31.0 | 31.0 | 10.0 | 59.0 | 59.0 | 10.0 | 59.0 | 59.0 |
| Total Split (%) | 31.0% | 31.0% | 31.0% | 31.0% | 10.0% | 59.0% | 59.0% | 10.0% | 59.0% | 59.0% |
| 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 |
| 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 | None | None | None | None | None |
| Act Effect Green (s) | | 24.5 | | 24.5 | 47.8 | 45.1 | 45.1 | 46.8 | 43.1 | 43.1 |
| Actuated g/C Ratio | | 0.29 | | 0.29 | 0.56 | 0.53 | 0.53 | 0.55 | 0.50 | 0.50 |
| v/c Ratio | | 0.59 | | 0.74 | 0.45 | 0.36 | 0.02 | 0.09 | 0.80 | 0.01 |
| Control Delay | | 23.6 | | 48.4 | 15.9 | 12.8 | 0.0 | 7.5 | 22.2 | 0.0 |
| Queue Delay | | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | | 23.6 | | 48.4 | 15.9 | 12.8 | 0.0 | 7.5 | 22.2 | 0.0 |
| LOS | | C | | D | B | B | A | A | C | A |
| Approach Delay | | 23.6 | | 48.4 | | 13.0 | | | 21.7 | |
| Approach LOS | | C | | D | | B | | | C | |

Intersection Summary

Cycle Length: 100

Actuated Cycle Length: 85.6

Natural Cycle: 65

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.80

Intersection Signal Delay: 21.5



Intersection LOS: C

Intersection Capacity Utilization 89.0%

ICU Level of Service E

























Analysis Period (min) 15

Splits and Phases: 16: Meridian Rd & Woodmen Hills Dr

| | | |
|---|---|---|
|  |  |  |
| 10 s | 59 s | 31 s |
|  |  |  |
| 10 s | 59 s | 31 s |

Timings
163: Meridian Rd & Woodmen Rd

2040 Total Traffic
AM Peak Hour

| |  |  |  |  |  |  |  |  |  |  |  |  |
|----------------------|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations |  |  |  |  |  |  |  |  |  |  |  |  |
| Traffic Volume (vph) | 472 | 520 | 175 | 150 | 884 | 166 | 328 | 340 | 100 | 289 | 929 | 1041 |
| Future Volume (vph) | 472 | 520 | 175 | 150 | 884 | 166 | 328 | 340 | 100 | 289 | 929 | 1041 |
| Turn Type | Prot | NA | Free | Prot | NA | Perm | Prot | NA | Free | Prot | NA | Free |
| Protected Phases | 5 | 2 | | 1 | 6 | | 3 | 8 | | 7 | 4 | |
| Permitted Phases | | | Free | | | 6 | | | Free | | | Free |
| Detector Phase | 5 | 2 | | 1 | 6 | 6 | 3 | 8 | | 7 | 4 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 5.0 | 5.0 | | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | | 5.0 | 5.0 | |
| Minimum Split (s) | 10.0 | 11.5 | | 10.0 | 11.5 | 11.5 | 10.0 | 11.5 | | 10.0 | 11.5 | |
| Total Split (s) | 22.0 | 45.0 | | 17.0 | 40.0 | 40.0 | 18.0 | 34.0 | | 24.0 | 40.0 | |
| Total Split (%) | 18.3% | 37.5% | | 14.2% | 33.3% | 33.3% | 15.0% | 28.3% | | 20.0% | 33.3% | |
| Yellow Time (s) | 3.0 | 4.5 | | 3.0 | 4.5 | 4.5 | 3.0 | 4.5 | | 3.0 | 4.5 | |
| All-Red Time (s) | 2.0 | 2.0 | | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | | 2.0 | 2.0 | |
| Lost Time Adjust (s) | -1.0 | -1.0 | | -1.0 | -1.0 | -1.0 | -1.0 | -1.0 | | -1.0 | -1.0 | |
| Total Lost Time (s) | 4.0 | 5.5 | | 4.0 | 5.5 | 5.5 | 4.0 | 5.5 | | 4.0 | 5.5 | |
| Lead/Lag | Lead | Lag | | Lead | Lag | Lag | Lead | Lag | | Lead | Lag | |
| Lead-Lag Optimize? | Yes | Yes | | Yes | Yes | Yes | Yes | Yes | | Yes | Yes | |
| Recall Mode | None | Max | | None | Max | Max | None | None | | None | None | |
| Act Effect Green (s) | 18.0 | 41.2 | 119.7 | 11.3 | 34.5 | 34.5 | 14.0 | 31.8 | 119.7 | 16.4 | 34.2 | 119.7 |
| Actuated g/C Ratio | 0.15 | 0.34 | 1.00 | 0.09 | 0.29 | 0.29 | 0.12 | 0.27 | 1.00 | 0.14 | 0.29 | 1.00 |
| v/c Ratio | 0.94 | 0.44 | 0.11 | 0.47 | 0.88 | 0.29 | 0.84 | 0.37 | 0.06 | 0.63 | 0.94 | 0.67 |
| Control Delay | 77.0 | 32.1 | 0.1 | 56.0 | 52.3 | 6.3 | 70.4 | 37.8 | 0.1 | 54.8 | 58.9 | 2.3 |
| 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 | 77.0 | 32.1 | 0.1 | 56.0 | 52.3 | 6.3 | 70.4 | 37.8 | 0.1 | 54.8 | 58.9 | 2.3 |
| LOS | E | C | A | E | D | A | E | D | A | D | E | A |
| Approach Delay | | 45.5 | | | 46.4 | | | 46.8 | | | 32.3 | |
| Approach LOS | | D | | | D | | | D | | | C | |

