

Banning Lewis Ranch

Villages A – D

Master Traffic Impact Study

Prepared for:
Oakwood Homes
1290 Newport Road
Colorado Springs, CO 80916

Contact: Mr. Jarrod Walker

NOVEMBER 13, 2020

LSC Transportation Consultants, Inc.
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Principal

LSC #204160



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November 13, 2020

Jarrold Walker
Oakwood Homes
1290 Newport Road
Colorado Springs, CO 80916

RE: Banning Lewis Ranch, Villages A - D
Master Traffic Impact Study
Colorado Springs, Colorado
LSC #204160

Dear Mr. Walker:

In response to your request, LSC Transportation Consultants, Inc. has prepared this master traffic impact study (TIS) for the Banning Lewis Ranch Villages A, B, C, and D. As shown in Figure 1, the site is located in northeast Colorado Springs, in the Banning Lewis Ranch Subdivision. The Villages will be located east of the proposed Banning Lewis Parkway, both north and south of the future Dublin Boulevard extension.

SECTION 1 - INTRODUCTION

REPORT CONTENTS

The preparation of this report included the following:

- An inventory of existing roadway and traffic conditions on the adjacent and nearby roadway system, including surface conditions, functional classification, widths, pavement markings, traffic-control signs, posted speed limits, intersection and access spacing, roadway and intersection alignments, roadway grades, and auxiliary turn lanes;
- Weekday peak-hour turning-movement traffic counts at the following intersections:
 - Marksheffel Road/Woodmen Road
 - Marksheffel Road/Dublin Boulevard
 - Marksheffel Road/Vista Cerro Avenue
 - Vista Del Pico/Dublin Boulevard
- Estimated current average weekday traffic (AWT) volumes on the study-area streets;

- Projections of short-term and long-term (20-year) background traffic volumes on the study-area streets and intersections, based on planned roadway connections (by scenario) and information available regarding approved or planned nearby developments;
- The proposed site land uses;
- Estimates of average weekday and weekday peak-hour trip generation for the proposed development, by phase/scenario, and the corresponding estimated directional distribution of site-generated vehicle trips on the area street and roadway network;
- Projected site-generated and resulting total peak-hour intersection traffic volumes at the study intersections:
 - Marksheffel Road/Woodmen Road
 - Marksheffel Road/Dublin Boulevard
 - Marksheffel Road/Vista Cerro Avenue
 - Vista Del Pico/Dublin Boulevard
- Level of service analysis at the external intersections for three roadway connection scenarios;
- Level of service analysis at the study-area intersections for existing, short-term, and buildout traffic scenarios;
- Short-term and buildout (master-plan level) projected intersection analysis to determine intersection traffic control, auxiliary right-/left-turn lane needs, and other recommendations
- Intersection analysis;
- Future road connection analysis; and
- Findings and recommendations.

For the purposes of this report, three scenarios have been analyzed:

- **Immediate-Term** – The immediate-term scenario includes Village A1 of the proposed development. The immediate-term baseline/“background” land uses includes the buildout of all of Banning Lewis Ranch Villages to the west currently under construction. The immediate-term analysis determines how much of Village A1 can be constructed before Banning Lewis Parkway is required.
- **Short-Term** – The short-term scenario includes Village A1 and Village B1 of the proposed development, as these are planned to be developed first. The short-term baseline/background land uses include the buildout of all of Banning Lewis Ranch Villages to the west currently under construction. The short-term analysis assumes no additional roadway connections to Banning Lewis Ranch, but does assume roadway improvements to existing intersections.
- **Long-Term/Buildout** – The long-term scenario includes full buildout of the proposed Villages A-D development. The long-term baseline/background land uses also include the buildout of all of Banning Lewis Ranch Villages currently under construction (as assumed in the short-term scenario). The traffic volume estimates for this scenario have been

developed, in part, using the Pikes Peak Area Council of Governments (PPACG) travel demand model. The analysis assumes the following road connections:

- A connection to US Highway 24 via the east portion of the planned Stetson Hills Boulevard
- Banning Lewis Parkway is extended to Woodmen Road

RECENT TRAFFIC REPORTS

The following traffic reports and plans were utilized in the preparation of this report:

- *Banning Lewis Ranch Village Three*, March 2017
- *Banning Lewis Ranch Village B Phase 1*, May 2020
- *Banning Lewis Ranch Master Plan*, June 2015

SECTION 2 - LAND USE, EXISTING CONDITIONS AND TRIP GENERATION

Figure 1 shows the site location relative to the adjacent and nearby streets and roadways. As shown, the site is both north and south of the future extension of Dublin Boulevard to the east of the planned Banning Lewis Parkway. This development is part of the existing Banning Lewis Ranch Subdivisions, which includes Villages One, Two, and Three.

Existing/Approved Banning Lewis Ranch Development (Villages One, Two, and Three)

Village One has been fully constructed, as has Phase One of Village Two. The remainder of Village Two is partially constructed, and Village Three is just beginning construction.

The primary existing access to Villages One through Three of Banning Lewis Ranch Subdivision is via Dublin Boulevard, which includes multiple access points to Villages One, Two, and Three. There is an additional access at the intersection of Marksheffel Road/Vista Cerro Avenue.

Currently Proposed Villages A1, A2, B1, B2, C, and D

The site includes a total of approximately 1,560 acres, as shown in Figure 2a. Villages A-D are proposed to include residential and commercial land use, as well as several schools. Figure 2b and Figure 2c show additional detail regarding Villages A1 and B1, respectively. Figure 2b also shows the Village A1 Development Plan 1 site.

Future access will be off of the future extension of Dublin Boulevard, the future Banning Lewis Parkway, and the future segment of Stetson Hills Boulevard.

Village A1 and B1 are planned to be developed first.

EXISTING ROAD AND TRAFFIC CONDITIONS

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

Dublin Boulevard is a Principal Arterial that currently extends east from Nevada Avenue to Vista del Tierra Drive. The section of Dublin Boulevard immediately east of Marksheffel Road has three through lanes in each direction and a raised median. East of Vista del Valley Drive, the roadway is reduced to two through lanes in each direction. The posted speed limit on Dublin Boulevard in Banning Lewis Ranch is 35 mph.

Woodmen Road is an east/west Expressway through the northern portion of the City of Colorado Springs and El Paso County. Woodmen Road is a four-lane facility north of Banning

Lewis Ranch. The posted speed limit on Woodmen Road in the vicinity of the site is 55 miles per hour (mph).

Marksheffel Road extends north from C&S Road to just north of Woodmen Road. Marksheffel Road south of US Hwy 24 is being upgraded to a four-lane Principal Arterial. Between North Carefree Circle and Dublin Boulevard, Marksheffel Road has one through lane in each direction. There is a section of Marksheffel Road south of Woodmen Road that is also one through lane in each direction. The posted speed limit on Marksheffel Road in the vicinity of Banning Lewis Ranch is 45 mph. Marksheffel Road is planned to be extended northwest to Vollmer Road in the future.

US Highway 24 (US Hwy 24) extends from Colorado Springs at State Highway (SH) 21 to Limon. Near the site, US Hwy 24 is classified as an Expressway (E-X). At this location, US Hwy 24 is a four-lane urban highway with a painted median and a speed limit of 55 mph.

Existing Traffic Volumes

Figure 3 shows the results of peak-hour traffic volume counts conducted in March and June 2020 at the following intersections:

- Marksheffel Road/Woodmen Road (June 2020)
- Marksheffel Road/Dublin Boulevard (March 2020)
- Marksheffel Road/Vista Cerro (June 2020)
- Vista Del Pico/Dublin (June 2020)

The figure also shows existing lane geometries and traffic controls. It should be noted that the June 2020 counts occurred when the COVID-19 pandemic was impacting traffic volumes and, therefore, the volumes are lower than would typically be experienced during the peak hours.

Existing Levels of Service

Study intersections were analyzed to determine the current intersection levels of service. Level of service (LOS) is a quantitative measure of the level of congestion or delay at an intersection and is indicated on a scale from "A" to "F." LOS A is indicative of little congestion or delay. LOS F indicates a high level of congestion or delay. Table 1 shows the level of service delay ranges for signalized and unsignalized intersections.

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 per vehicle.

As shown in Figure 3, with the exception of a few turning movements at the intersection of Marksheffel/Dublin Boulevard, all turning movements operate at LOS D or better during the peak hours.

TRIP GENERATION

Estimates of site-generated vehicle trips for the proposed development were made using the nationally published trip generation rates from *Trip Generation, 10th Edition, 2017* by the Institute of Transportation Engineers (ITE). Table 3 provides a detailed trip generation for Villages A-D. In the analysis, internal trips were calculated per village, not for the entire development. Therefore, trips between Villages are shown as external trips generated by the site. A small number of trips were assigned between Villages as part of the analysis, but most trips were assigned to external roadways outside of Banning Lewis Ranch. As a result, the analysis can be considered to be conservative as it likely underestimates trips between Villages that would be internal to the proposed development.

As shown, the entire development is anticipated to generate approximately 61,984 total daily trips on the average weekday. During the morning peak hour, approximately 2,101 vehicles would enter, and 3,373 vehicles would exit the site. During the evening peak hour, approximately 3,764 vehicles would enter, and 2,442 vehicles would exit.

SECTION 3 – MAJOR ROADWAY CONNECTION STAGE ANALYSES AND FINDINGS

FUTURE ROADWAY CONNECTION PHASING ANALYSIS

Overview and Summary of Findings

A sensitivity analysis was conducted to identify the future roadway improvements necessary and the timing of these improvements related to the development. Only major external intersections were analyzed with this analysis as it was assumed that the intersections rather than roadway segments, including existing Dublin Boulevard through Villages 1-3, would be the “limiting factor” with respect to traffic capacity.

Three stages were developed and analyzed. For each stage, the amount of development that could occur without additional improvements was identified.

Table 2 provides an overview of the improvements and new road connections assumed with each stage, as well as the amount of development that could occur without exceeding the offsite intersection capacity. Additional details regarding the road improvements and analysis are provided in the following sections.

Table 2: Roadway Connection Phasing Stages

Stage	Improvements	Development
1	Marksheffel Road/Dublin Boulevard intersection improvements	Village B1 50% Village A Residential
2	Stetson Hills Road connection to US Hwy 24	Village B1 Village A Residential 25% Village A Commercial
3	Banning Lewis Parkway connection to Woodmen Road	Village A-D

Description of Roadway Connection Stages

New roadway connections (are necessary for the buildout of the site. Figure 4 shows the timing of the roadway connections (and associated intersection improvements) by stage. For this analysis, three stages were analyzed, each with a new roadway connection assumption (Stage 1 assumes existing Dublin to the west, but includes interim intersection capacity improvements at Dublin/Marksheffel). The stages assume the following:

- Stage 1
 - Restriping (widening as necessary) Marksheffel Road through the Dublin Boulevard intersection to four-lanes
 - Striping additional turn lanes at the Marksheffel Road/Dublin Boulevard intersection
- Stage 2
 - All improvements from Stage 1
 - Stetson Hills Road extending to the east to connect with US Hwy 24
- Stage 3
 - All improvements from Stages 1 and 2
 - Banning Lewis Parkway extending to the north to connect with Woodmen Road
 - Woodmen Road widened to six-lanes
 - US Hwy 24 widened to six-lanes
 - Marksheffel Road extending beyond Vollmer Road to connect with Research Parkway

STAGE 1

STAGE ANALYSIS AND FINDINGS

Stage 1 assumes improvements at the intersection of Marksheffel Road/Dublin Boulevard have been completed. Primarily restriping improvements, it was assumed that Marksheffel Road would have two through lanes in each direction through the intersection and that dual left-turn lanes have been striped in where necessary. Additionally, it has been assumed that Marksheffel Road has been extended northwest to Vollmer Road.

With the improvement assumed in Stage 1, it was found that all of Village B1 and 50 percent of the Village A1 residential could be developed before an additional roadway connection is required.

STAGE 1 DETAILS AND RESULTS

Background Traffic

Background traffic is traffic that is anticipated to occur without the addition of the proposed development. Figure 5 shows the projected Stage 1 background traffic volumes. The background traffic assumes that Banning Lewis Ranch Villages Two and Three, as well as the Mountain Valley Preserve, have been completed.

Trip Distribution and Assignment

Estimating the directional distribution of site-generated vehicle-trips to the study-area roads and intersections is a necessary component in determining the site's traffic impacts. Figure 6 shows the traffic distribution for the stage. Estimates have been based on the PPACG travel demand model, as well as existing traffic patterns. Site-generated traffic volumes are also provided in the

figure and were calculated by applying the directional distribution percentages to the trip-generation estimates.

Total Traffic Volumes

Figure 7 shows the sum of the stage background traffic volumes (from Figure 5) and site-generated peak-hour traffic volumes (shown in Figure 6). These volumes represent the projected total traffic following the construction of Village B1 and 50 percent of the Village A1 residential. Laneage and traffic control at the study-area intersections are also shown in this figure.

Levels of Service

In the Stage 1 background, the intersection of Marksheffel Road/Dublin Boulevard will operate at an overall LOS D with the improvements mentioned previously. With the total traffic for the stage, the intersection will continue to operate at LOS D.

The intersection of Marksheffel Road/Woodmen Road is projected to operate at LOS D during the morning peak hour and LOS E during the afternoon peak hour both with and without the site-generated traffic.

STAGE 2

STAGE 2 SUMMARY AND FINDINGS

As mentioned previously, Stage 2 assumes all Stage 1 improvement. Additionally, the stage includes the extension of Stetson Hills Road to US Hwy 24. This connection is planned to align with the existing Garrett Road.

With the improvement included in Stage 2, it was found that all of Village B1, all of Village A1 residential, and 25 percent of the Village A1 commercial could be developed before an additional roadway connection was required.

STAGE 2 DETAILS AND RESULTS

Background Traffic

Figure 8 shows the projected Stage 2 background traffic volumes. Like Stage 1, Stage 2 assumes that Banning Lewis Ranch Villages Two and Three, as well as the Mountain Valley Preserve, have been developed. Additionally, the background traffic has been revised to account for the new connection to US Hwy 24. It is assumed that a portion of the Village Two and Three traffic would use the new connection rather than take Dublin Boulevard to Marksheffel Road.

Trip Distribution and Assignment

Figure 9 shows the traffic distribution and site generated traffic for Stage 2. Traffic distribution estimates were based on the PPACG travel demand model runs.

Total Traffic Volumes

Figure 10 shows the projected total traffic following the construction of Village B1, Village A1 residential, and 25 percent of the Village A1 commercial. The total traffic is the sum of the stage background traffic volumes (from Figure 8) and site-generated peak-hour traffic volumes (shown in Figure 9).

Levels of Service

In Stage 2, all study intersections are projected to operate at LOS D or better both with and without the site-generated traffic with the exception of Marksheffel Road/Woodmen Road. This intersection is projected to operate at LOS E during the afternoon peak hour with both the background and total traffic volumes.

STAGE 3

STAGE 3 SUMMARY AND FINDINGS

Stage 3 includes all improvements from Stages 1 and 2. Additionally, the stage includes the extension of Banning Lewis Parkway to Woodmen Road.

With the improvement assumed in Stage 3, it was found that the entire proposed development, including Villages A through D could be constructed.

STAGE 3 DETAILS AND RESULTS

Background Traffic

Stage 3 uses year 2040 projected traffic volumes. The 2040 background traffic was developed using the Pikes Peak Regional Council of Governments (PPACG) travel demand model. The land use for the proposed Villages A-D was zeroed out in the model and roadway connections were added/deleted as necessary to match the proposed roadways connections for the scenario. The results then went through a calibration and adjustment process, along with turn-movement forecasting using NCHRP Report 765 methodology to develop turning movements at the major intersections. Similar to previous stages, the background traffic assumes the buildout of Banning Lewis Ranch Villages Two and Three, as well as the Mountain Valley Preserve. Traffic has been revised to account for the new roadway connection. It is assumed that some traffic from the background villages would use the new connection. Additionally, a small volume of cut-through

traffic has been included in the background traffic as well. Figure 11 shows the projected Stage 3 background traffic volumes.

Trip Distribution and Assignment

Figure 12 shows the traffic distribution and site generated traffic for Stage 3. Traffic distribution estimates were based on the PPACG travel demand model runs.

Total Traffic Volumes

Figure 13 shows the sum of the stage background traffic volumes (from Figure 11) and site-generated peak-hour traffic volumes (shown in Figure 12). These volumes represent the projected total traffic following the buildout of the development. Laneage and traffic control at the study-area intersections are also shown in this figure.

Levels of Service

In Stage 3, all study intersections are projected to operate at LOS D or better both with and without the site-generated traffic with the exception of Marksheffel Road/Woodmen Road. This intersection is projected to operate at LOS D during both peak hours in the background, due to the roadway being widened to six through lanes. However, in the total traffic stage, the intersection is expected to operate at LOS E during the morning peak hour and LOS F during the afternoon peak hour.

SECTION 4 – MASTER PLAN AND SHORT-TERM DEVELOPMENT ANALYSIS

VILLAGES A-D STREET NETWORK

Figure 14 shows the planned access points for Banning Lewis Ranch Villages A-D. Also shown is the access control type, as well as distances between the proposed accesses. Access points have been laid out to ensure they meet minimum spacing criteria identified in the City of Colorado Springs' *Traffic Criteria Manual*.

Figure 15 displays the identified functional classification for future and existing roadways along with the proposed laneage. The figure also shows the long-term daily traffic volumes with the full buildout of the proposed development.

IMMEDIATE-TERM FUTURE DEVELOPMENT SCENARIO

Land Use and Street Infrastructure

The scenario assumes development of Village A1 Development Plan 1. As shown in Figure 16, during the initial construction, access will be provided to the housing through Village 3. It is estimate that approximately 80 dwelling units can be constructed before the Village 3 street network is at capacity. At that time, Banning Lewis Ranch between the Village A1 south access and Dublin Boulevard will need to be constructed.

Trip Generation

Estimates of site-generated vehicle trips were made using the nationally published trip-generation rates from *Trip Generation, 10th Edition, 2017* by the Institute of Transportation Engineers (ITE). Table 4 provides a detailed trip generation for the immediate-term analysis. Approximately 847 total daily trips are projected to enter and exit the site on the average weekday. During the morning peak hour, approximately 17 vehicles would enter, and 49 vehicles would exit the site. During the evening peak hour, approximately 66 vehicles would enter, and 31 vehicles would exit. Because no other land uses would be constructed at this time, no internal trip generation was calculated.

SHORT-TERM FUTURE DEVELOPMENT SCENARIO

Land Use and Street Infrastructure

The scenario assumes development of Village B1, Village A1 residential, and 50 percent of Village A1 commercial. The trip generation, internal capture, and pass-by trips for the commercial development will be highly dependent on the type of commercial properties developed. The

commercial development should be further analyzed with the concept plan as the estimates of commercial traffic is subject to change.

The short-term development scenario is similar to the “Roadway Connection Stage 2” previously discussed in this report. The scenario assumes that there have been interim capacity improvements to the Marksheffel Road/Dublin Boulevard intersection and that Stetson Hills Drive has been extended to US Hwy 24.

Trip Generation

Table 5 provides a detailed trip generation for the short-term analysis. Approximately 11,188 total daily trips are projected to enter and exit the site on the average weekday. During the morning peak hour, approximately 312 vehicles would enter, and 637 vehicles would exit the site. During the evening peak hour, approximately 656 vehicles would enter, and 427 vehicles would exit.

Trip Distribution and Assignment

Estimating the directional distribution of site-generated vehicle-trips to the study-area roads and intersections is a necessary component in determining the site’s traffic impacts. Figure 16: Immediate Term (Village A1 DP1)

Figure 17 shows the traffic distribution for the short-term scenario. Estimates have been based on the PPACG travel demand model, as well as existing traffic patterns.

Short-term site-generated traffic volumes have been estimated at the study intersections, as shown in Figure 18. These volumes have been calculated by applying the directional distribution percentages to the trip generation estimates (from Table 4).

Background Traffic

Background traffic is traffic that is anticipated to occur without the addition of the proposed development. Figure 19 shows the projected short-term background traffic volumes. It has been assumed that Banning Lewis Ranch Villages Two and Three, as well as the Mountain Valley Preserve, have been completed. Traffic volumes were revised to account for the new roadway connection to US Hwy 24.

Total Traffic Volumes

Figure 20 shows the sum of the short-term background traffic volumes (from Figure 19) and site-generated peak-hour traffic volumes (shown in Figure 18). These volumes represent the projected short-term total traffic following the construction of Village B1, Village A1 residential, and 25 percent of Village A1 commercial. Laneage and traffic control at the study-area intersections are also shown in this figure.

Levels of Service

Marksheffel Road/Dublin Boulevard

In the short-term background, the intersection of Marksheffel Road/Dublin Boulevard will operate at an overall LOS D or better during both peak hours with the improvements mentioned previously. In the short-term total, the intersection will operate at LOS D during both peak hours.