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 119.7

Natural Cycle: 90

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.94

Intersection Signal Delay: 40.3

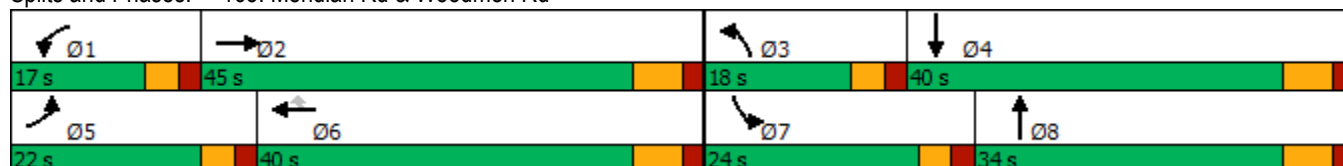
Intersection LOS: D

Intersection Capacity Utilization 88.8%

ICU Level of Service E

Analysis Period (min) 15

























Splits and Phases: 163: Meridian Rd & Woodmen Rd



Timings

1: Banning Lewis Pkwy & Briargate Pkwy

2040 Total Traffic
PM Peak Hour

| |  |  |  |  |  |  |  |  |  |  |  |  |
|----------------------|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations |  |  |  |  |  |  |  |  |  |  |  |  |
| Traffic Volume (vph) | 135 | 1226 | 595 | 477 | 589 | 135 | 685 | 340 | 965 | 130 | 335 | 130 |
| Future Volume (vph) | 135 | 1226 | 595 | 477 | 589 | 135 | 685 | 340 | 965 | 130 | 335 | 130 |
| Turn Type | Prot | NA | Free | Prot | NA | Free | Prot | NA | Free | Prot | NA | Free |
| Protected Phases | 5 | 2 | | 1 | 6 | | 3 | 8 | | 7 | 4 | |
| Permitted Phases | | | Free | | | Free | | | Free | | | Free |
| Detector Phase | 5 | 2 | | 1 | 6 | | 3 | 8 | | 7 | 4 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 4.0 | 4.0 | | 4.0 | 4.0 | | 4.0 | 4.0 | | 4.0 | 4.0 | |
| Minimum Split (s) | 9.0 | 9.0 | | 9.0 | 9.0 | | 9.0 | 9.0 | | 9.0 | 9.0 | |
| Total Split (s) | 13.0 | 45.0 | | 23.0 | 55.0 | | 24.0 | 30.0 | | 12.0 | 18.0 | |
| Total Split (%) | 11.8% | 40.9% | | 20.9% | 50.0% | | 21.8% | 27.3% | | 10.9% | 16.4% | |
| Yellow Time (s) | 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 | |
| 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 | | Lead | Lag | | Lead | Lag | | Lead | Lag | |
| Lead-Lag Optimize? | Yes | Yes | | Yes | Yes | | Yes | Yes | | Yes | Yes | |
| Recall Mode | None | None | | None | None | | None | None | | None | None | |
| Act Effect Green (s) | 7.8 | 40.0 | 109.5 | 17.6 | 49.8 | 109.5 | 19.0 | 24.9 | 109.5 | 7.0 | 12.9 | 109.5 |
| Actuated g/C Ratio | 0.07 | 0.37 | 1.00 | 0.16 | 0.45 | 1.00 | 0.17 | 0.23 | 1.00 | 0.06 | 0.12 | 1.00 |
| v/c Ratio | 0.58 | 0.97 | 0.40 | 0.88 | 0.39 | 0.09 | 1.17 | 0.45 | 0.64 | 0.63 | 0.85 | 0.09 |
| Control Delay | 59.4 | 53.4 | 0.7 | 63.6 | 20.7 | 0.1 | 136.3 | 38.5 | 2.0 | 63.3 | 66.8 | 0.1 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 59.4 | 53.4 | 0.7 | 63.6 | 20.7 | 0.1 | 136.3 | 38.5 | 2.0 | 63.3 | 66.8 | 0.1 |
| LOS | E | D | A | E | C | A | F | D | A | E | E | A |
| Approach Delay | | 37.5 | | | 35.1 | | | 53.6 | | | 51.5 | |
| Approach LOS | | D | | | D | | | D | | | D | |

Intersection Summary

Cycle Length: 110

Actuated Cycle Length: 109.5

Natural Cycle: 90

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 1.17

Intersection Signal Delay: 44.0

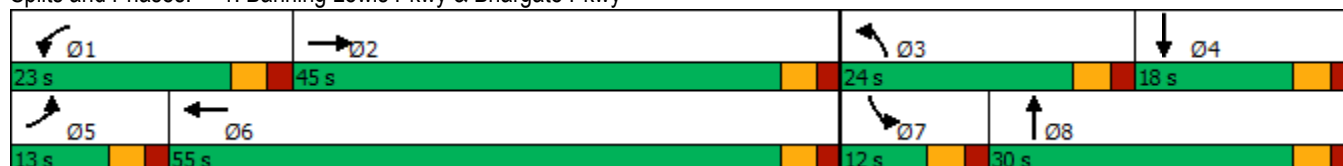
Intersection LOS: D

Intersection Capacity Utilization 93.0%

ICU Level of Service F

Analysis Period (min) 15

Splits and Phases: 1: Banning Lewis Pkwy & Briargate Pkwy



HCM 6th Roundabout
2: Residential Collector/TAZ 7 & Briargate Pkwy

2040 Total Traffic
PM Peak Hour

| Intersection | | | | | | | | | |
|-----------------------------|-------|-------|-------|-------|-------|-------|-------|-------|--|
| Intersection Delay, s/veh | 18.2 | | | | | | | | |
| Intersection LOS | C | | | | | | | | |
| Approach | EB | | WB | | NB | | SB | | |
| Entry Lanes | 2 | | 2 | | 2 | | 2 | | |
| Conflicting Circle Lanes | 2 | | 2 | | 2 | | 2 | | |
| Adj Approach Flow, veh/h | 2378 | | 1120 | | 132 | | 74 | | |
| Demand Flow Rate, veh/h | 2426 | | 1143 | | 134 | | 75 | | |
| Vehicles Circulating, veh/h | 46 | | 216 | | 2241 | | 1226 | | |
| Vehicles Exiting, veh/h | 1255 | | 2159 | | 231 | | 133 | | |
| Ped Vol Crossing Leg, #/h | 0 | | 0 | | 0 | | 0 | | |
| Ped Cap Adj | 1.000 | | 1.000 | | 1.000 | | 1.000 | | |
| Approach Delay, s/veh | 22.9 | | 8.0 | | 26.9 | | 7.6 | | |
| Approach LOS | C | | A | | D | | A | | |
| Lane | Left | Right | Left | Right | Left | Right | Left | Right | |
| Designated Moves | LT | TR | LT | TR | L | TR | L | TR | |
| Assumed Moves | LT | TR | LT | TR | L | TR | L | TR | |
| RT Channelized | | | | | | | | | |
| Lane Util | 0.470 | 0.530 | 0.470 | 0.530 | 0.866 | 0.134 | 0.240 | 0.760 | |
| Follow-Up Headway, s | 2.500 | 2.500 | 2.500 | 2.500 | 2.500 | 2.500 | 2.500 | 2.500 | |
| Critical Headway, s | 4.050 | 4.050 | 4.050 | 4.050 | 4.050 | 4.050 | 4.050 | 4.050 | |
| Entry Flow, veh/h | 1140 | 1286 | 537 | 606 | 116 | 18 | 18 | 57 | |
| Cap Entry Lane, veh/h | 1389 | 1389 | 1217 | 1217 | 252 | 252 | 555 | 555 | |
| Entry HV Adj Factor | 0.981 | 0.980 | 0.980 | 0.979 | 0.983 | 1.000 | 1.000 | 0.982 | |
| Flow Entry, veh/h | 1118 | 1261 | 526 | 593 | 114 | 18 | 18 | 56 | |
| Cap Entry, veh/h | 1362 | 1362 | 1193 | 1192 | 248 | 252 | 555 | 545 | |
| V/C Ratio | 0.821 | 0.926 | 0.441 | 0.498 | 0.460 | 0.071 | 0.032 | 0.103 | |
| Control Delay, s/veh | 17.4 | 27.7 | 7.6 | 8.5 | 28.7 | 15.7 | 6.9 | 7.9 | |
| LOS | C | D | A | A | D | C | A | A | |
| 95th %tile Queue, veh | 10 | 16 | 2 | 3 | 2 | 0 | 0 | 0 | |





