Marksheffel Road/Woodmen Road

In the short-term background, it is anticipated the intersection of Marksheffel Road/Woodmen Road will operate at LOS D during the morning peak hour and LOS E during the afternoon peak hour. In the short-term total, the intersection is projected to operate at LOS F during both peak hours.

Stetson Hills Road/US Hwy 24

Both with and without the site-generated traffic, the Stetson Hills Road/US Hwy 24 intersection is expected to operate at LOS D or better during both peak hours in the short-term future.

Unsignalized Intersections

All unsignalized intersections within the study area are anticipated to have turning movements operate at acceptable levels of service, both with and without the site generated traffic, with the exception of the intersection of Marksheffel Road/Vista Cerro Avenue. The westbound left at this intersection is forecast to operate at LOS E during the afternoon peak hour in the background and LOS E during both peak hours with the addition of the site-generated traffic. It should be noted that no site-generated traffic is expected to use this access. The increase in delay for the westbound left-turning vehicles is due to the increase in traffic on Marksheffel Road.

LONG-TERM (20 YEAR) FUTURE/DEVELOPMENT BUILDOUT

Land Use and Street Infrastructure

The long-term scenario is similar to Roadway Connection Stage 3 previously discussed in this report. The scenario assumes that Banning Lewis Parkway has been connected to Woodmen Road in a signalized intersection. This scenario assumes full buildout of the development. Additionally, it has been assumed that Woodmen Road and US Hwy 24 have both been widened to have six-through lanes.

Trip Generation

Table 3 provides a detailed trip generation for Villages A-D. As shown, the entire development is anticipated to generate approximately 60,400 total daily trips on the average weekday. During the morning peak hour, approximately 2,142 vehicles would enter, and 3,295 vehicles would exit the site. During the evening peak hour, approximately 3,576 vehicles would enter, and 2,347 vehicles would exit.

Total Traffic Volumes

The PPACG travel demand model was used along with a Traffix model to forecast buildout daily and peak-hour traffic volumes on the roadway network with the buildout of Banning Lewis Ranch Villages A-D. See the section on Stage 3 Background Traffic for more information on the 2040 background traffic used in this analysis.

Figure 21 provides the peak-hour turning-movement volumes at the study-area intersections. Laneage and traffic control at the study-area intersections are also shown in this figure.

Levels of Service

Signalized Intersections

All signalized intersections within the study area are expected to operate at acceptable levels of service in the long term with the buildout of the site, with the exception of the intersection of Marksheffel/Woodmen Road. This intersection is expected to operate at LOS E during the morning peak and LOS F during the afternoon peak. However, it should be noted that the extension of Banning Lewis Parkway to the north was not assumed in this study. Extending Banning Lewis Parkway north of Woodmen Road could improve operations at the Marksheffel Road/Woodmen Road intersection.

Unsignalized Intersections

The unsignalized intersection of Marksheffel Road/Vista Cerro Avenue is projected to have the westbound left operate at LOS F in the future. All other unsignalized intersection movements are projected to operate at LOS D or better in the long-term buildout.

SECTION 5 – CONCLUSIONS AND RECOMMENDATIONS

SHORT TERM

The short-term scenario assumes that Stetson Hills Road has been connected to US Hwy 24. The scenario includes Village B1, Village A1 residential, and 25 percent of Village A1 commercial. The commercial will need to be analyzed further at the concept plan.

Marksheffel Road/Dublin Boulevard

- In the short-term background, improvements will be required to get the intersection of Marksheffel Road/ Dublin Boulevard to operate at an overall LOS D. These improvements include:
 - Widening Marksheffel Road to four-lanes through the intersection;
 - Adding dual left-turn lanes to the eastbound, westbound, and southbound movements.
- In the short-term total, the intersection will continue to operate at LOS D with the above improvements.

Marksheffel Road/Woodmen Road

- In the short-term background, it has been assumed that Marksheffel Road has been extended to Vollmer Road. With this roadway network change, it is anticipated that the intersection will operate at LOS D during the morning peak hour and LOS E during the afternoon peak hour.
- In the short-term total, the intersection will continue to operate at LOS D during the morning peak hour and LOS E during the afternoon peak hour.

Unsignalized Intersections

- The intersection of Marksheffel Road/Vista Cerro Avenue has movements that operate at LOS E or F in the short-term scenarios.
- All other intersections are anticipated to have turning movements that operate at LOS D or better.

BUILDOUT

The long-term scenario includes the connection of Banning Lewis Parkway to Woodmen Road. This scenario includes the full buildout of Villages A through D.

Marksheffel Road/Dublin Boulevard

- In the long-term total, the intersection will continue to operate at LOS D with the addition of Villages A-D.

Marksheffel Road/Woodmen Road

- In the buildout scenario, it has been assumed that Marksheffel Road has been extended from Vollmer Road to Research Parkway. Additionally, it has been assumed that Woodmen Road would be widened to six-lanes. The intersection is anticipated to operate at LOS E during the morning peak hour and LOS F during the afternoon peak hour. The analysis did not assume Banning Lewis Parkway was extended north of Woodmen Road.

Dublin Boulevard

- Dublin Boulevard should be constructed as a six-lane roadway between Banning Lewis Parkway and the commercial access.
- Dublin Boulevard should be a four-lane roadway to the east of the commercial access.
- The signalized intersections of Dublin Boulevard with Banning Lewis Parkway and the site access points are all anticipated to operate at acceptable levels of service.

Banning Lewis Parkway

- Banning Lewis Parkway should be constructed as a four-lane roadway with auxiliary lanes at intersections.
- All signalized and unsignalized intersections along Banning Lewis Parkway are expected to operate at acceptable levels of service.

* * * * *

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

Sincerely,

LSC TRANSPORTATION CONSULTANTS, INC.



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

CRG:jas

Enclosures: Tables 3-5
Figures 1-21
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Tables



Table 3: Buildout Detailed Trip Generation Estimate

Land Use Code	Land Use Description	Trip Generation Units	Trip Generation Rates ⁽¹⁾						Total Trips Generated					Internal Trips Generated ⁽²⁾					External Trips Generated					New External Trips Generated	
			Average Weekday Traffic ⁽⁴⁾	Morning Peak Hour		Afternoon Peak Hour		Average Weekday Traffic	Morning Peak Hour		Afternoon Peak Hour	Internal Trips	Average Weekday Traffic		Morning Peak Hour		Afternoon Peak Hour		Pass-By Trips ⁽³⁾	Average Weekday Traffic					
				In	Out	In	Out		In	Out			In	Out	In	Out	In	Out			In	Out			
Village A1/A2																									
210	Single Family	1789 DU	8.26	0.16	0.46	0.57	0.32	14,769	290	824	1,026	577	5%	804	6	8	99	35	13,964	284	816	927	542	0%	13,964
820	Shopping Center	150 KSF ⁽⁴⁾	52.80	0.94	0.57	2.35	2.54	7,921	141	86	352	381	15%	1,221	8	6	35	99	6,700	133	80	317	282	34%	4,422
520	Elementary School	500 Students	1.89	0.36	0.31	0.08	0.09	945	181	154	41	44	50%	473	90	77	20	22	473	90	77	20	22	0%	473
Village A Trip Generation Estimate								23,634	611	1,064	1,419	1,003		2,498	104	91	154	156	21,137	507	973	1,265	847		18,859
Village B1/B2																									
210	Single Family	1048 DU	8.62	0.17	0.48	0.59	0.33	9,030	178	507	621	349	7%	595	4	5	74	26	8,435	174	502	547	323	0%	8,435
820	Shopping Center	100 KSF ⁽⁴⁾	60.12	1.25	0.77	2.61	2.83	6,012	125	77	261	283	15%	879	5	4	26	74	5,133	120	73	235	209	34%	3,388
520	Elementary School	500 Students	1.89	0.36	0.31	0.08	0.09	945	181	154	41	44	50%	473	90	77	20	22	473	90	77	20	22	0%	473
Village B Trip Generation Estimate								15,987	484	737	922	676		1,947	99	86	120	122	14,040	385	651	802	554		12,296
Village C																									
210	Single Family	1340 DU	8.45	0.17	0.47	0.58	0.33	11,321	223	634	782	440	0%	0	0	0	0	0	11,321	223	634	782	440	0%	11,321
520	Elementary School	500 Students	1.89	0.36	0.31	0.08	0.09	945	181	154	41	44	50%	473	90	77	20	22	473	90	77	20	22	0%	473
522	Middle School	1000 Students	2.13	0.31	0.27	0.08	0.09	2,130	313	267	83	87	13%	266	39	33	10	11	1,864	274	233	73	76	0%	1,864
530	High School	1350 Students	2.03	0.35	0.17	0.07	0.07	2,741	470	232	91	98	13%	343	59	29	11	12	2,398	412	203	79	86	0%	2,398
Village C Trip Generation Estimate								17,136	1,187	1,286	997	669		1,081	188	139	42	45	16,055	999	1,147	955	624		16,056
Village D																									
210	Single Family	1267 DU	8.49	0.17	0.48	0.59	0.33	10,752	212	602	742	417	0%	0	0	0	0	0	10,752	212	602	742	417	0%	10,752
Village D Trip Generation Estimate								10,752	212	602	742	417		0	0	0	0	0	10,752	212	602	742	417		10,752
Total Trip Generation Estimate								67,509	2,494	3,690	4,081	2,766		5,526	392	316	317	323	61,984	2,101	3,373	3,764	2,442		57,963
Notes:																									
(1) Source: "Trip Generation, 10th Edition, 2017" by the Institute of Transportation Engineers (ITE)																									
(2) Calculated with NCHRP 684 Internal Trip Capture Estimate Tool Sheets																									
(3) Source: "Trip Generation Handbook - An ITE Proposed Recommended Practice, Third Edition September 2017" by ITE																									
(4) KSF = one thousand square feet of floor space, DU = dwelling unit																									
Source: LSC Transportation Consultants, Inc.																									

Table 4: ImmediateTerm Detailed Trip Generation Estimate

Land Use Code	Land Use Description	Trip Generation Units	Trip Generation Rates ⁽¹⁾						Total Trips Generated					
			Average Weekday Traffic ⁽⁵⁾	Morning Peak Hour		Afternoon Peak Hour		Average Weekday Traffic	Morning Peak Hour		Afternoon Peak Hour			
				In	Out	In	Out		In	Out	In	Out		
Village A1 DP1														
210	Single Family	80 DU	10.58	0.21	0.61	0.69	0.39	847	17	49	55	31		

Notes:
 (1) Source: "Trip Generation, 10th Edition, 2017" by the Institute of Transportation Engineers (ITE)
 (2) Calculated with NCHRP 684 Internal Trip Capture Estimate Tool Sheets
 (3) Source: "Trip Generation Handbook - An ITE Proposed Recommended Practice, Third Edition September 2017" by ITE
 (4) KSF = one thousand square feet of floor space, DU = dwelling unit

Source: LSC Transportation Consultants, Inc.

Table 5: Short Term Detailed Trip Generation Estimate

Land Use Code	Land Use Description	Trip Generation Units	Trip Generation Rates ⁽¹⁾						Total Trips Generated						Internal Trips Generated ⁽²⁾						External Trips Generated					New External Trips Generated	
			Average Weekday Traffic ⁽⁵⁾	Morning Peak Hour		Afternoon Peak Hour		Average Weekday Traffic	Morning Peak Hour		Afternoon Peak Hour		Internal Trips	Morning Peak Hour		Afternoon Peak Hour		Average Weekday Traffic	Morning Peak Hour		Afternoon Peak Hour	Pass-By Trips ⁽⁵⁾	Average Weekday Traffic				
				In	Out	In	Out	Traffic	In	Out	In	Out	Trips	Traffic	In	Out	In	Out	Traffic	In	Out	In	Out	Trips	Traffic		
Village A1																											
210	Single Family	937 DU	8.69	0.17	0.49	0.60	0.34	8,146	161	457	559	314	9%	770	3	4	99	35	7,376	158	453	460	279	0%	7,376		
820	Shopping Center (25%)	37.5 KSF ⁽⁴⁾	52.80	0.94	0.57	2.35	2.54	1,980	35	22	88	95	15%	291	1	1	9	25	1,689	34	21	79	71	34%	1,115		
520	Elementary School	500 Students	1.89	0.36	0.31	0.08	0.09	945	181	154	41	44	50%	473	90	77	20	22	473	90	77	20	22	0%	473		
Village A1 Trip Generation Estimate								11,071	377	633	688	454		1,533	94	82	128	82	9,538	282	551	559	372		8,964		
Village B1																											
210	Single Family	167 DU	9.98	0.20	0.57	0.66	0.37	1,667	33	95	110	62	0%	0	0	0	0	0	1,667	33	95	110	62	0%	1,667		
Total Trip Generation Estimate								12,738	410	728	798	516		1,533	94	82	128	82	11,204	316	647	670	434		10,631		

Notes:
 (1) Source: "Trip Generation, 10th Edition, 2017" by the Institute of Transportation Engineers (ITE)
 (2) Calculated with NCHRP 684 Internal Trip Capture Estimate Tool Sheets
 (3) Source: "Trip Generation Handbook - An ITE Proposed Recommended Practice, Third Edition September 2017" by ITE
 (4) KSF = one thousand square feet of floor space, DU = dwelling unit

Source: LSC Transportation Consultants, Inc.

Figures



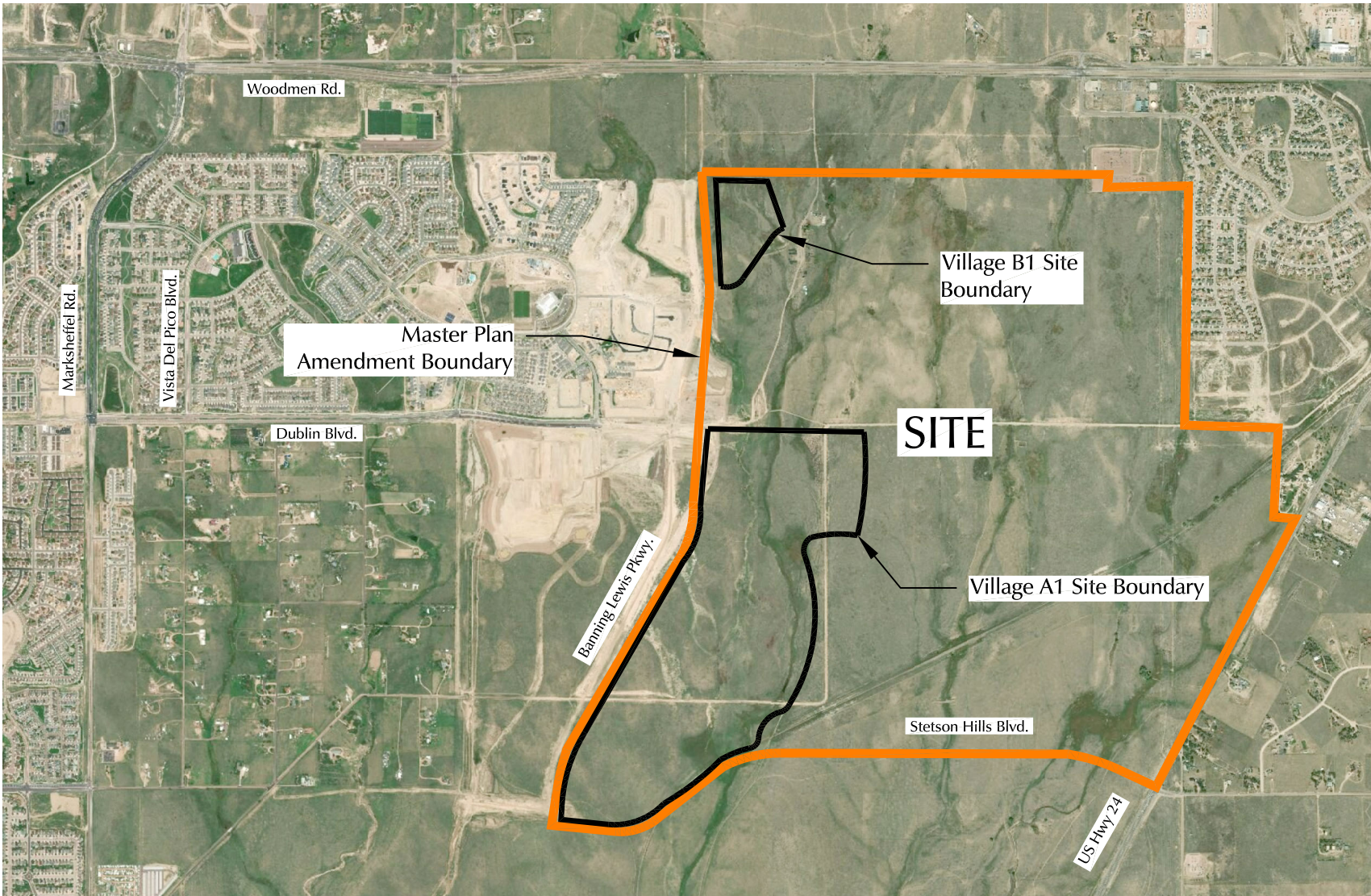


Figure 1
Vicinity Map
Banning Lewis ABCD (LSC# 204160)



Figure 2a
Site Plan - Villages A-D
Banning Lewis ABCD (LSC# 204160)