HCM 6th Roundabout
3: Woodmen Hills Dr/Raygor Rd & Briargate Pkwy

2040 Total Traffic
PM Peak Hour

| Intersection | | | | | | | | | |
|-----------------------------|-------|-------|-------|-------|-------|-------|-------|-------|--|
| Intersection Delay, s/veh | 16.8 | | | | | | | | |
| Intersection LOS | C | | | | | | | | |
| Approach | EB | | WB | | NB | | SB | | |
| Entry Lanes | 2 | | 2 | | 2 | | 2 | | |
| Conflicting Circle Lanes | 2 | | 2 | | 2 | | 2 | | |
| Adj Approach Flow, veh/h | 2114 | | 896 | | 300 | | 225 | | |
| Demand Flow Rate, veh/h | 2155 | | 914 | | 306 | | 230 | | |
| Vehicles Circulating, veh/h | 130 | | 501 | | 1870 | | 1049 | | |
| Vehicles Exiting, veh/h | 1149 | | 1675 | | 415 | | 366 | | |
| Ped Vol Crossing Leg, #/h | 0 | | 0 | | 0 | | 0 | | |
| Ped Cap Adj | 1.000 | | 1.000 | | 1.000 | | 1.000 | | |
| Approach Delay, s/veh | 19.6 | | 9.4 | | 25.5 | | 9.1 | | |
| Approach LOS | C | | A | | D | | A | | |
| Lane | Left | Right | Left | Right | Left | Right | Left | Right | |
| Designated Moves | LT | TR | LT | TR | L | TR | L | TR | |
| Assumed Moves | LT | TR | LT | TR | L | TR | L | TR | |
| RT Channelized | | | | | | | | | |
| Lane Util | 0.470 | 0.530 | 0.470 | 0.530 | 0.670 | 0.330 | 0.187 | 0.813 | |
| Follow-Up Headway, s | 2.500 | 2.500 | 2.500 | 2.500 | 2.500 | 2.500 | 2.500 | 2.500 | |
| Critical Headway, s | 4.050 | 4.050 | 4.050 | 4.050 | 4.050 | 4.050 | 4.050 | 4.050 | |
| Entry Flow, veh/h | 1013 | 1142 | 430 | 484 | 205 | 101 | 43 | 187 | |
| Cap Entry Lane, veh/h | 1302 | 1302 | 975 | 975 | 336 | 336 | 637 | 637 | |
| Entry HV Adj Factor | 0.981 | 0.981 | 0.979 | 0.981 | 0.980 | 0.976 | 0.977 | 0.979 | |
| Flow Entry, veh/h | 993 | 1120 | 421 | 475 | 201 | 99 | 42 | 183 | |
| Cap Entry, veh/h | 1276 | 1277 | 955 | 957 | 330 | 328 | 622 | 623 | |
| V/C Ratio | 0.778 | 0.877 | 0.441 | 0.496 | 0.610 | 0.300 | 0.068 | 0.294 | |
| Control Delay, s/veh | 15.8 | 22.9 | 8.9 | 9.9 | 29.6 | 17.1 | 6.5 | 9.6 | |
| LOS | C | C | A | A | D | C | A | A | |
| 95th %tile Queue, veh | 8 | 13 | 2 | 3 | 4 | 1 | 0 | 1 | |

Timings 4: Briargate Pkwy & Residential Collector

2040 Total Traffic
PM Peak Hour







| |  |  |  |  |  |  |  |  |  |  |
|----------------------|---|---|---|---|---|---|---|---|---|---|
| Lane Group | EBL | EBT | WBL | WBT | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations |  |  |  |  |  |  |  |  |  |  |
| Traffic Volume (vph) | 17 | 1 | 51 | 2 | 63 | 1455 | 90 | 57 | 787 | 29 |
| Future Volume (vph) | 17 | 1 | 51 | 2 | 63 | 1455 | 90 | 57 | 787 | 29 |
| Turn Type | Perm | NA | Perm | NA | pm+pt | NA | Perm | pm+pt | NA | Perm |
| Protected Phases | | 4 | | 8 | 5 | 2 | | 1 | 6 | |
| Permitted Phases | 4 | | 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) | 20.0 | 20.0 | 20.0 | 20.0 | 10.0 | 70.0 | 70.0 | 10.0 | 70.0 | 70.0 |
| Total Split (%) | 20.0% | 20.0% | 20.0% | 20.0% | 10.0% | 70.0% | 70.0% | 10.0% | 70.0% | 70.0% |
| 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 | Lag | Lead | Lag | Lag |
| Lead-Lag Optimize? | | | | | Yes | Yes | Yes | Yes | Yes | Yes |
| Recall Mode | None | None | None | None | None | None | None | None | None | None |
| Act Effect Green (s) | 9.8 | 9.8 | 9.8 | 9.8 | 41.9 | 42.6 | 42.6 | 41.9 | 42.6 | 42.6 |
| Actuated g/C Ratio | 0.16 | 0.16 | 0.16 | 0.16 | 0.69 | 0.70 | 0.70 | 0.69 | 0.70 | 0.70 |
| v/c Ratio | 0.08 | 0.14 | 0.25 | 0.13 | 0.12 | 0.62 | 0.08 | 0.19 | 0.34 | 0.03 |
| Control Delay | 32.8 | 13.5 | 34.5 | 14.3 | 3.5 | 9.7 | 1.7 | 4.5 | 6.6 | 0.0 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 32.8 | 13.5 | 34.5 | 14.3 | 3.5 | 9.7 | 1.7 | 4.5 | 6.6 | 0.0 |
| LOS | C | B | C | B | A | A | A | A | A | A |
| Approach Delay | | 19.5 | | 26.3 | | 9.0 | | 6.3 | | |
| Approach LOS | | B | | C | | A | | A | | |

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 61
Natural Cycle: 60
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.62
Intersection Signal Delay: 8.9
Intersection Capacity Utilization 66.4%
Analysis Period (min) 15























Intersection LOS: A
ICU Level of Service C

Splits and Phases: 4: Briargate Pkwy & Residential Collector

| | | |
|---|---|---|
|  |  |  |
| Ø1 | Ø2 | Ø4 |
| 10 s | 70 s | 20 s |
|  |  |  |
| Ø5 | Ø6 | Ø8 |
| 10 s | 70 s | 20 s |

Timings 5: Towner Ave & Briargate Pkwy

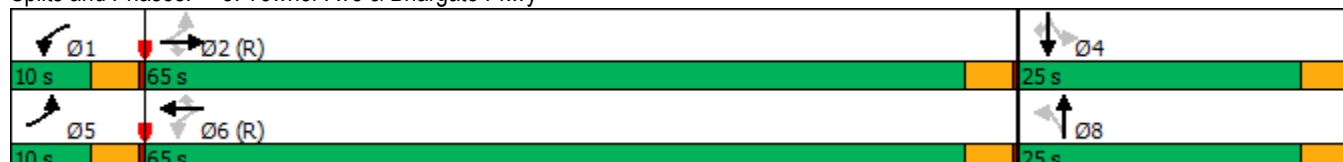
2040 Total Traffic
PM Peak Hour

| |  |  |  |  |  |  |  |  |  |  |  |
|----------------------|---|---|---|---|---|---|---|---|---|---|---|
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | SBL | SBT | SBR |
| Lane Configurations |  |  |  |  |  |  |  |  |  |  |  |
| Traffic Volume (vph) | 314 | 1140 | 50 | 29 | 630 | 131 | 25 | 2 | 108 | 2 | 218 |
| Future Volume (vph) | 314 | 1140 | 50 | 29 | 630 | 131 | 25 | 2 | 108 | 2 | 218 |
| Turn Type | pm+pt | NA | Perm | pm+pt | NA | Perm | Perm | NA | Perm | NA | Perm |
| Protected Phases | 5 | 2 | | 1 | 6 | | | 8 | | 4 | |
| Permitted Phases | 2 | | 2 | 6 | | 6 | 8 | | 4 | | 4 |
| Detector Phase | 5 | 2 | 2 | 1 | 6 | 6 | 8 | 8 | 4 | 4 | 4 |
| Switch Phase | | | | | | | | | | | |
| Minimum Initial (s) | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 |
| Minimum Split (s) | 8.0 | 20.0 | 20.0 | 8.0 | 20.0 | 20.0 | 20.0 | 20.0 | 20.0 | 20.0 | 20.0 |
| Total Split (s) | 10.0 | 65.0 | 65.0 | 10.0 | 65.0 | 65.0 | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 |
| Total Split (%) | 10.0% | 65.0% | 65.0% | 10.0% | 65.0% | 65.0% | 25.0% | 25.0% | 25.0% | 25.0% | 25.0% |
| Yellow Time (s) | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 |
| All-Red Time (s) | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 |
| Lead/Lag | Lead | Lag | Lag | Lead | Lag | Lag | | | | | |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | Yes | Yes | | | | | |
| Recall Mode | None | C-Max | C-Max | None | C-Max | C-Max | None | None | None | None | None |
| Act Effect Green (s) | 77.6 | 72.2 | 72.2 | 71.4 | 65.4 | 65.4 | 13.7 | 13.7 | 13.7 | 13.7 | 13.7 |
| Actuated g/C Ratio | 0.78 | 0.72 | 0.72 | 0.71 | 0.65 | 0.65 | 0.14 | 0.14 | 0.14 | 0.14 | 0.14 |
| v/c Ratio | 0.54 | 0.47 | 0.05 | 0.09 | 0.29 | 0.13 | 0.14 | 0.10 | 0.61 | 0.01 | 0.55 |
| Control Delay | 7.6 | 8.0 | 2.1 | 4.0 | 8.3 | 1.7 | 37.1 | 15.7 | 53.2 | 33.5 | 10.3 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 7.6 | 8.0 | 2.1 | 4.0 | 8.3 | 1.7 | 37.1 | 15.7 | 53.2 | 33.5 | 10.3 |
| LOS | A | A | A | A | A | A | D | B | D | C | B |
| Approach Delay | | 7.7 | | | 7.1 | | | 26.8 | | 24.6 | |
| Approach LOS | | A | | | A | | | C | | C | |