Not to scale

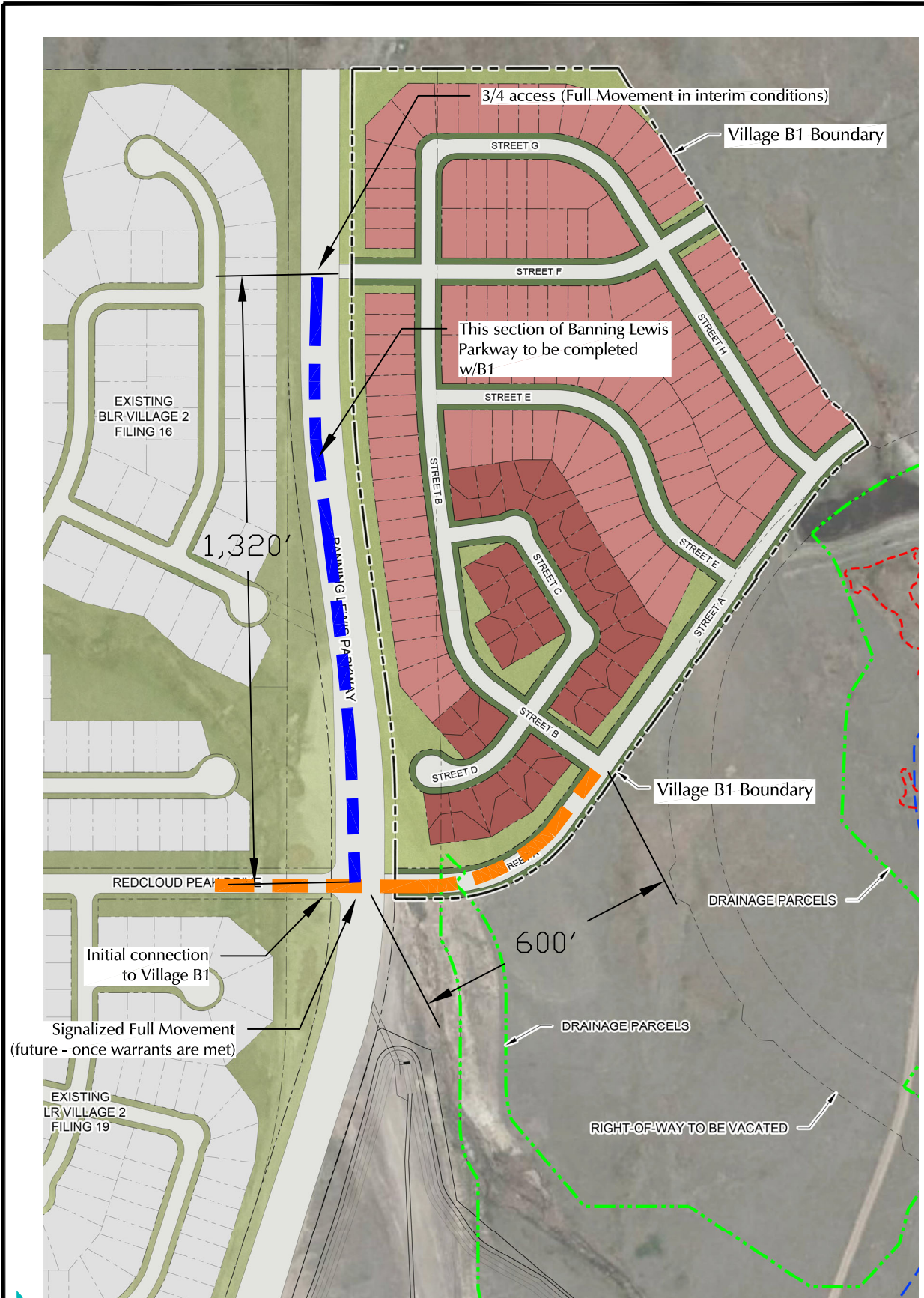
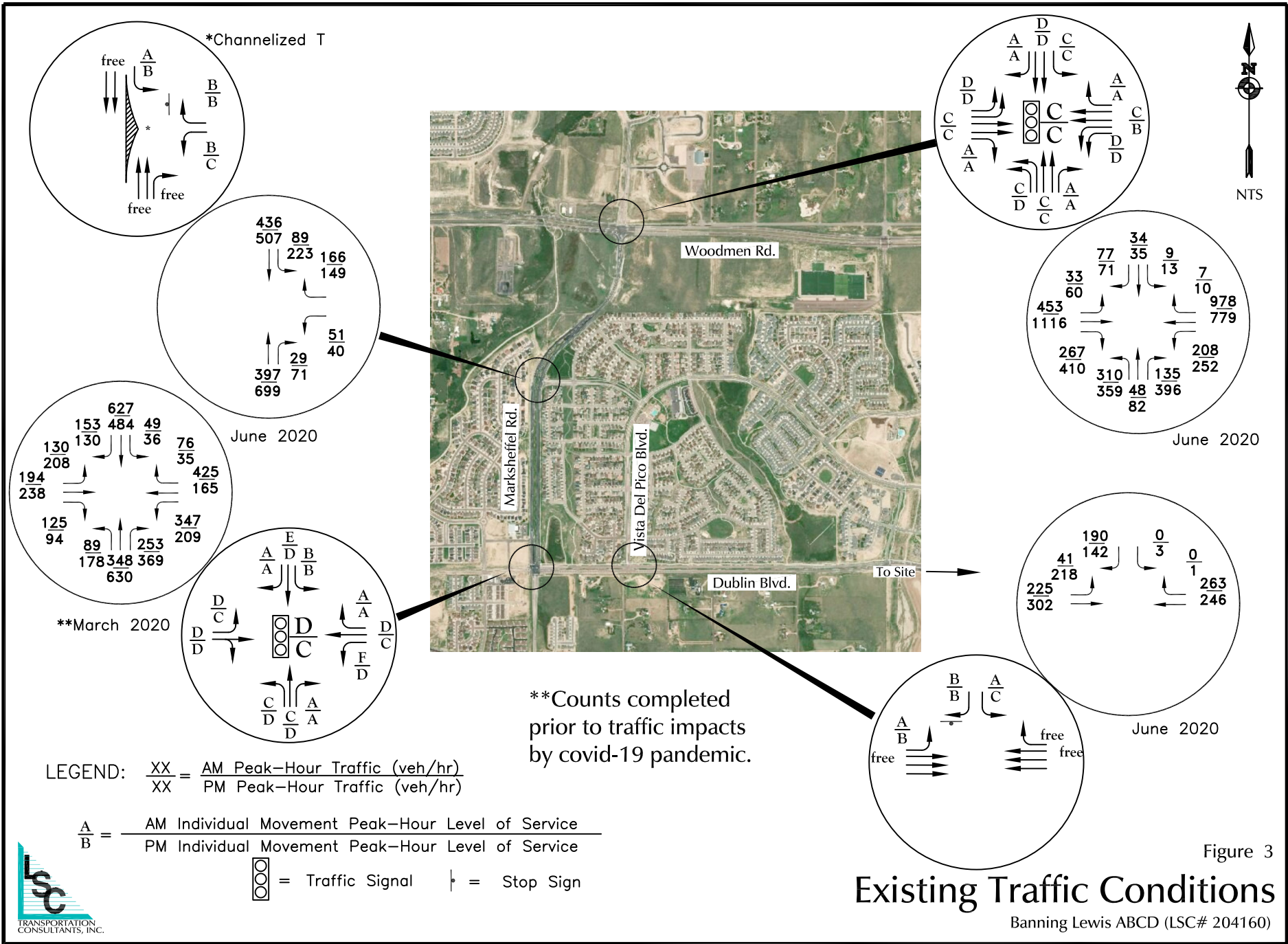


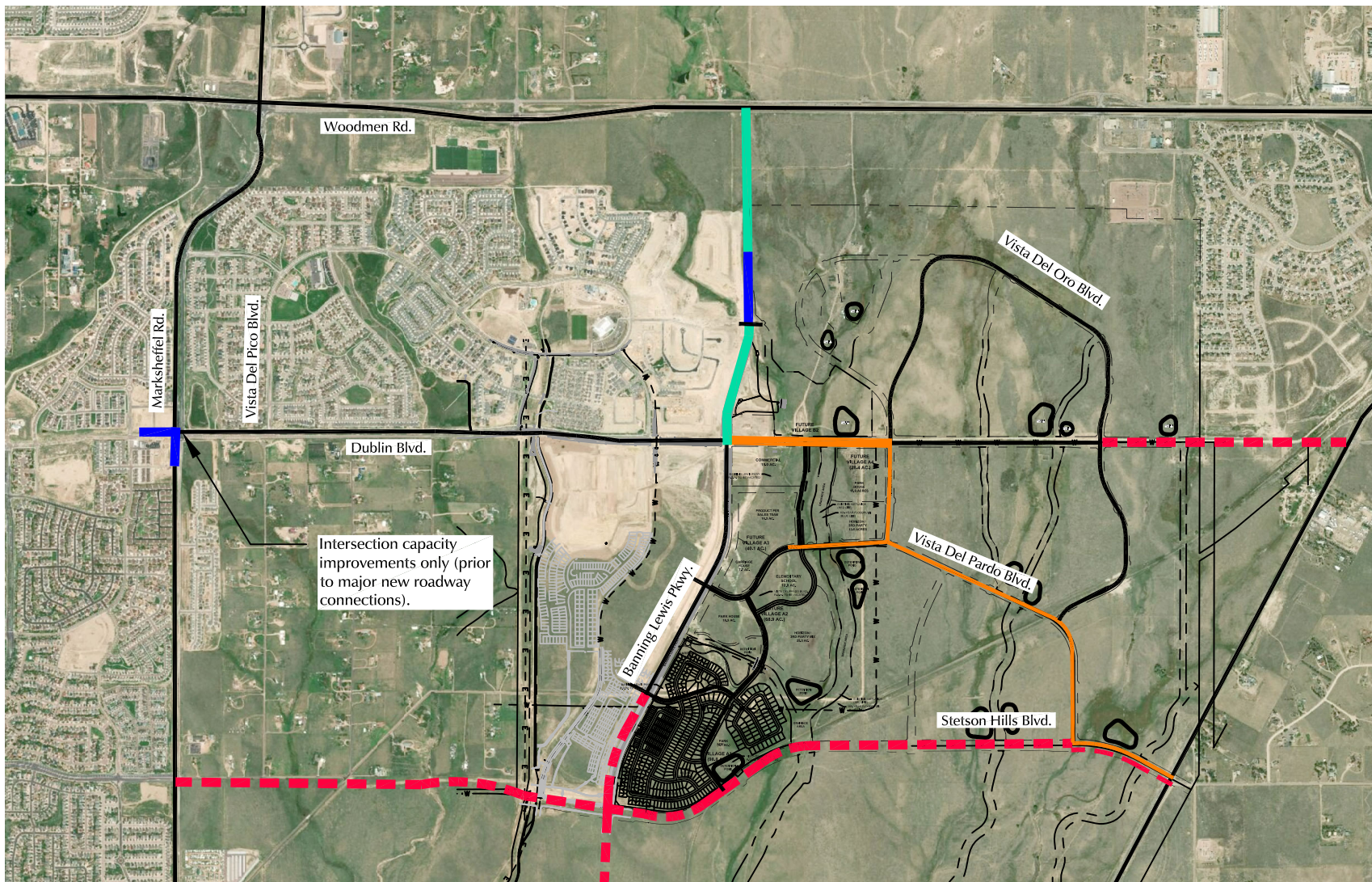
Figure 2c

Site Plan - Village B1

Banning Lewis ABCD (LSC# 204160)







LEGEND:

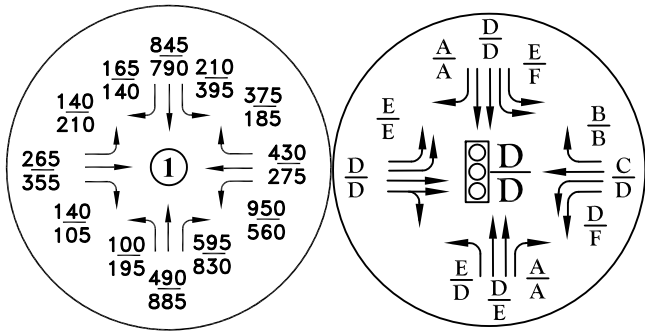
- Stage 1 (Short Term)
- Stage 2 (Intermediate Term)
- Stage 3 (Intermediate Term)
- - Long Term Future (shown for reference only)



Graphical Depiction of the Major Roadway Connection Stages (phases) Analyzed

Figure 4

Banning Lewis ABCD (LSC# 204160)



LEGEND: $\frac{XX}{XX} = \frac{\text{AM Peak-Hour Traffic (veh/hr)}}{\text{PM Peak-Hour Traffic (veh/hr)}}$

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

= Traffic Signal = Stop Sign



- This stage assumes use of the previously completed six-lane Dublin Blvd through Villages 1, 2, and 3 and recommends interim capacity improvements at the Dublin/Marksheffel intersection.

Note: This figure only shows off-site intersections for the purpose of evaluating stages.

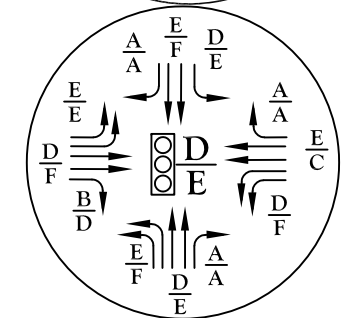
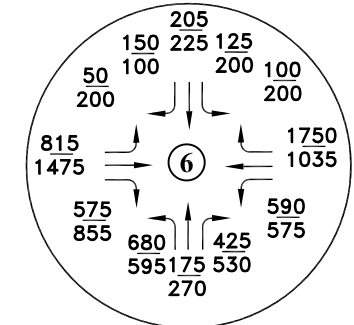
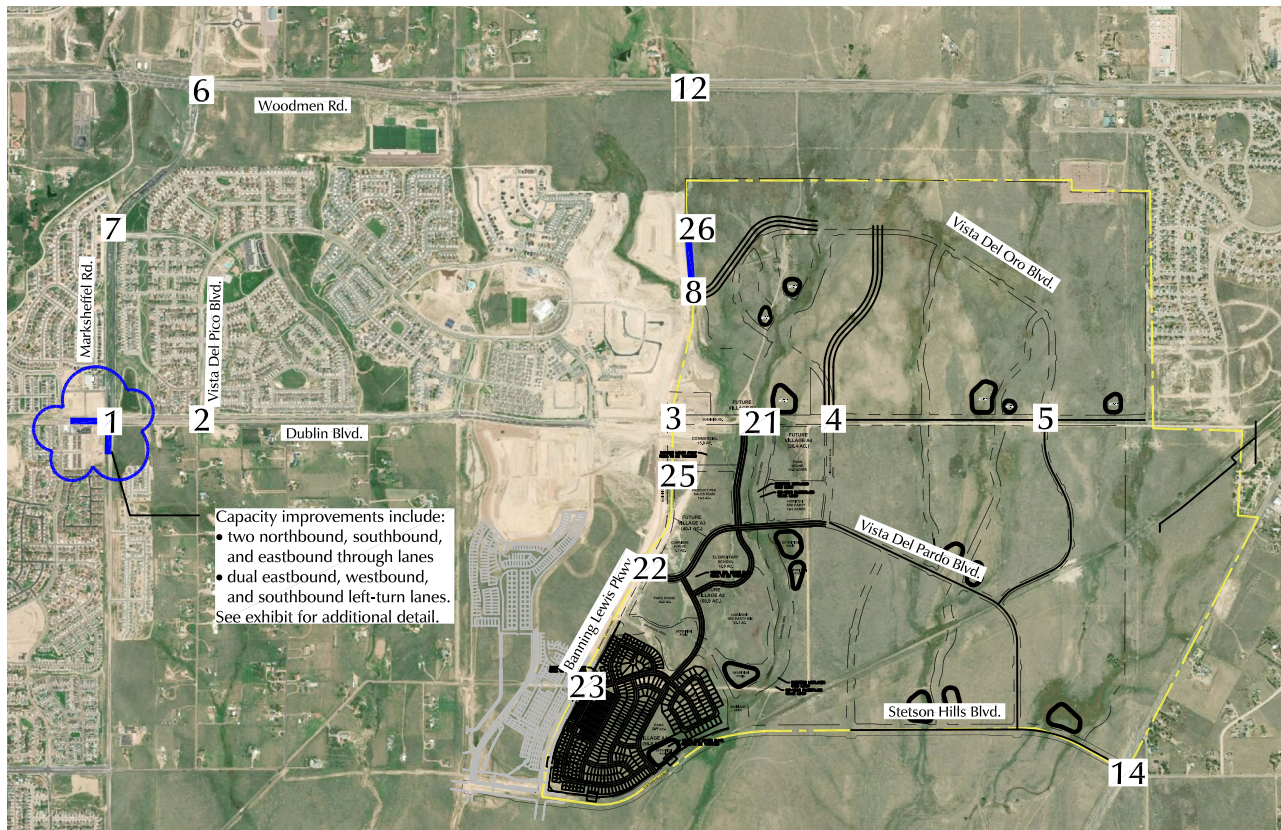
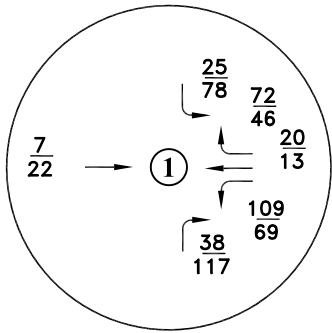


Figure 5

Stage 1 - Background Traffic Conditions

Banning Lewis ABCD (LSC# 204160)

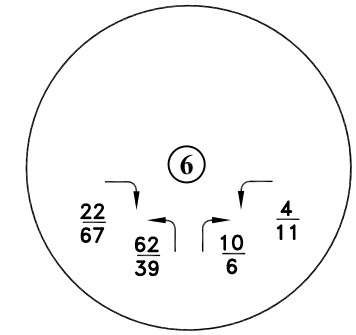
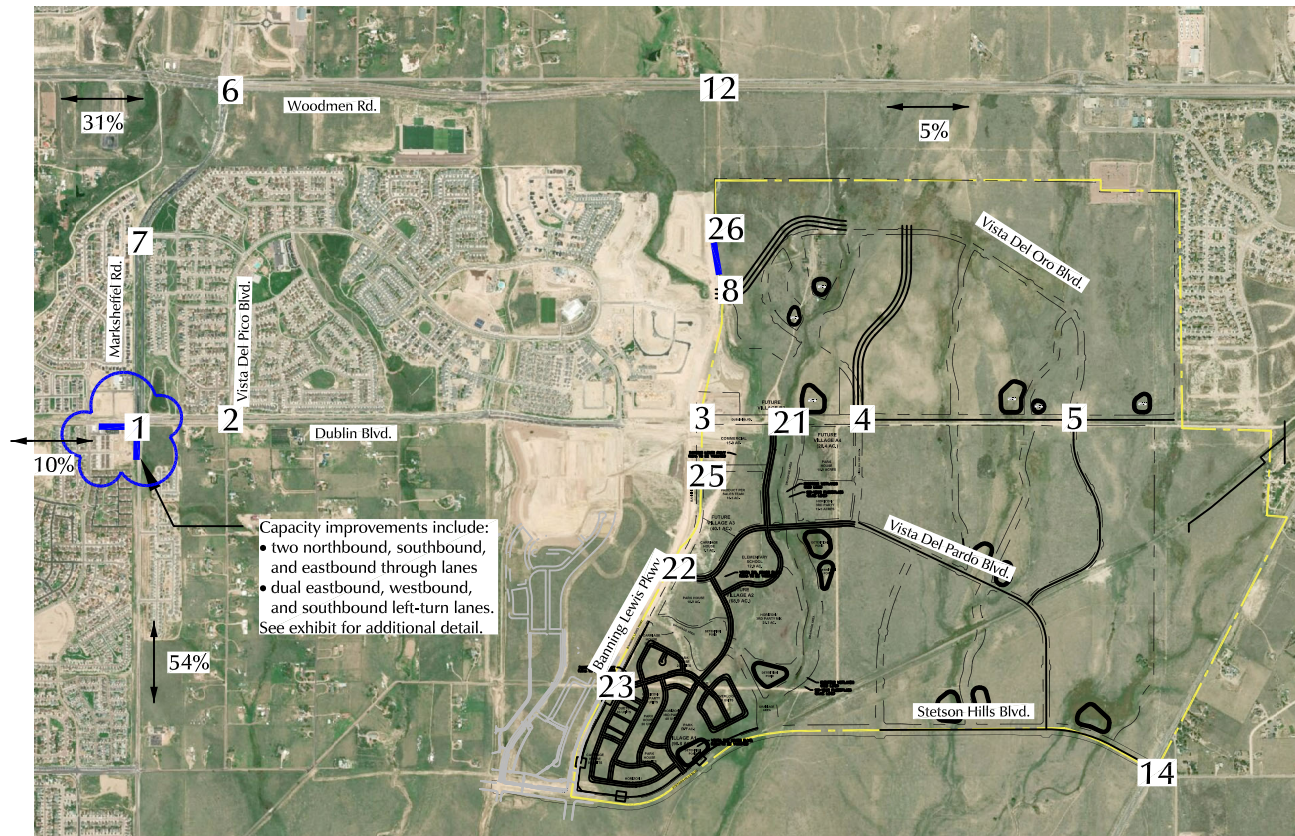


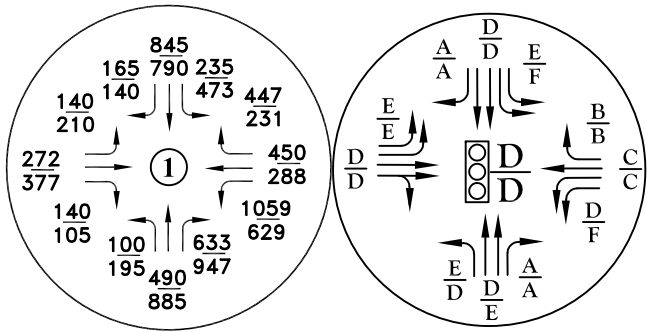
LEGEND: $\frac{XX}{XX}$ = AM Peak-Hour Traffic (veh/hr)
 $\frac{XX}{XX}$ = PM Peak-Hour Traffic (veh/hr)

XX% - Directional distribution of site-generated traffic

— This stage assumes use of the previously completed six-lane Dublin Blvd through Villages 1, 2, and 3 and recommends interim capacity improvements at the Dublin/Marksheffel intersection.

Note: This figure only shows off-site intersections for the purpose of evaluating stages.





LEGEND: $\frac{XX}{XX} = \frac{\text{AM Peak-Hour Traffic (veh/hr)}}{\text{PM Peak-Hour Traffic (veh/hr)}}$

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

= Traffic Signal = Stop Sign



- This stage assumes use of the previously completed six-lane Dublin Blvd through Villages 1, 2, and 3 and recommends interim capacity improvements at the Dublin/Marksheffel intersection.

Note: This figure only shows off-site intersections for the purpose of evaluating stages.

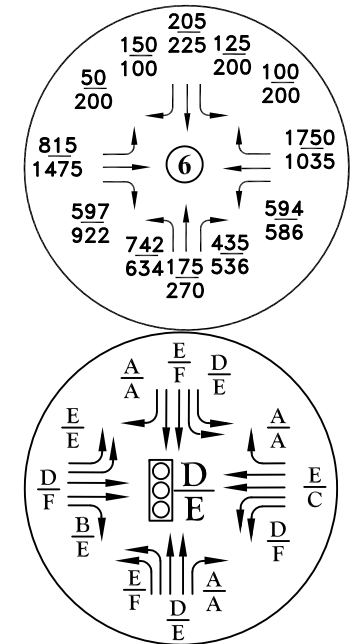
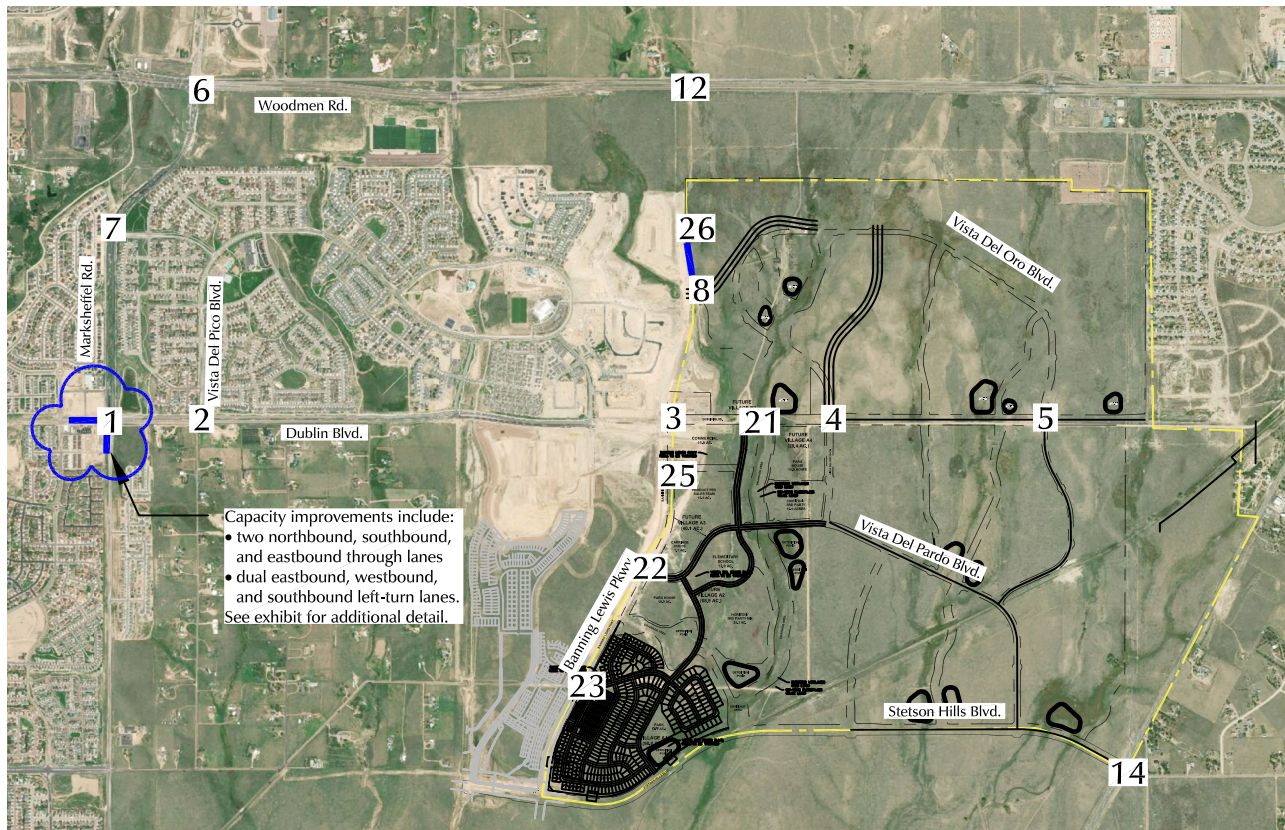
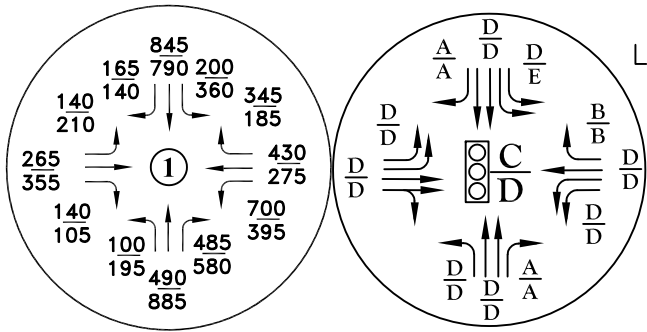
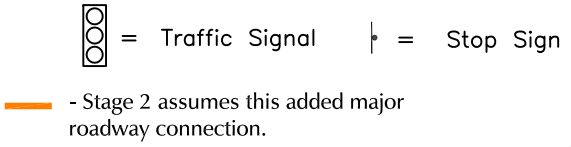


Figure 7
 Stage 1 - Total Traffic Conditions

Banning Lewis ABCD (LSC# 204160)



LEGEND: $\frac{XX}{XX} = \frac{\text{AM Peak-Hour Traffic (veh/hr)}}{\text{PM Peak-Hour Traffic (veh/hr)}}$
 $\frac{A}{B} = \frac{\text{AM Individual Movement Peak-Hour Level of Service}}{\text{PM Individual Movement Peak-Hour Level of Service}}$



Note: This figure only shows off-site intersections for the purpose of evaluating stages.

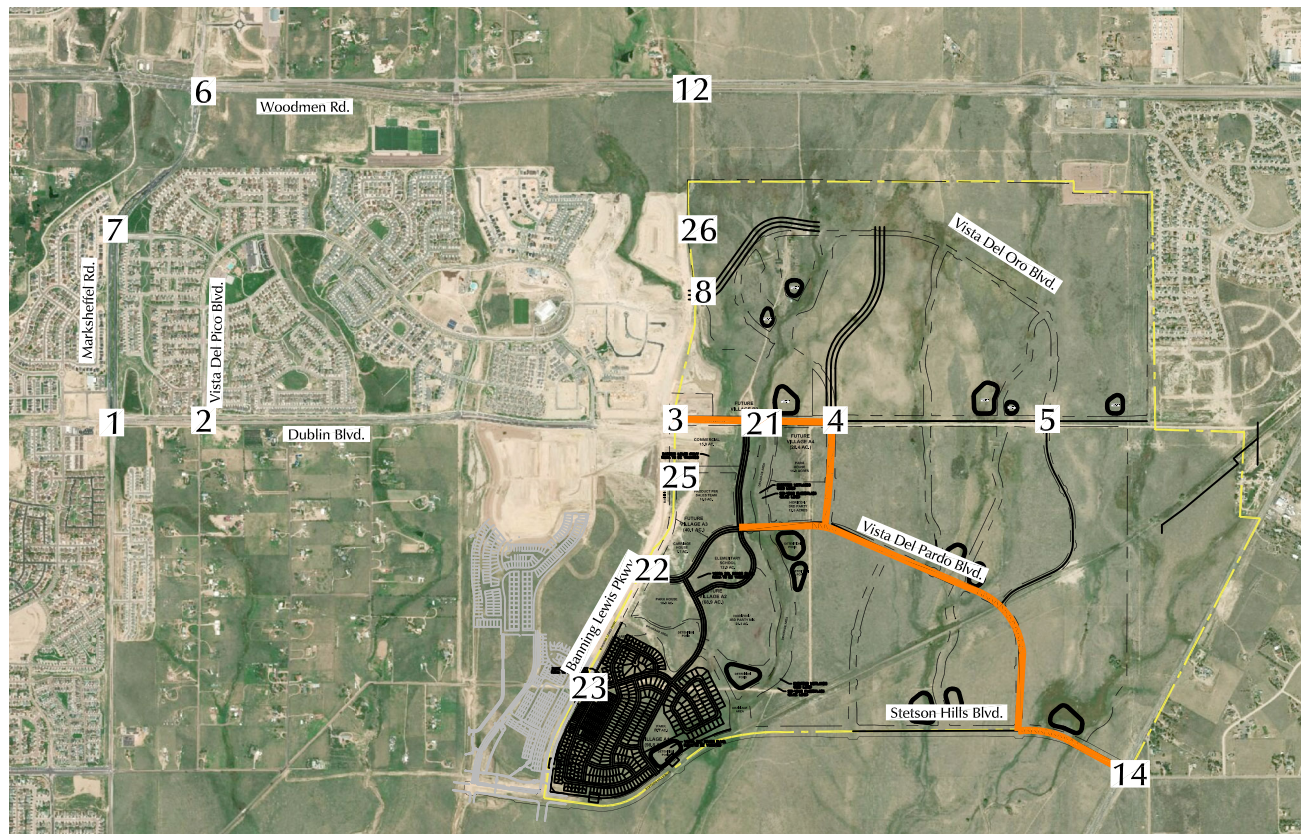
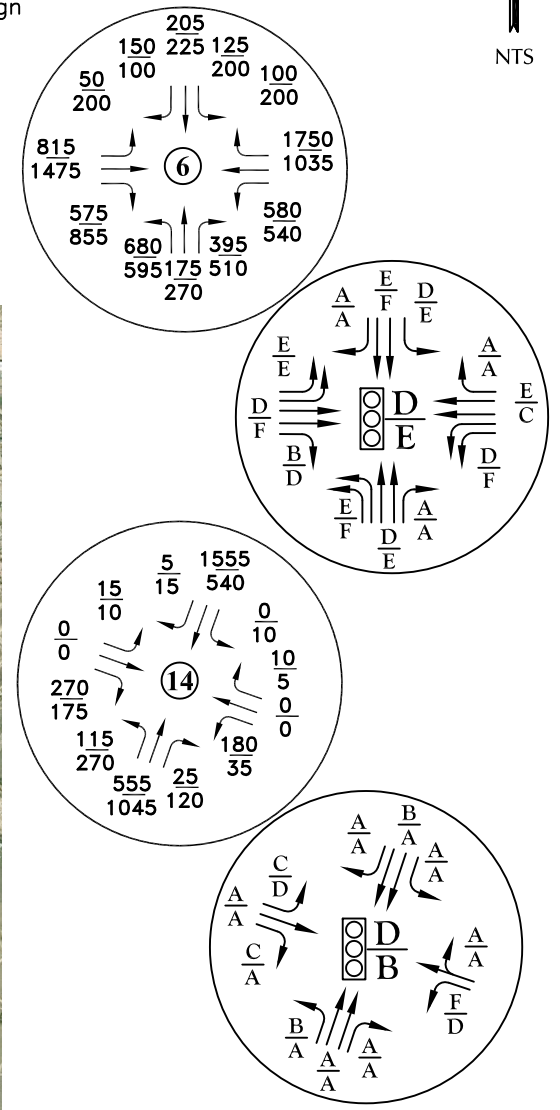
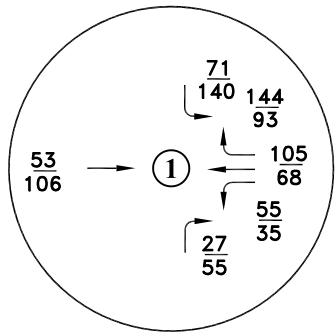


Figure 8

Stage 2 - Background Traffic Conditions

Banning Lewis ABCD (LSC# 204160)

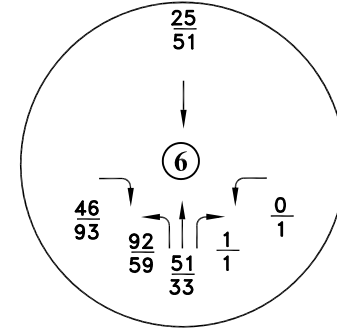




LEGEND: $\frac{XX}{XX} = \frac{\text{AM Peak-Hour Traffic (veh/hr)}}{\text{PM Peak-Hour Traffic (veh/hr)}}$

$\frac{XX\%}{XX\%} = \frac{\text{Village B+D (North)}}{\text{Village A+C (South)}}$ trip distributions

— - Stage 2 assumes this added major roadway connection.



Note: This figure only shows off-site intersections for the purpose of evaluating stages.

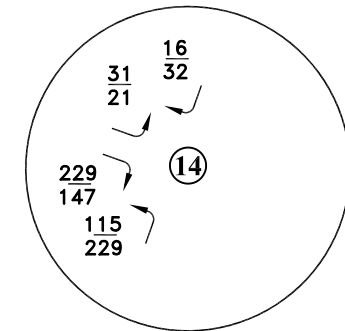
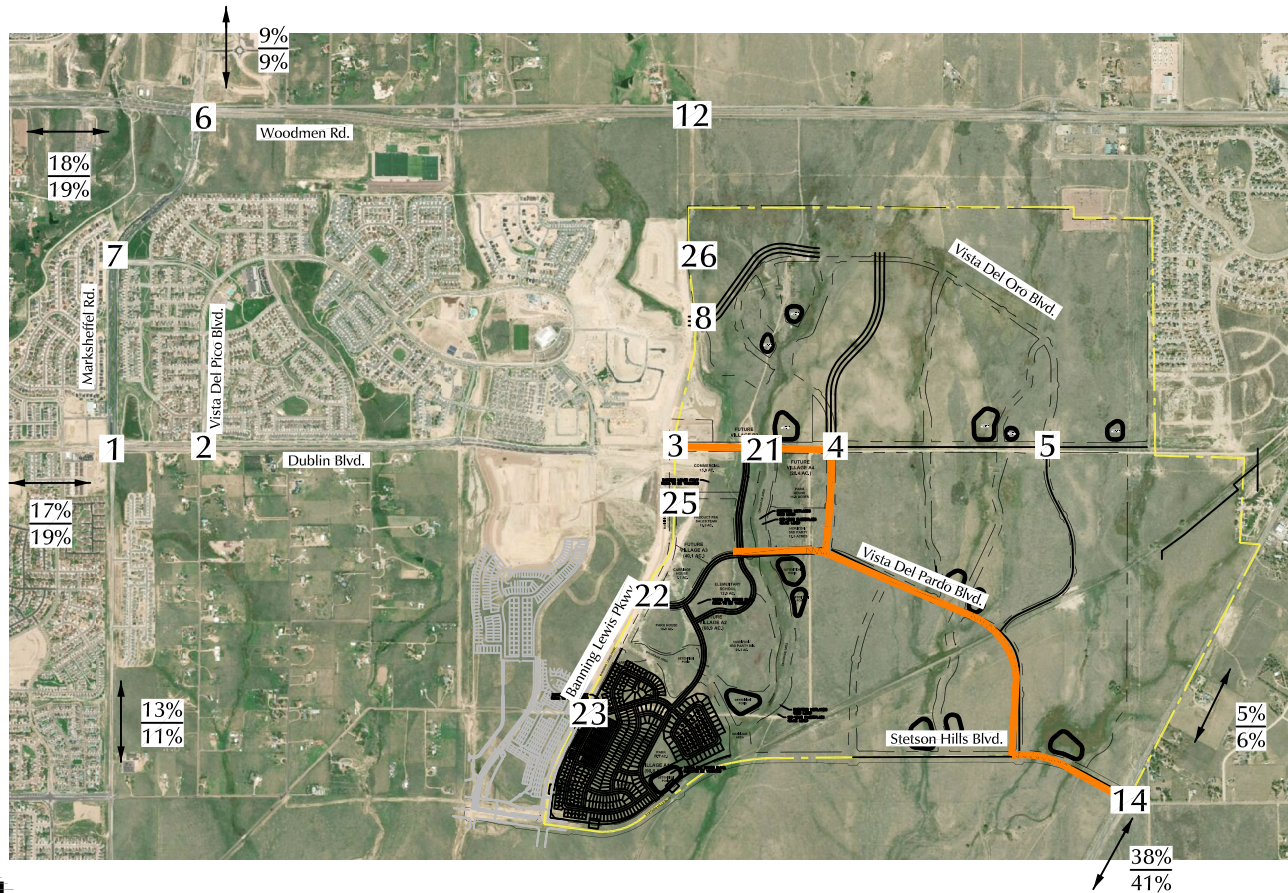
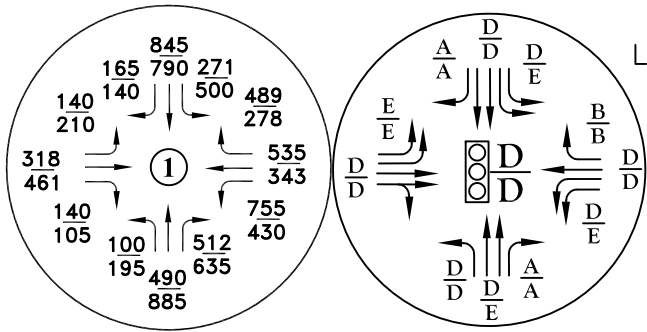


Figure 9

Stage 2 - Site-Generated Traffic + Trip Distribution

Banning Lewis ABCD (LSC# 204160)



LEGEND: $\frac{XX}{XX} = \frac{\text{AM Peak-Hour Traffic (veh/hr)}}{\text{PM Peak-Hour Traffic (veh/hr)}}$

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

= Traffic Signal = Stop Sign

- Stage 2 assumes this added major roadway connection.



Note: This figure only shows off-site intersections for the purpose of evaluating stages.

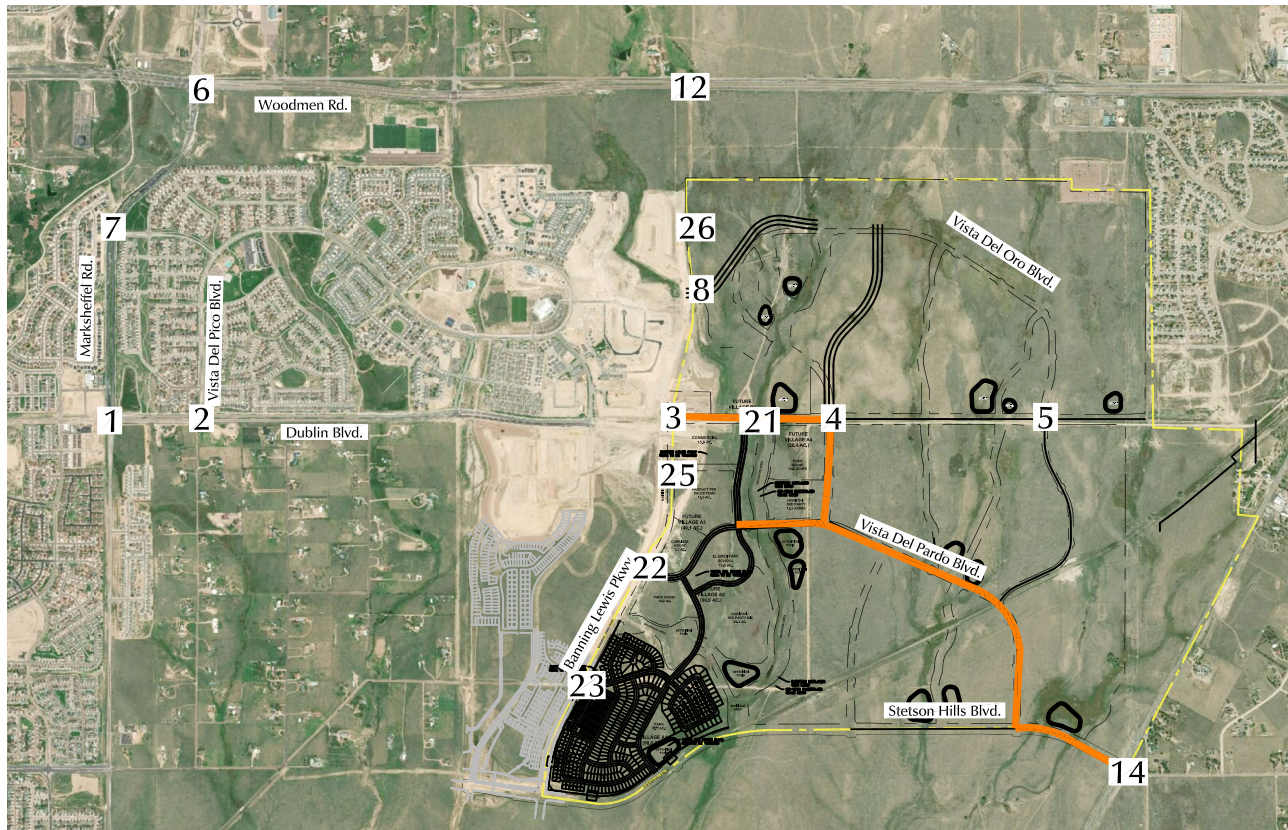
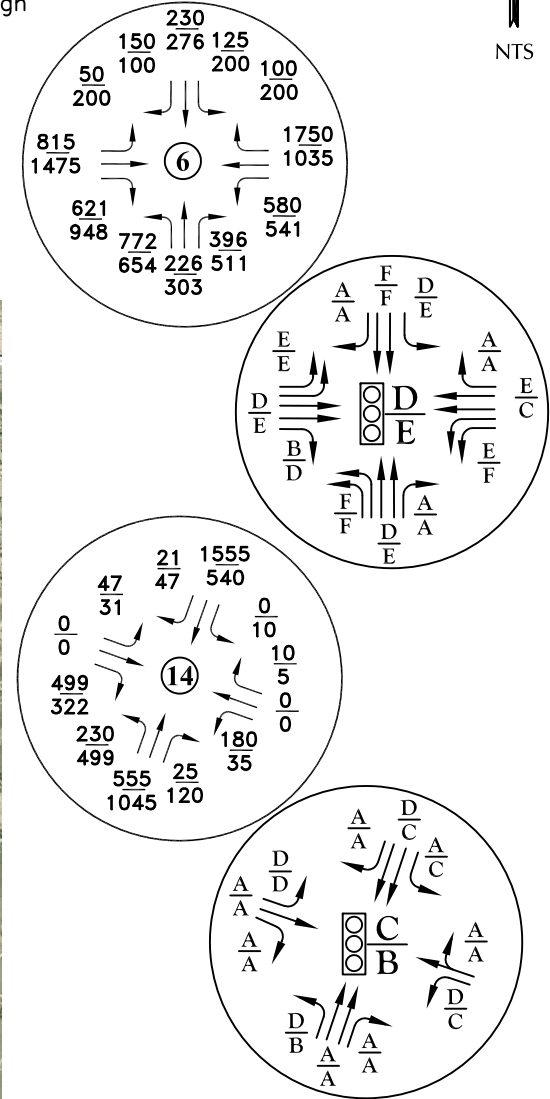


Figure 10

Stage 2 - Total Traffic Conditions

Banning Lewis ABCD (LSC# 204160)



LEGEND: $\frac{XX}{XX}$ = AM Peak-Hour Traffic (veh/hr)
 $\frac{XX}{XX}$ = PM Peak-Hour Traffic (veh/hr)

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

= Traffic Signal = Stop Sign

- Stage 3 assumes this added major roadway connection.