Intersection Summary

























| |
|---|
| Cycle Length: 100 |
| Actuated Cycle Length: 100 |
| Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green |
| Natural Cycle: 55 |
| Control Type: Actuated-Coordinated |
| Maximum v/c Ratio: 0.61 |
| Intersection Signal Delay: 9.9 |
| Intersection Capacity Utilization 57.5% |
| Analysis Period (min) 15 |
| Intersection LOS: A |
| ICU Level of Service B |

Splits and Phases: 5: Towner Ave & Briargate Pkwy



Timings
6: Meridian Rd & Briargate Pkwy

2040 Total Traffic
PM Peak Hour

| |  |  |  |  |  |  |  |  |  |  |  |  |
|----------------------|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations |  |  |  |  |  |  |  |  |  |  |  |  |
| Traffic Volume (vph) | 465 | 1135 | 319 | 335 | 967 | 184 | 408 | 457 | 451 | 92 | 266 | 301 |
| Future Volume (vph) | 465 | 1135 | 319 | 335 | 967 | 184 | 408 | 457 | 451 | 92 | 266 | 301 |
| Turn Type | Prot | NA | Perm | Prot | NA | Free | Prot | NA | Free | pm+pt | NA | Perm |
| Protected Phases | 7 | 4 | | 3 | 8 | | 5 | 2 | | 1 | 6 | |
| Permitted Phases | | | 4 | | | Free | | | Free | 6 | | 6 |
| Detector Phase | 7 | 4 | 4 | 3 | 8 | | 5 | 2 | | 1 | 6 | 6 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | | 4.0 | 4.0 | | 4.0 | 4.0 | 4.0 |
| Minimum Split (s) | 9.0 | 9.0 | 9.0 | 9.0 | 9.0 | | 9.0 | 9.0 | | 9.0 | 9.0 | 9.0 |
| Total Split (s) | 22.0 | 42.0 | 42.0 | 18.0 | 38.0 | | 21.0 | 29.0 | | 11.0 | 19.0 | 19.0 |
| Total Split (%) | 22.0% | 42.0% | 42.0% | 18.0% | 38.0% | | 21.0% | 29.0% | | 11.0% | 19.0% | 19.0% |
| 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 | Lag | Lead | Lag | | Lead | 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 Effect Green (s) | 16.2 | 35.5 | 35.5 | 12.5 | 31.8 | 95.4 | 15.0 | 23.8 | 95.4 | 18.3 | 12.3 | 12.3 |
| Actuated g/C Ratio | 0.17 | 0.37 | 0.37 | 0.13 | 0.33 | 1.00 | 0.16 | 0.25 | 1.00 | 0.19 | 0.13 | 0.13 |
| v/c Ratio | 0.81 | 0.88 | 0.43 | 0.76 | 0.84 | 0.12 | 0.77 | 0.53 | 0.29 | 0.41 | 0.59 | 0.71 |
| Control Delay | 51.2 | 37.6 | 7.6 | 53.0 | 37.6 | 0.2 | 50.0 | 34.7 | 0.5 | 30.1 | 45.6 | 17.7 |
| 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 | 51.2 | 37.6 | 7.6 | 53.0 | 37.6 | 0.2 | 50.0 | 34.7 | 0.5 | 30.1 | 45.6 | 17.7 |
| LOS | D | D | A | D | D | A | D | C | A | C | D | B |
| Approach Delay | | 35.9 | | | 36.4 | | | 27.7 | | | 30.7 | |
| Approach LOS | | D | | | D | | | C | | | C | |