- Previously completed section

Note: This figure only shows off-site intersections for the purpose of evaluating stages.

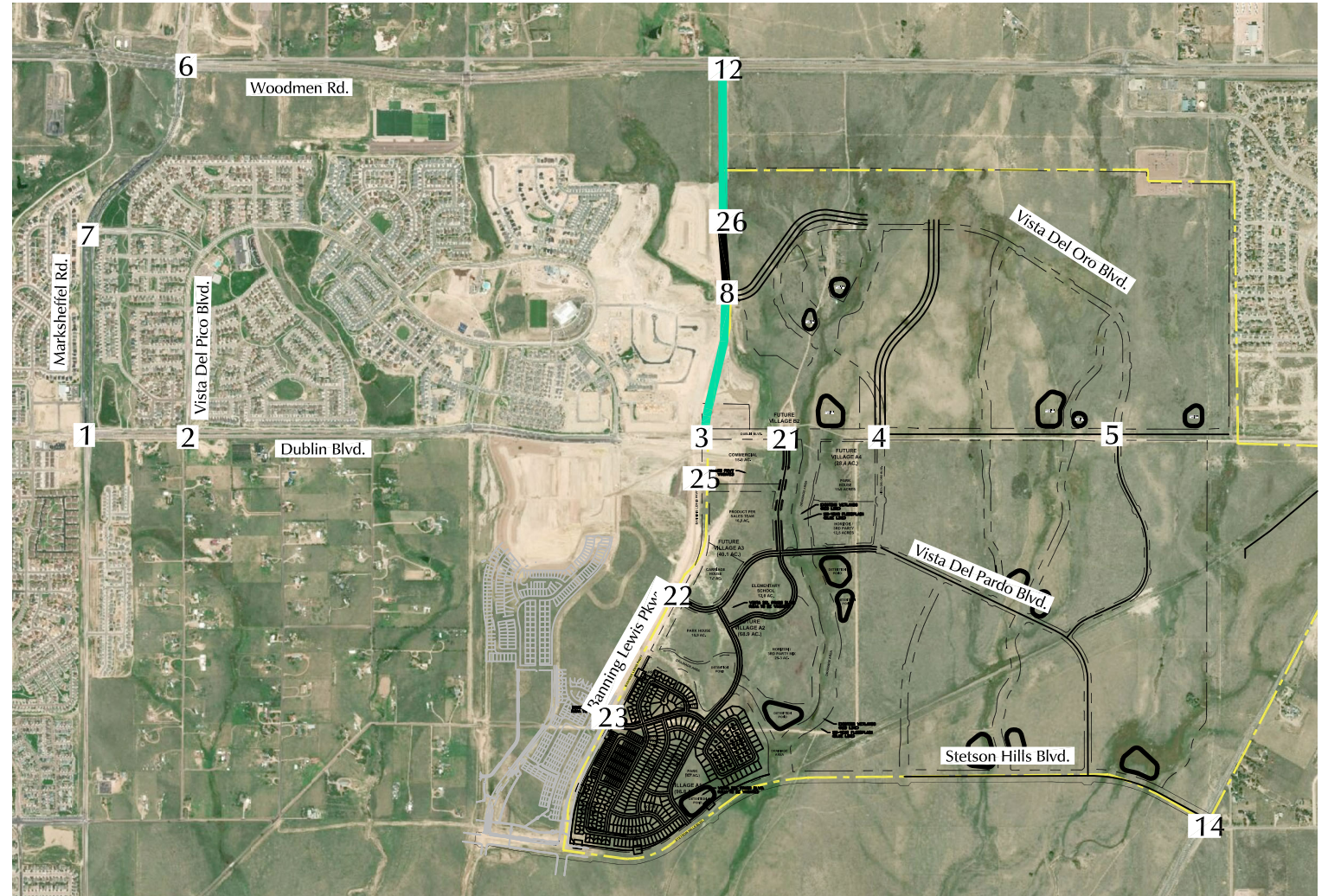
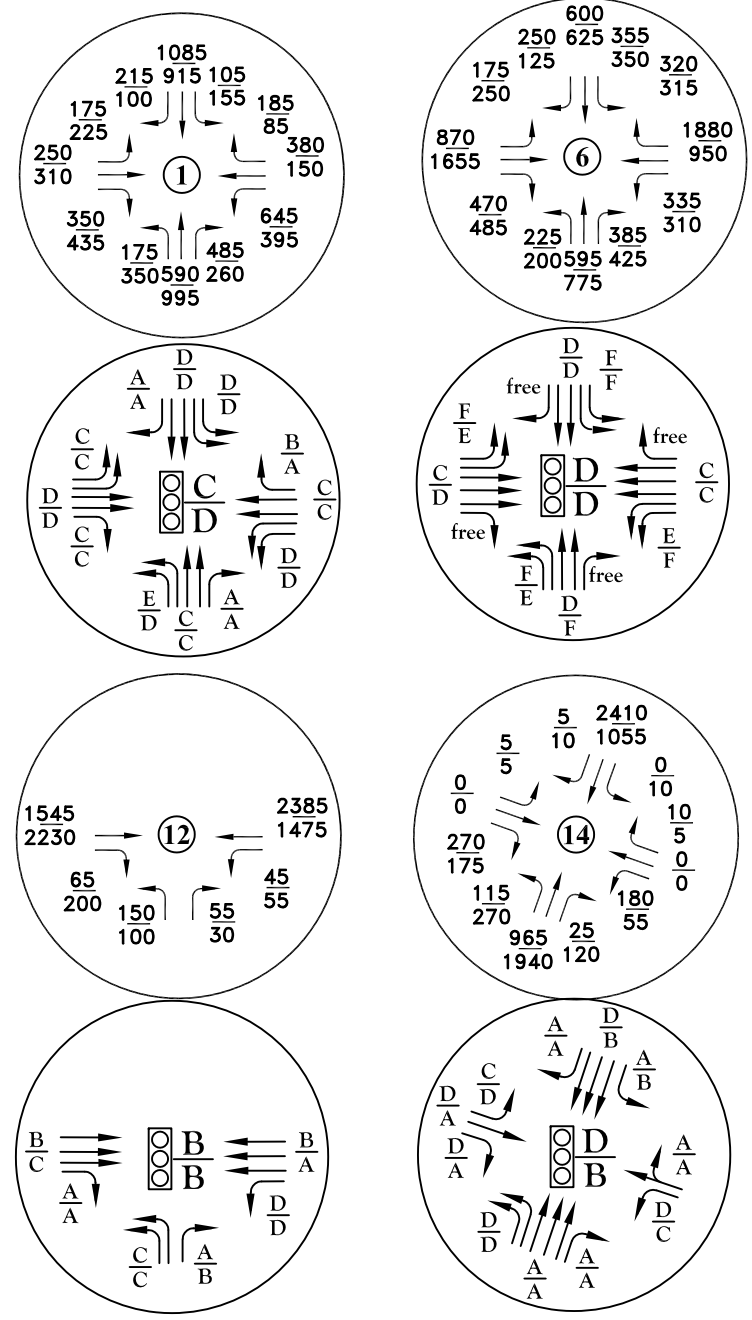
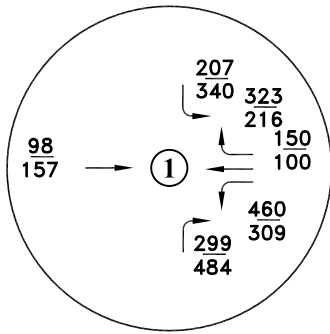


Figure 11

Stage 3 - Background Traffic Conditions

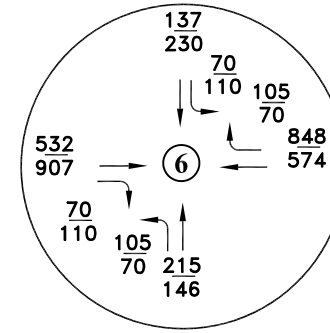
Banning Lewis ABCD (LSC# 204160)



LEGEND: $\frac{XX}{XX}$ = AM Peak-Hour Traffic (veh/hr)
 $\frac{XX}{XX}$ = PM Peak-Hour Traffic (veh/hr)

$\frac{XX\%}{XX\%}$ = Village B+D (North) trip distributions
 $\frac{XX\%}{XX\%}$ = Village A+C (South) trip distributions

— - Stage 3 assumes this added major roadway connection.
 — - Previously completed section



Note: This figure only shows off-site intersections for the purpose of evaluating stages.

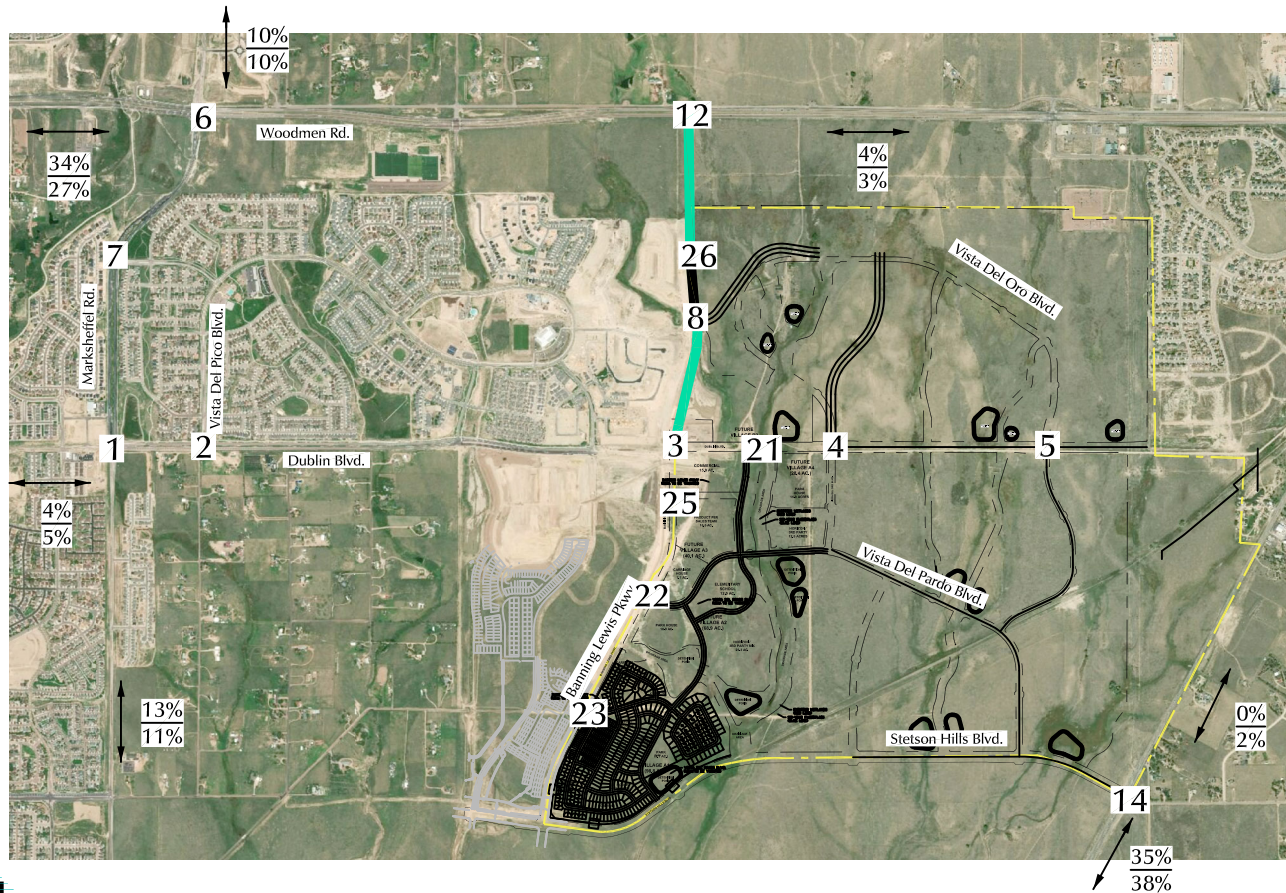
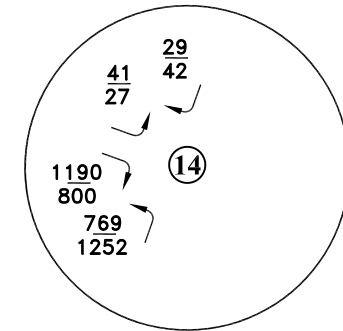
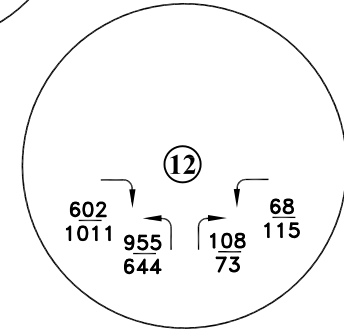
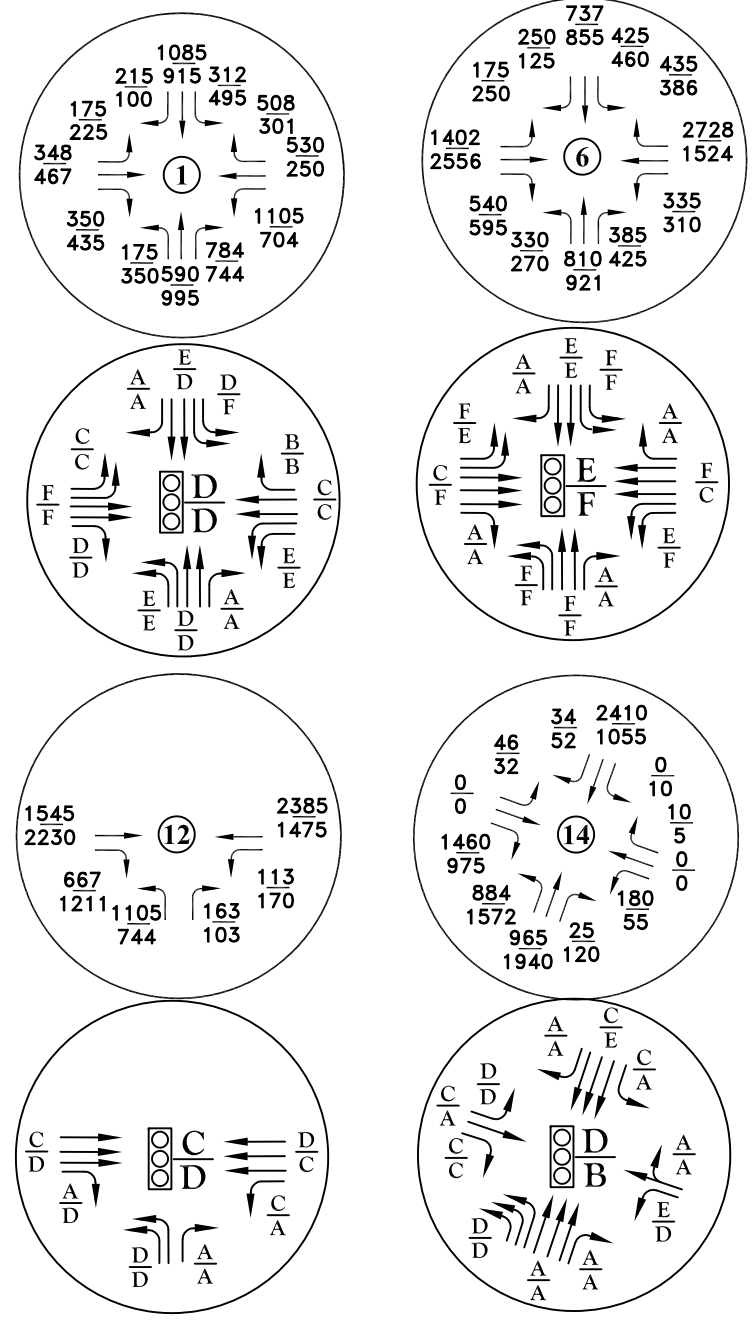


Figure 12

Stage 3 - Site-Generated Traffic + Trip Distribution

Banning Lewis ABCD (LSC# 204160)



LEGEND: $\frac{XX}{XX}$ = AM Peak-Hour Traffic (veh/hr)
 $\frac{XX}{XX}$ = PM Peak-Hour Traffic (veh/hr)

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



- - Stage 3 assumes this added major roadway connection.
- - Previously completed section

Note: This figure only shows off-site intersections for the purpose of evaluating stages.

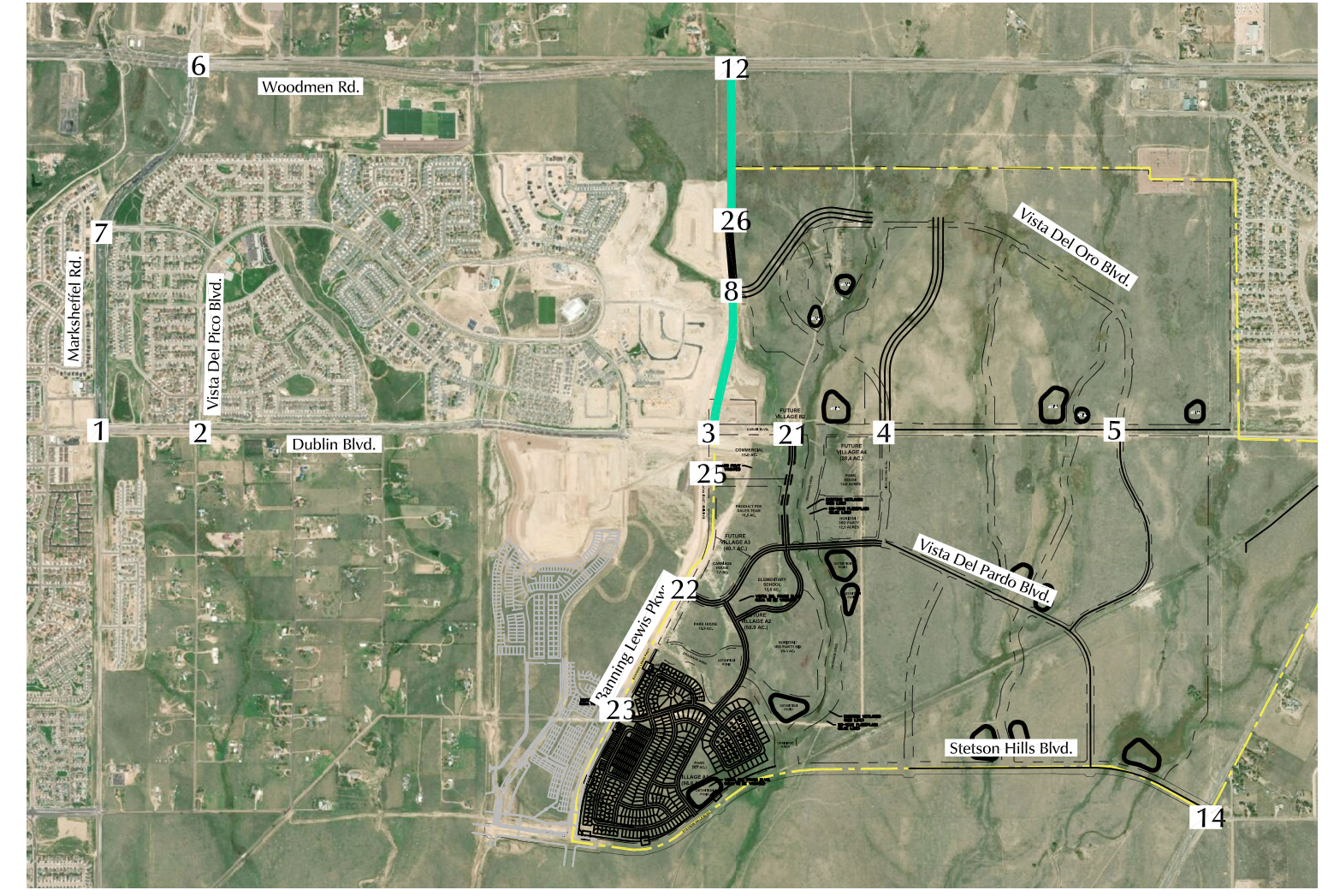
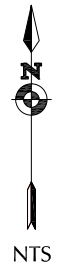
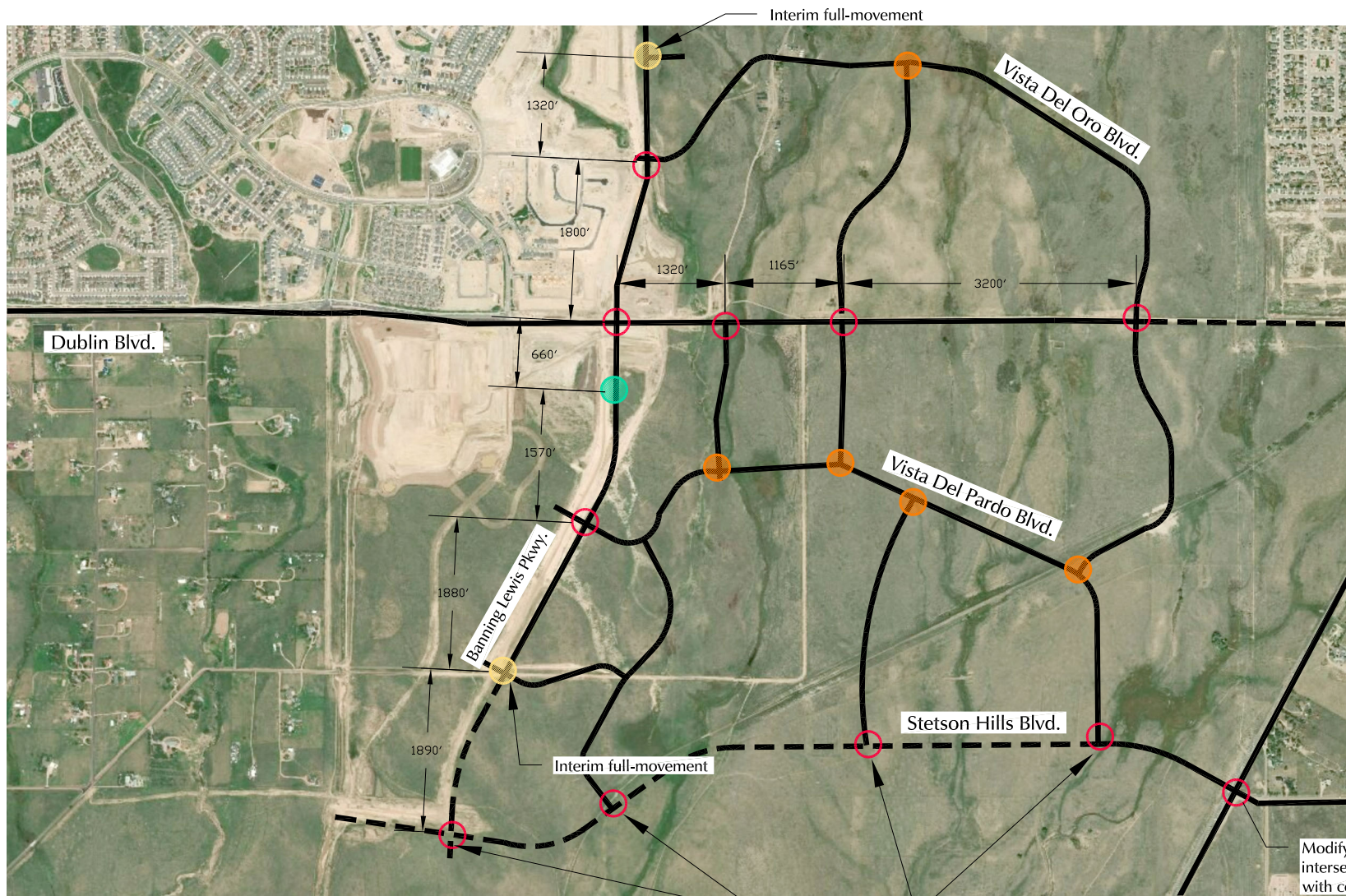


Figure 13

Stage 3 - Total Traffic Conditions

Banning Lewis ABCD (LSC# 204160)



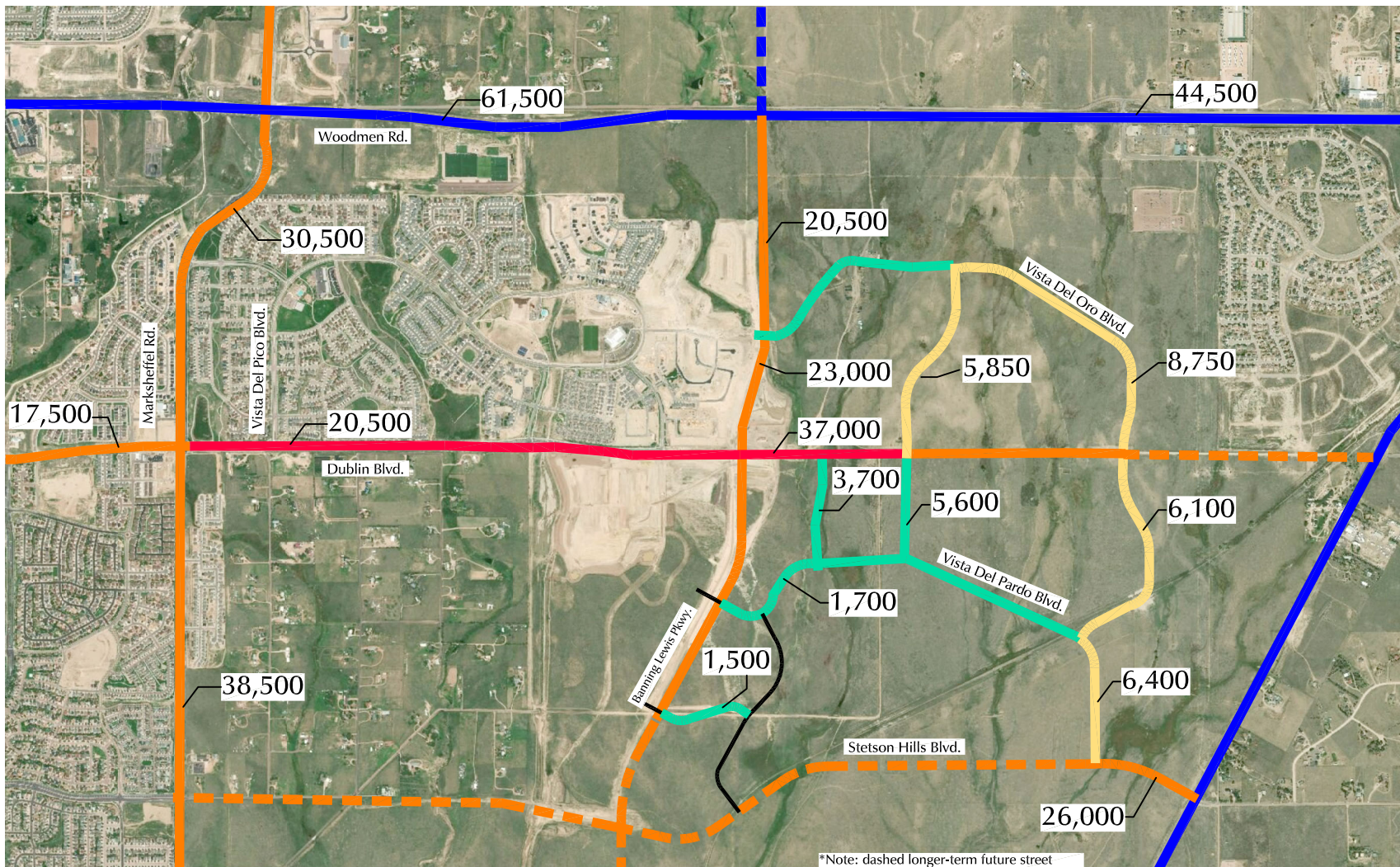
- LEGEND:
- - Full-Movement w/Signal (once/if warranted)
 - - 3/4 Movement (interim full-movement)
 - - Right-in/Right-out
 - - Full Movement Stop Sign Traffic Control
 - - Future Roadways

Proposed Intersection Locations/Type for Collector and Higher Classified Streets

Figure 14

Banning Lewis ABCD (LSC# 204160)





LEGEND:

- Principal Arterial (6 lanes)
- Collector (2 lanes)
- Expressway
- Principal Arterial (4 lanes)
- Minor Arterial (4 lanes)
- - - Expressway (future*)
- - - Principal Arterial (4 lanes)(future*)

XXX = Long-Term Average Daily Traffic (vehicles/day)

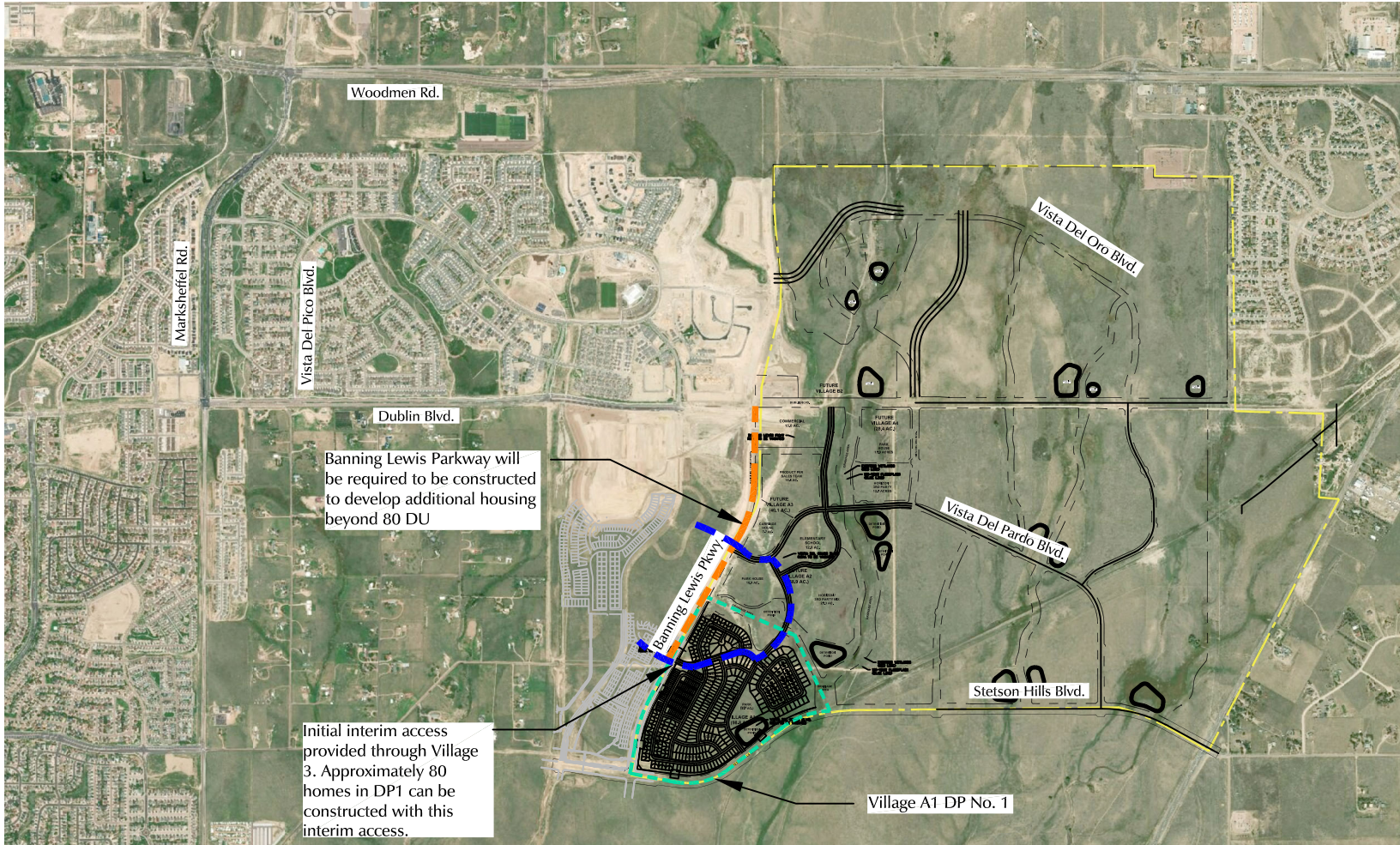
*Note: dashed longer-term future street connections shown for reference only. No connection assumed for buildout and no trips loaded to these future roadways.



Functional Classifications, Projected Buildout Traffic Volumes, and Laneage

Figure 15

Banning Lewis ABCD (LSC# 204160)



Legend:

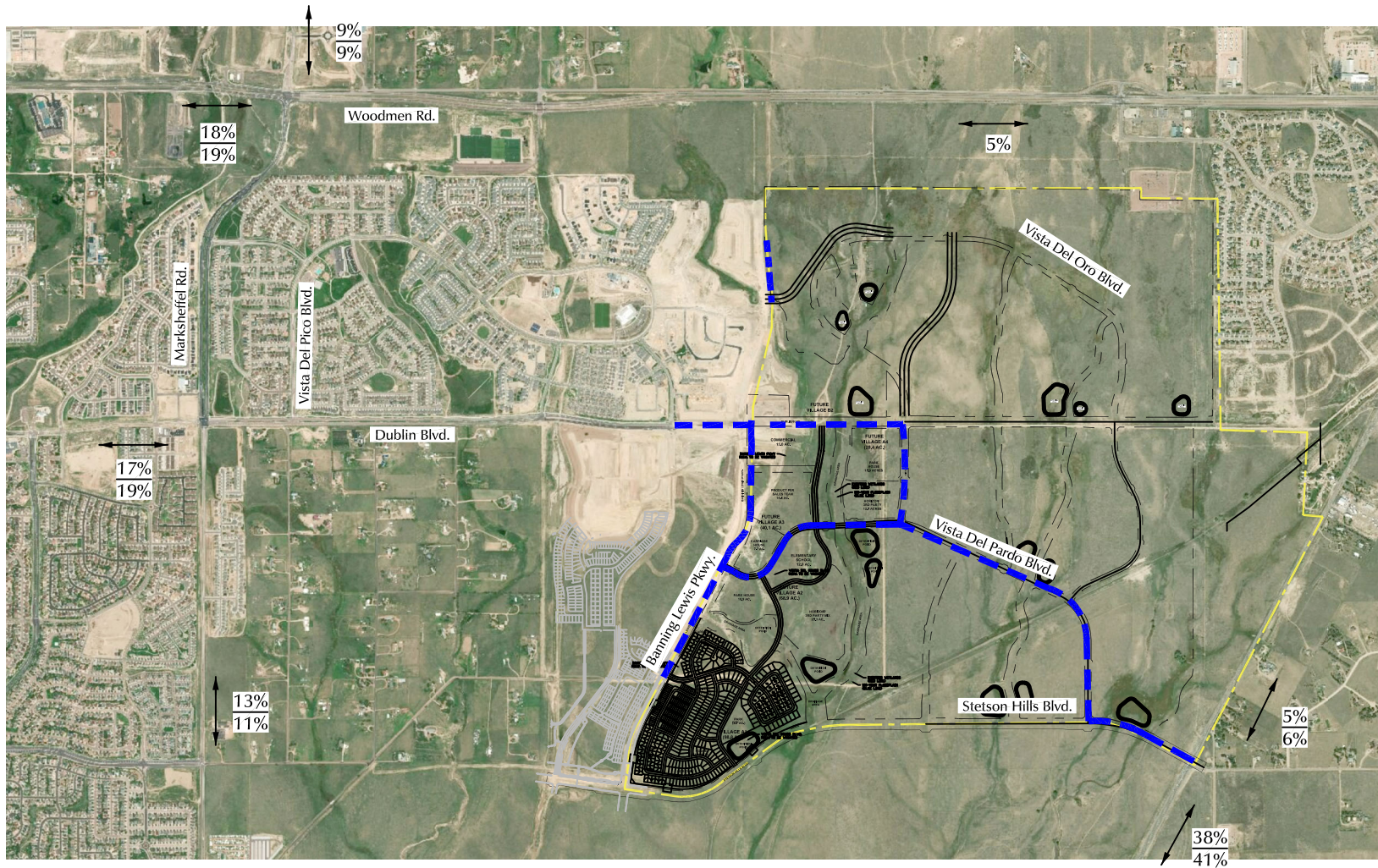
— — — - Constructed Roads



Immediate Term (Village A1 Development Plan No. 1)

Banning Lewis ABCD (LSC# 204160)

Figure 16



Legend:

$\frac{XX\%}{XX\%} = \frac{\text{Village B+D (North)}}{\text{Village A+C (South)}}$ trip distributions

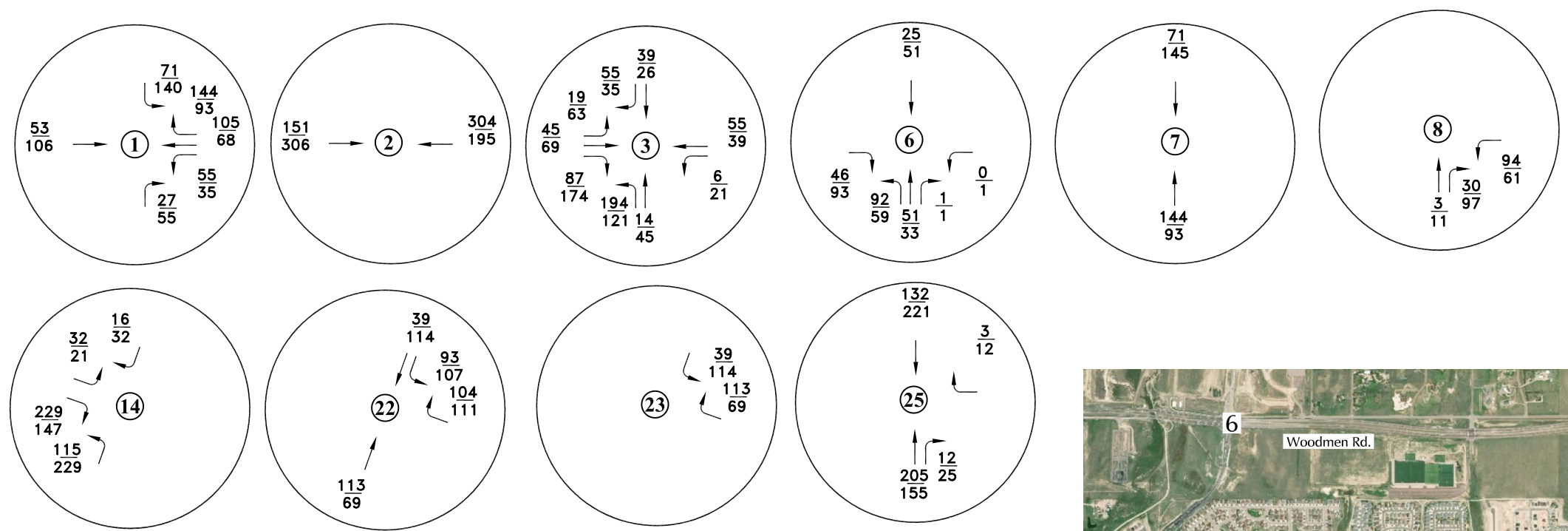
--- - Constructed Roads



Short-Term (Villages A1 + B1) Directional Distribution

Banning Lewis ABCD (LSC# 204160)

Figure 17



LEGEND: $\frac{XX}{XX}$ = AM Peak-Hour Traffic (veh/hr)
 $\frac{XX}{XX}$ = PM Peak-Hour Traffic (veh/hr)