Intersection Summary

Cycle Length: 100

Actuated Cycle Length: 95.4

Natural Cycle: 70

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.88

Intersection Signal Delay: 33.4

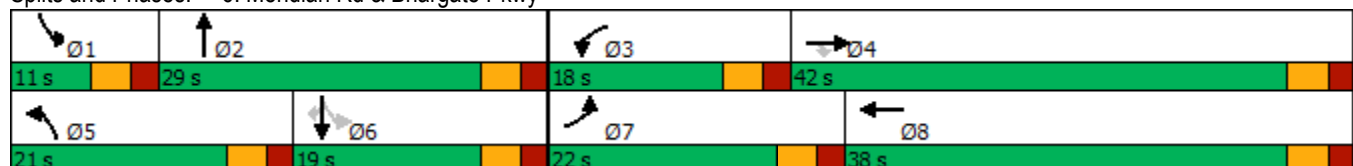
Intersection LOS: C

Intersection Capacity Utilization 76.6%

ICU Level of Service D

Analysis Period (min) 15

Splits and Phases: 6: Meridian Rd & Briargate Pkwy





















HCM 6th Roundabout
13: Woodmen Hills Dr & Residential Collector

2040 Total Traffic
PM Peak Hour

| Intersection | | | | |
|-----------------------------|-------|-------|-------|-------|
| Intersection Delay, s/veh | 4.9 | | | |
| 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 | 37 | 124 | 263 | 301 |
| Demand Flow Rate, veh/h | 38 | 127 | 268 | 307 |
| Vehicles Circulating, veh/h | 321 | 231 | 149 | 82 |
| Vehicles Exiting, veh/h | 68 | 186 | 210 | 275 |
| Ped Vol Crossing Leg, #/h | 0 | 0 | 0 | 0 |
| Ped Cap Adj | 1.000 | 1.000 | 1.000 | 1.000 |
| Approach Delay, s/veh | 4.1 | 4.4 | 5.1 | 5.0 |
| 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 | 38 | 127 | 268 | 307 |
| Cap Entry Lane, veh/h | 995 | 1090 | 1185 | 1269 |
| Entry HV Adj Factor | 0.973 | 0.976 | 0.980 | 0.980 |
| Flow Entry, veh/h | 37 | 124 | 263 | 301 |
| Cap Entry, veh/h | 967 | 1064 | 1162 | 1244 |
| V/C Ratio | 0.038 | 0.116 | 0.226 | 0.242 |
| Control Delay, s/veh | 4.1 | 4.4 | 5.1 | 5.0 |
| LOS | A | A | A | A |
| 95th %tile Queue, veh | 0 | 0 | 1 | 1 |

Timings
16: Meridian Rd & Woodmen Hills Dr/Raygor Rd

2040 Total Traffic
PM Peak Hour

| |  |  |  |  |  |  |  |  |  |  |
|----------------------|---|---|---|---|---|---|--|---|---|---|
| Lane Group | EBL | EBT | WBL | WBT | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | |  | |  |  |  |  |  |  |  |
| Traffic Volume (vph) | 5 | 63 | 46 | 51 | 236 | 1303 | 75 | 18 | 884 | 17 |
| Future Volume (vph) | 5 | 63 | 46 | 51 | 236 | 1303 | 75 | 18 | 884 | 17 |
| Turn Type | Perm | NA | Perm | NA | pm+pt | NA | Perm | pm+pt | NA | Perm |
| Protected Phases | | 4 | | 8 | 5 | 2 | | 1 | 6 | |
| Permitted Phases | 4 | | 8 | | 2 | | 2 | 6 | | 6 |
| Detector Phase | 4 | 4 | 8 | 8 | 5 | 2 | 2 | 1 | 6 | 6 |
| Switch Phase | | | | | | | | | | |
| Minimum Initial (s) | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 |
| Minimum Split (s) | 9.0 | 9.0 | 9.0 | 9.0 | 9.0 | 9.0 | 9.0 | 9.0 | 9.0 | 9.0 |
| Total Split (s) | 35.0 | 35.0 | 35.0 | 35.0 | 10.0 | 55.0 | 55.0 | 10.0 | 55.0 | 55.0 |
| Total Split (%) | 35.0% | 35.0% | 35.0% | 35.0% | 10.0% | 55.0% | 55.0% | 10.0% | 55.0% | 55.0% |
| 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 |
| 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 | None | None | None | None | None |
| Act Effect Green (s) | | 10.9 | | 10.9 | 35.3 | 33.8 | 33.8 | 31.3 | 25.9 | 25.9 |
| Actuated g/C Ratio | | 0.19 | | 0.19 | 0.60 | 0.58 | 0.58 | 0.53 | 0.44 | 0.44 |
| v/c Ratio | | 0.56 | | 0.51 | 0.67 | 0.65 | 0.08 | 0.07 | 0.58 | 0.02 |
| Control Delay | | 19.9 | | 33.1 | 17.5 | 11.4 | 2.5 | 4.9 | 13.0 | 0.1 |
| Queue Delay | | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | | 19.9 | | 33.1 | 17.5 | 11.4 | 2.5 | 4.9 | 13.0 | 0.1 |
| LOS | | B | | C | B | B | A | A | B | A |
| Approach Delay | | 19.9 | | 33.1 | | 11.9 | | | 12.6 | |
| Approach LOS | | B | | C | | B | | | B | |

Intersection Summary

Cycle Length: 100

Actuated Cycle Length: 58.7

Natural Cycle: 60

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.67

Intersection Signal Delay: 13.5







Intersection LOS: B

Intersection Capacity Utilization 74.1%

ICU Level of Service D

























Analysis Period (min) 15

Splits and Phases: 16: Meridian Rd & Woodmen Hills Dr/Raygor Rd

| | | |
|---|---|---|
|  |  |  |
| 10 s | 55 s | 35 s |
|  |  |  |
| 10 s | 55 s | 35 s |

Timings
163: Meridian Rd & Woodmen Rd

2040 Total Traffic
PM Peak Hour

| |  |  |  |  |  |  |  |  |  |  |  |  |
|----------------------|---|---|---|---|---|---|--|---|---|---|---|---|
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations |  |  |  |  |  |  |  |  |  |  |  |  |
| Traffic Volume (vph) | 785 | 794 | 375 | 225 | 665 | 258 | 465 | 884 | 200 | 480 | 696 | 602 |
| Future Volume (vph) | 785 | 794 | 375 | 225 | 665 | 258 | 465 | 884 | 200 | 480 | 696 | 602 |
| Turn Type | Prot | NA | Free | Prot | NA | Perm | Prot | NA | Free | Prot | NA | Free |
| Protected Phases | 5 | 2 | | 1 | 6 | | 3 | 8 | | 7 | 4 | |
| Permitted Phases | | | Free | | | 6 | | | Free | | | Free |
| Detector Phase | 5 | 2 | | 1 | 6 | 6 | 3 | 8 | | 7 | 4 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 5.0 | 5.0 | | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | | 5.0 | 5.0 | |
| Minimum Split (s) | 10.0 | 11.5 | | 10.0 | 11.5 | 11.5 | 10.0 | 11.5 | | 10.0 | 11.5 | |
| Total Split (s) | 32.0 | 44.0 | | 17.0 | 29.0 | 29.0 | 24.0 | 36.0 | | 23.0 | 35.0 | |
| Total Split (%) | 26.7% | 36.7% | | 14.2% | 24.2% | 24.2% | 20.0% | 30.0% | | 19.2% | 29.2% | |
| Yellow Time (s) | 3.0 | 4.5 | | 3.0 | 4.5 | 4.5 | 3.0 | 4.5 | | 3.0 | 4.5 | |
| All-Red Time (s) | 2.0 | 2.0 | | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | | 2.0 | 2.0 | |
| Lost Time Adjust (s) | -1.0 | -1.0 | | -1.0 | -1.0 | -1.0 | -1.0 | -1.0 | | -1.0 | -1.0 | |
| Total Lost Time (s) | 4.0 | 5.5 | | 4.0 | 5.5 | 5.5 | 4.0 | 5.5 | | 4.0 | 5.5 | |
| Lead/Lag | Lead | Lag | | Lead | Lag | Lag | Lead | Lag | | Lead | Lag | |
| Lead-Lag Optimize? | Yes | Yes | | Yes | Yes | Yes | Yes | Yes | | Yes | Yes | |
| Recall Mode | None | Min | | None | Min | Min | None | None | | None | None | |
| Act Effect Green (s) | 28.0 | 39.0 | 120.0 | 12.5 | 23.5 | 23.5 | 19.6 | 30.5 | 120.0 | 19.0 | 29.9 | 120.0 |
| Actuated g/C Ratio | 0.23 | 0.32 | 1.00 | 0.10 | 0.20 | 0.20 | 0.16 | 0.25 | 1.00 | 0.16 | 0.25 | 1.00 |
| v/c Ratio | 1.00 | 0.70 | 0.24 | 0.64 | 0.98 | 0.50 | 0.85 | 1.00 | 0.13 | 0.90 | 0.80 | 0.39 |
| Control Delay | 78.0 | 39.6 | 0.4 | 60.4 | 77.9 | 8.6 | 63.6 | 75.7 | 0.2 | 70.7 | 50.6 | 0.7 |
| 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 | 78.0 | 39.6 | 0.4 | 60.4 | 77.9 | 8.6 | 63.6 | 75.7 | 0.2 | 70.7 | 50.6 | 0.7 |
| LOS | E | D | A | E | E | A | E | E | A | E | D | A |
| Approach Delay | | 47.5 | | | 58.9 | | | 62.3 | | | 39.1 | |
| Approach LOS | | D | | | E | | | E | | | D | |

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Natural Cycle: 110

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 1.00

Intersection Signal Delay: 50.8

Intersection LOS: D

Intersection Capacity Utilization 94.7%

ICU Level of Service F

Analysis Period (min) 15

Splits and Phases: 163: Meridian Rd & Woodmen Rd