--- - Constructed Roads

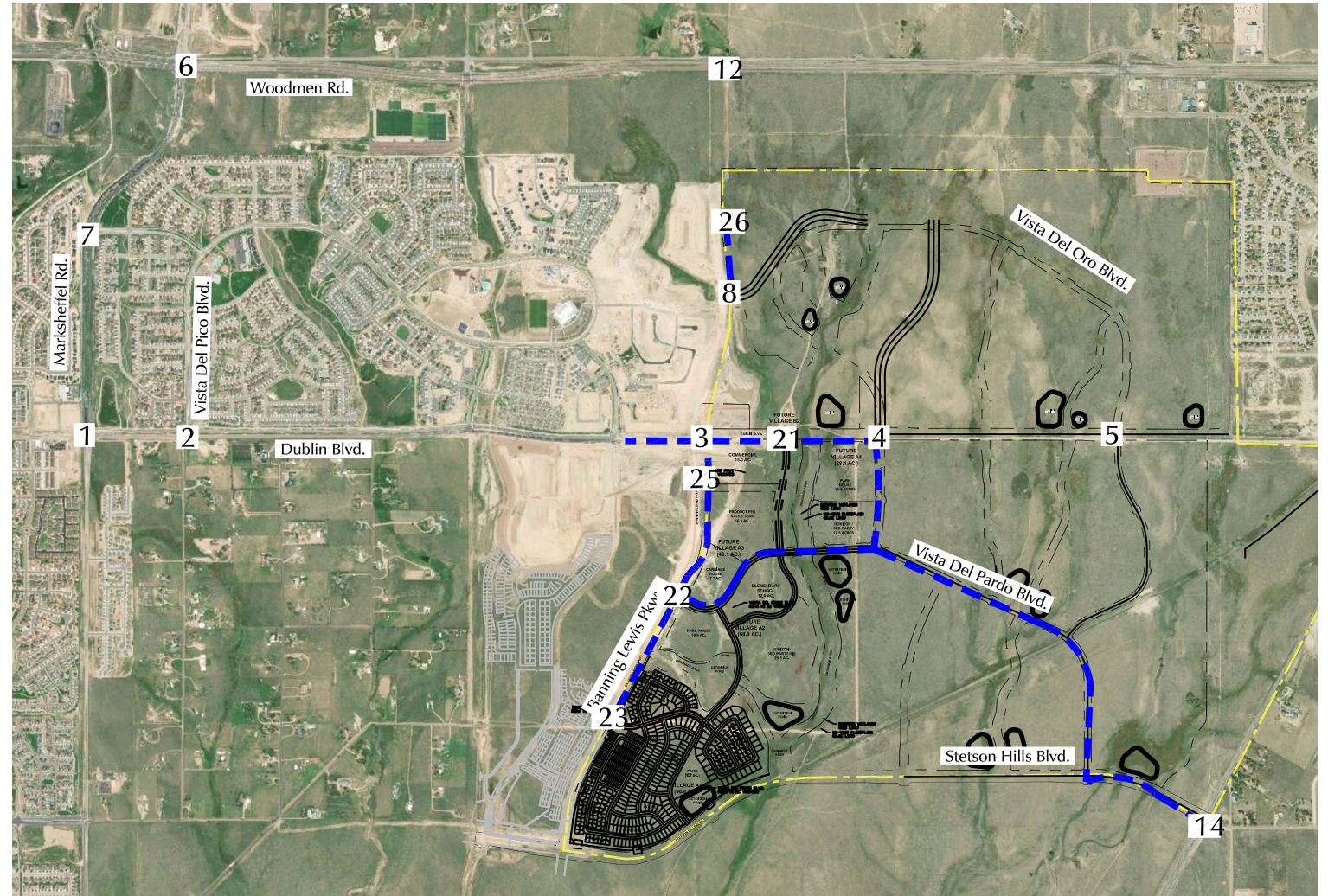
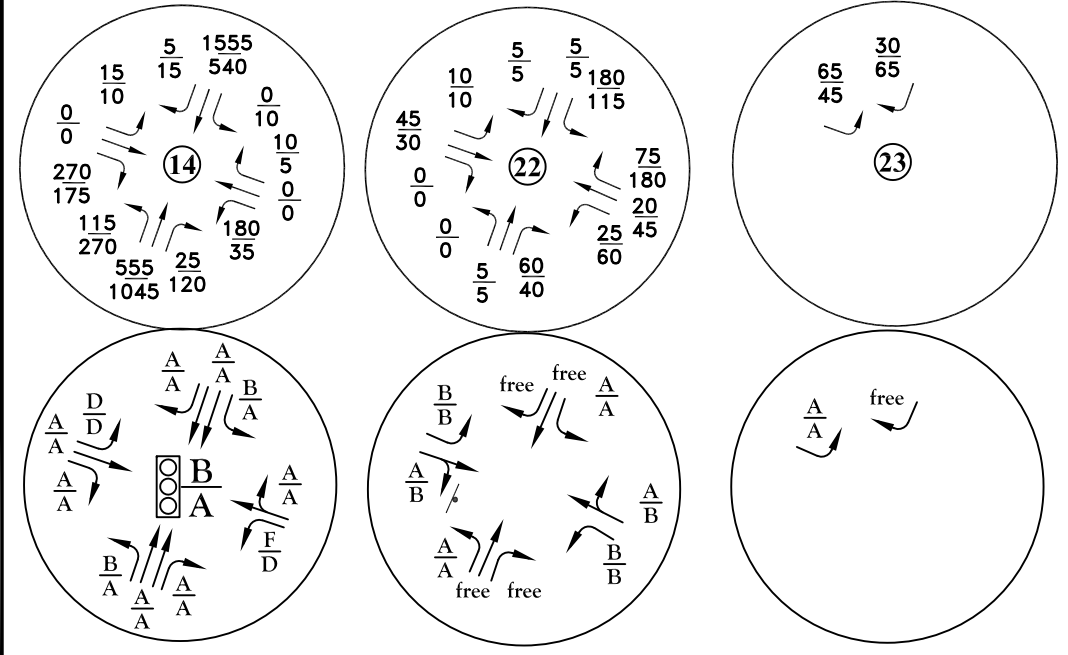
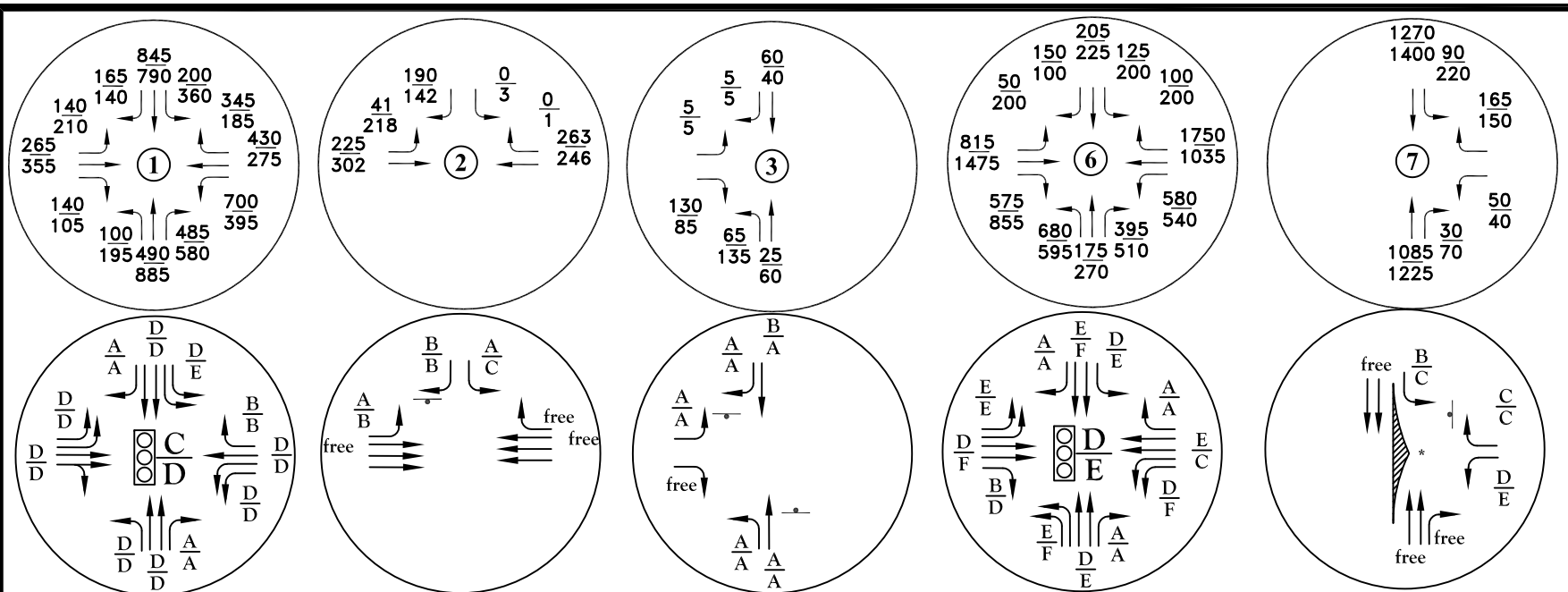


Figure 18
Short-Term Site-Generated Traffic Volumes
 Banning Lewis ABCD (LSC# 204160)



*Channelized T

LEGEND: $\frac{XX}{XX}$ = AM Peak-Hour Traffic (veh/hr)
 $\frac{XX}{XX}$ = PM Peak-Hour Traffic (veh/hr)

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

= Traffic Signal = Stop Sign

- Constructed Roads

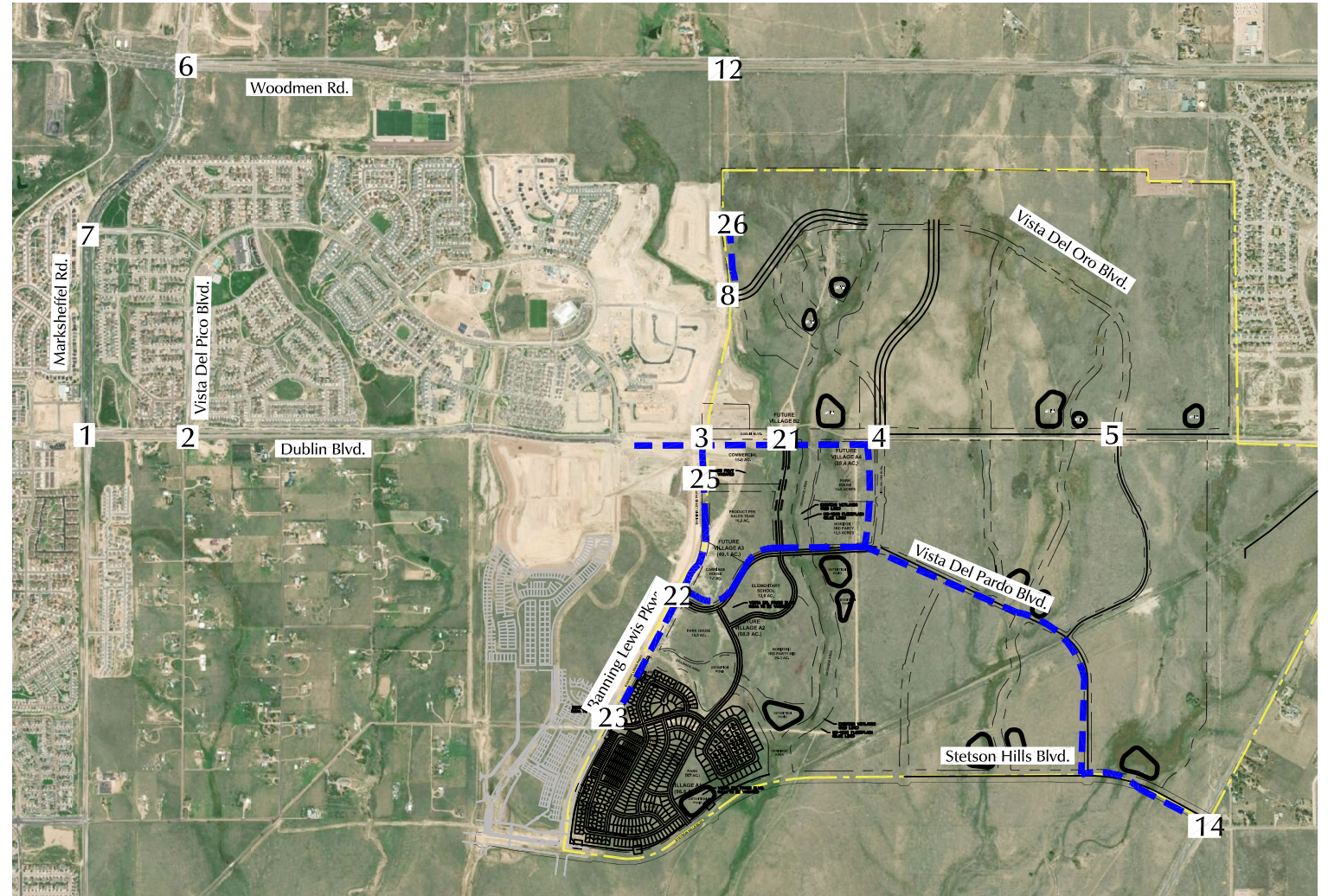
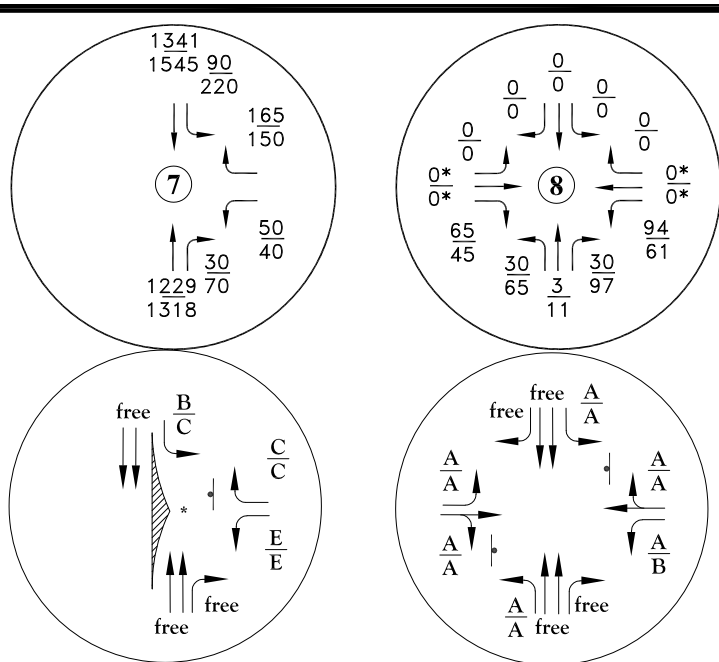
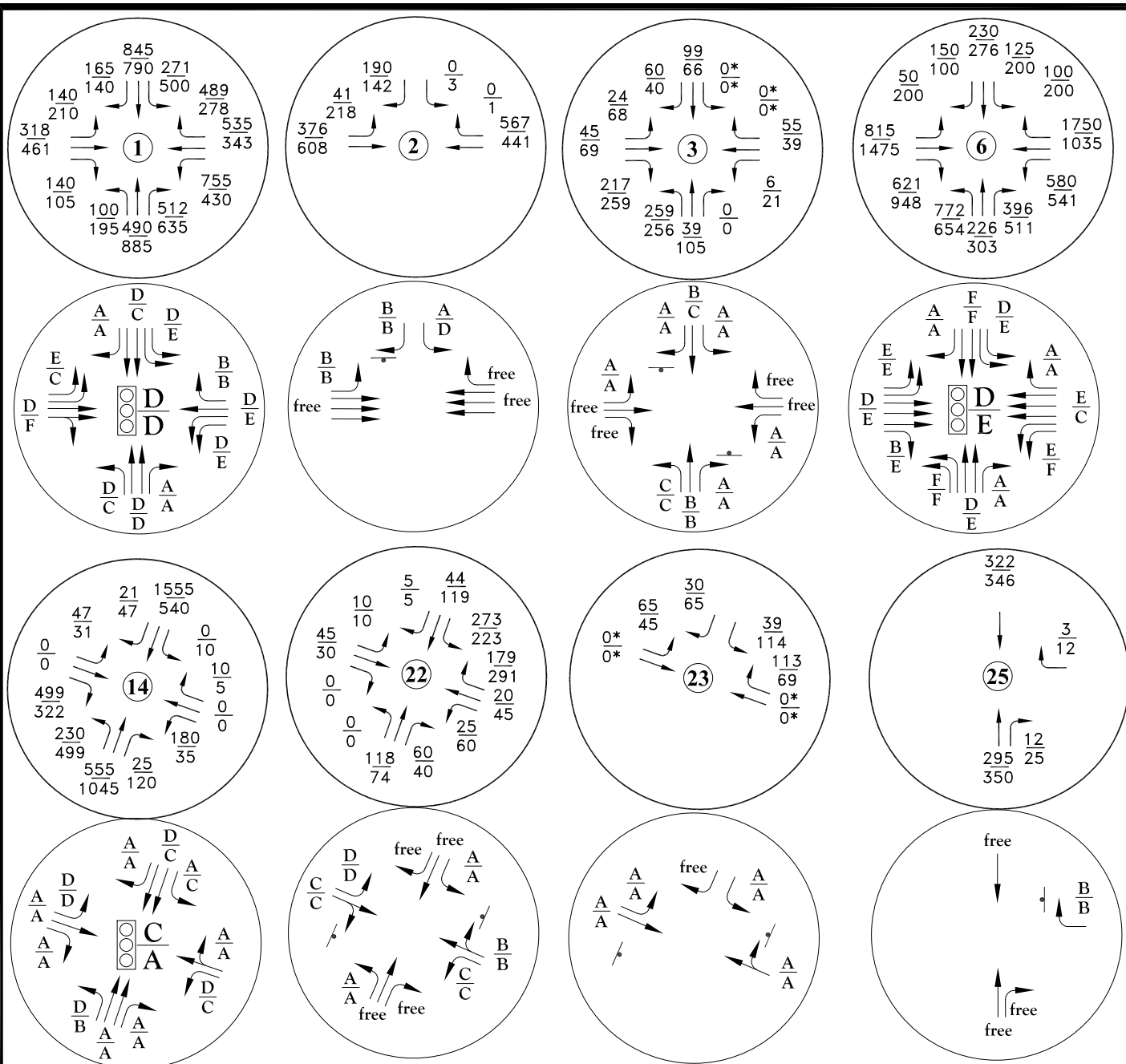


Figure 19

Short-Term Background Traffic Conditions

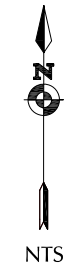
Banning Lewis ABCD (LSC# 204160)





*Channelized T

*For the master plan modeling, no routing was shown in this direction. However, a low volume of traffic would be expected for this movement. The model will be updated in more detail at the next stage of development for this area.



LEGEND: $\frac{XX}{XX} = \frac{\text{AM Peak-Hour Traffic (veh/hr)}}{\text{PM Peak-Hour Traffic (veh/hr)}}$
 $\frac{A}{B} = \frac{\text{AM Individual Movement Peak-Hour Level of Service}}{\text{PM Individual Movement Peak-Hour Level of Service}}$
 = Traffic Signal = Stop Sign

- Constructed Roads

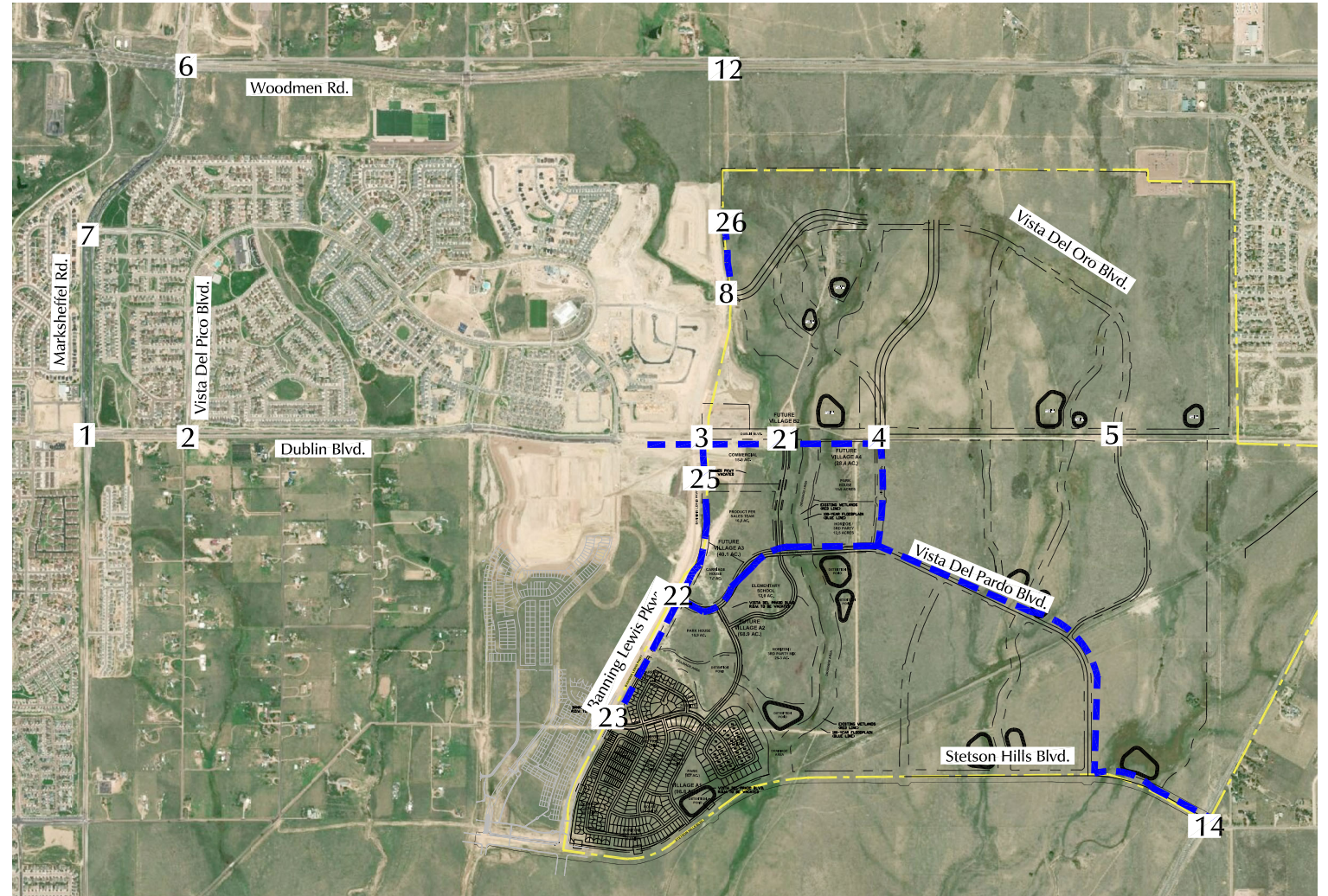
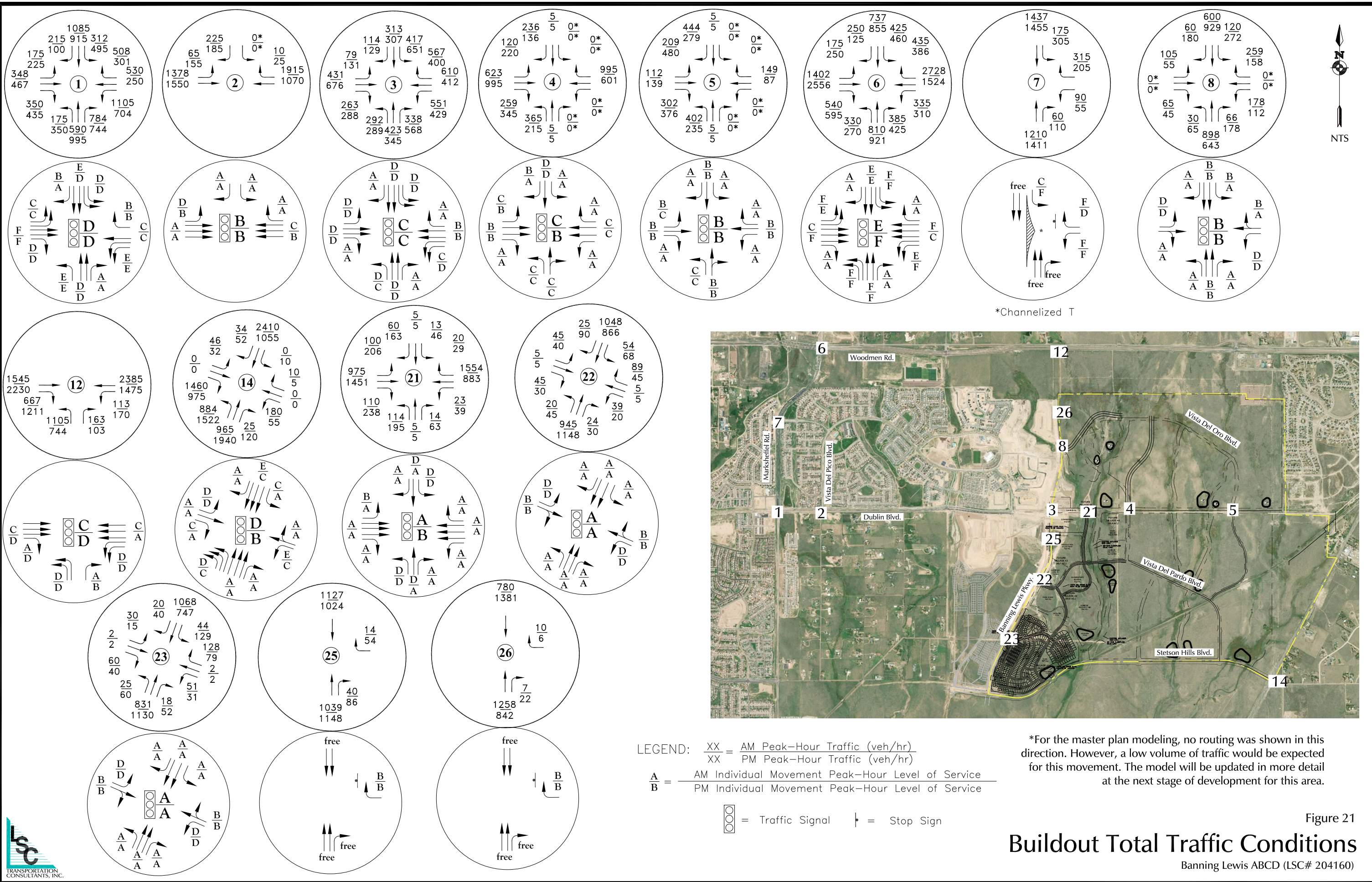


Figure 20
Short-Term Total Traffic Conditions
 Banning Lewis ABCD (LSC# 204160)





*Channelized T



Figure 21
Buildout Total Traffic Conditions
 Banning Lewis ABCD (LSC# 204160)

Dublin/Marksheffel Improvements Exhibits





Widening for limited length additional lane

Allows for restriping and use of these lanes that are currently striped out

Shift RT Lane to the east to accommodate 2nd NB Thru Lane

Dublin

Marksheffel

N nts

See Marksheffel Sheet



Dublin

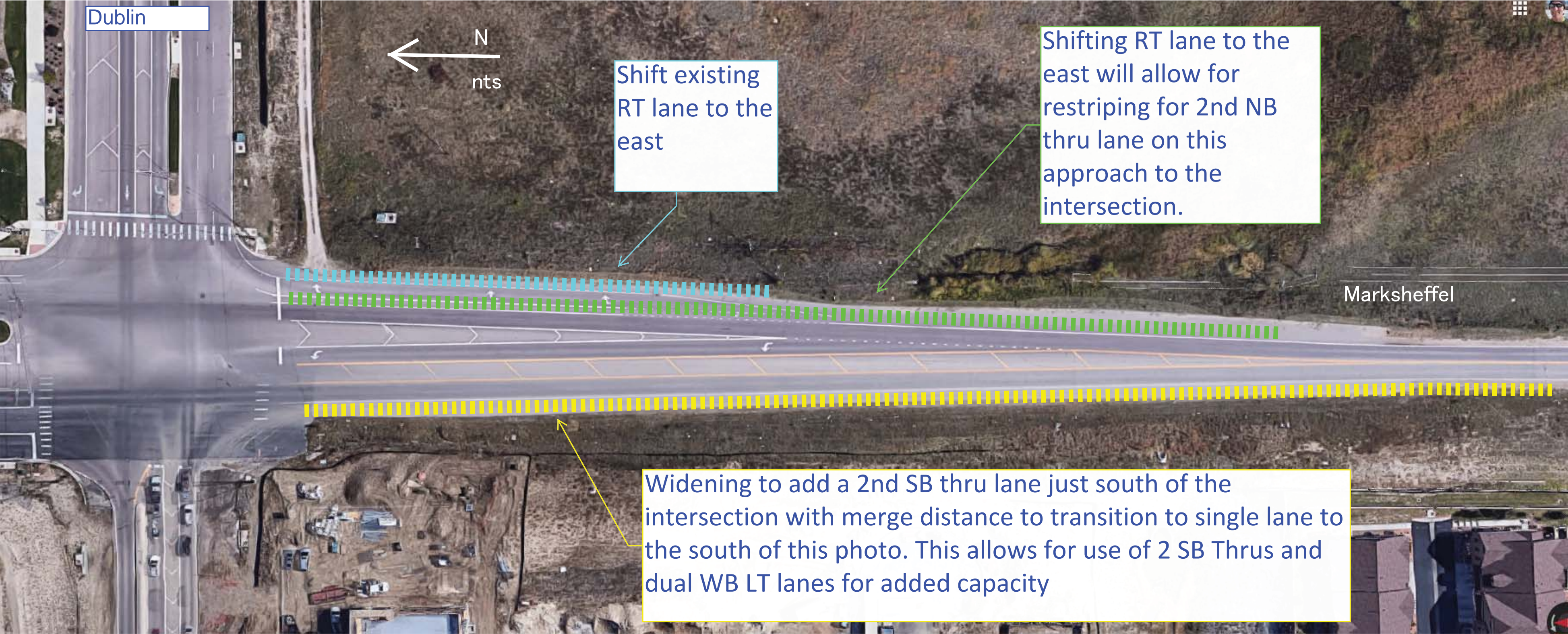


Shift existing RT lane to the east

Shifting RT lane to the east will allow for restriping for 2nd NB thru lane on this approach to the intersection.

Marksheffel

Widening to add a 2nd SB thru lane just south of the intersection with merge distance to transition to single lane to the south of this photo. This allows for use of 2 SB Thrus and dual WB LT lanes for added capacity



Traffic Counts



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File Name : Marksheffel Rd - Dublin Blvd AM
 Site Code : 00204160
 Start Date : 3/10/2020
 Page No : 1

Groups Printed- Unshifted

Start Time	Marksheffel Rd Southbound					Dublin Blvd Westbound					Marksheffel Rd Northbound					Dublin Blvd Eastbound					Int. Total
	L	T	R	U	App. Total	L	T	R	U	App. Total	L	T	R	U	App. Total	L	T	R	U	App. Total	
06:30 AM	4	114	22	1	141	81	30	9	0	120	25	89	17	0	131	16	10	36	0	62	454
06:45 AM	3	131	46	1	181	91	50	13	0	154	27	84	35	0	146	18	17	48	0	83	564
Total	7	245	68	2	322	172	80	22	0	274	52	173	52	0	277	34	27	84	0	145	1018
07:00 AM	8	135	37	1	181	102	90	12	0	204	31	83	31	0	145	24	34	35	0	93	623
07:15 AM	10	164	31	0	205	87	87	18	0	192	19	75	83	0	177	46	43	29	0	118	692
07:30 AM	15	146	49	5	215	78	122	22	0	222	17	80	86	0	183	34	64	38	0	136	756
07:45 AM	16	182	36	1	235	80	126	24	0	230	22	110	53	0	185	26	53	23	0	102	752
Total	49	627	153	7	836	347	425	76	0	848	89	348	253	0	690	130	194	125	0	449	2823
08:00 AM	15	121	19	1	156	87	58	9	0	154	37	84	68	0	189	14	38	35	0	87	586
08:15 AM	17	113	29	1	160	75	60	16	0	151	25	85	55	0	165	24	38	25	0	87	563
Grand Total	88	1106	269	11	1474	681	623	123	0	1427	203	690	428	0	1321	202	297	269	0	768	4990
Apprch %	6	75	18.2	0.7		47.7	43.7	8.6	0		15.4	52.2	32.4	0		26.3	38.7	35	0		
Total %	1.8	22.2	5.4	0.2	29.5	13.6	12.5	2.5	0	28.6	4.1	13.8	8.6	0	26.5	4	6	5.4	0	15.4	

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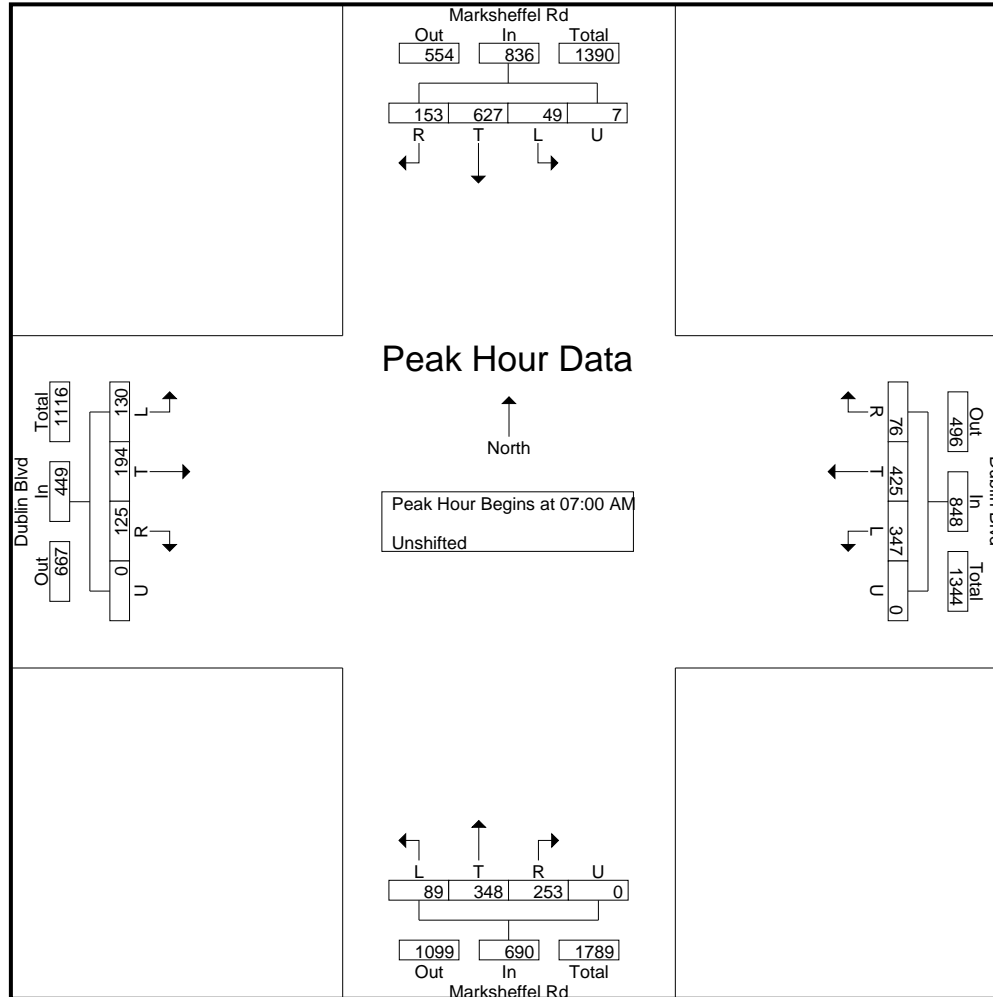
File Name : Marksheffel Rd - Dublin Blvd AM
 Site Code : 00204160
 Start Date : 3/10/2020
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Start Time	Marksheffel Rd Southbound					Dublin Blvd Westbound					Marksheffel Rd Northbound					Dublin Blvd Eastbound					Int. Total
	L	T	R	U	App. Total	L	T	R	U	App. Total	L	T	R	U	App. Total	L	T	R	U	App. Total	
Peak Hour Analysis From 6:30:00 AM to 8:15:00 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 7:00:00 AM																					
7:00:00 AM	8	135	37	1	181	102	90	12	0	204	31	83	31	0	145	24	34	35	0	93	623
7:15:00 AM	10	164	31	0	205	87	87	18	0	192	19	75	83	0	177	46	43	29	0	118	692
7:30:00 AM	15	146	49	5	215	78	122	22	0	222	17	80	86	0	183	34	64	38	0	136	756
7:45:00 AM	16	182	36	1	235	80	126	24	0	230	22	110	53	0	185	26	53	23	0	102	752
Total Volume	49	627	153	7	836	347	425	76	0	848	89	348	253	0	690	130	194	125	0	449	2823
% App. Total	5.9	75	18.3	0.8		40.9	50.1	9	0		12.9	50.4	36.7	0		29	43.2	27.8	0		
PHF	.766	.861	.781	.350	.889	.850	.843	.792	.000	.922	.718	.791	.735	.000	.932	.707	.758	.822	.000	.825	.934

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Start Time	Marksheffel Rd Southbound					Dublin Blvd Westbound					Marksheffel Rd Northbound					Dublin Blvd Eastbound					Int. Total
	L	T	R	U	App. Total	L	T	R	U	App. Total	L	T	R	U	App. Total	L	T	R	U	App. Total	

Peak Hour Analysis From 6:30:00 AM to 8:15:00 AM - Peak 1 of 1

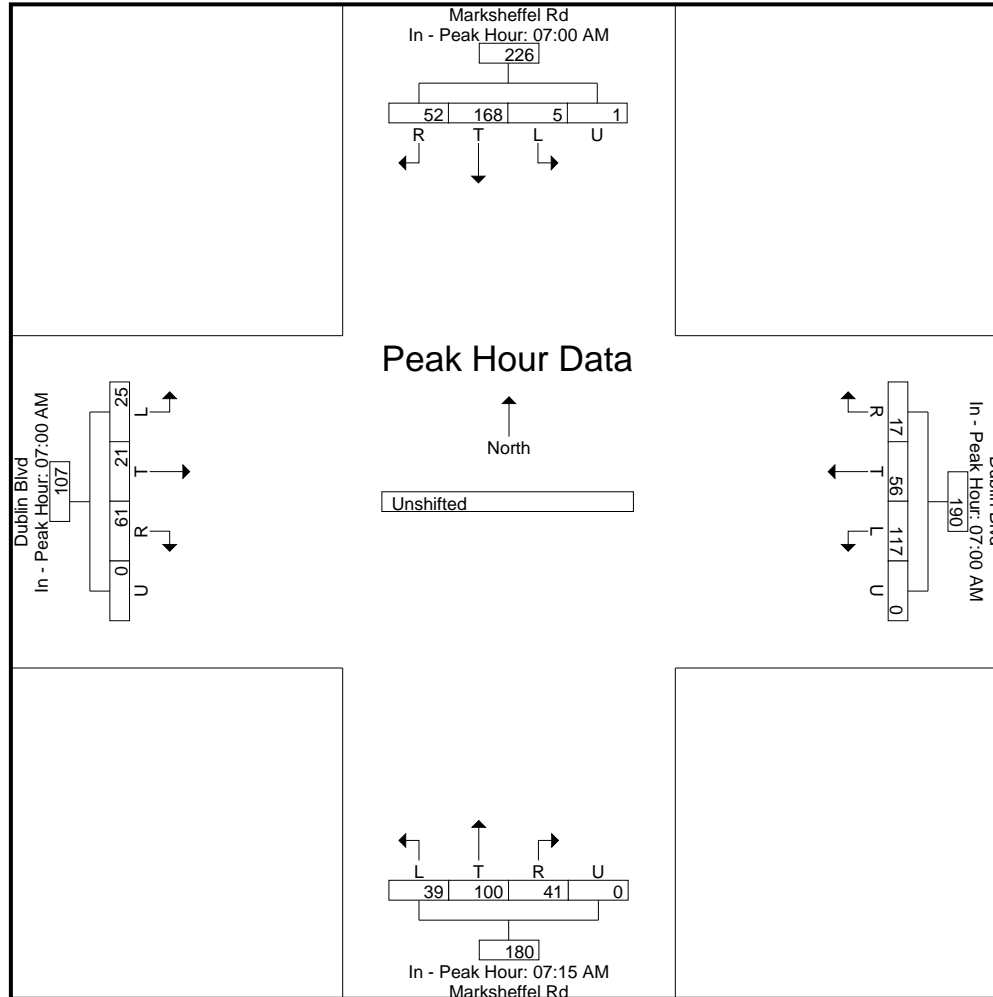
Peak Hour for Each Approach Begins at:

	7:00:00 AM					7:00:00 AM					7:15:00 AM					7:00:00 AM				
+0 mins.	8	135	37	1	181	102	90	12	0	204	19	75	83	0	177	24	34	35	0	93
+5 mins.	10	164	31	0	205	87	87	18	0	192	17	80	86	0	183	46	43	29	0	118
+10 mins.	15	146	49	5	215	78	122	22	0	222	22	110	53	0	185	34	64	38	0	136
+15 mins.	16	182	36	1	235	80	126	24	0	230	37	84	68	0	189	26	53	23	0	102
Total Volume	49	627	153	7	836	347	425	76	0	848	95	349	290	0	734	130	194	125	0	449
% App. Total	5.9	75	18.3	0.8		40.9	50.1	9	0		12.9	47.5	39.5	0		29	43.2	27.8	0	
PHF	.766	.861	.781	.350	.889	.850	.843	.792	.000	.922	.642	.793	.843	.000	.971	.707	.758	.822	.000	.825

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File Name : Marksheffel Rd - Dublin Blvd PM
 Site Code : 00204160
 Start Date : 3/10/2020
 Page No : 1

Groups Printed- Unshifted

Start Time	Marksheffel Rd Southbound					Dublin Blvd Westbound					Marksheffel Rd Northbound					Dublin Blvd Eastbound					Int. Total
	L	T	R	U	App. Total	L	T	R	U	App. Total	L	T	R	U	App. Total	L	T	R	U	App. Total	
04:00 PM	11	117	35	0	163	60	47	12	0	119	39	138	71	0	248	45	56	18	0	119	649
04:15 PM	7	121	37	0	165	56	38	7	0	101	44	157	83	0	284	66	60	15	0	141	691
04:30 PM	11	131	37	0	179	54	44	9	1	108	38	169	81	0	288	29	49	32	0	110	685
04:45 PM	11	132	26	0	169	53	39	5	0	97	56	161	70	0	287	41	38	25	0	104	657
Total	40	501	135	0	676	223	168	33	1	425	177	625	305	0	1107	181	203	90	0	474	2682
05:00 PM	6	126	31	4	167	72	42	7	0	121	37	149	91	0	277	51	55	29	0	135	700
05:15 PM	9	118	32	0	159	50	45	17	0	112	52	173	89	0	314	49	56	25	0	130	715
05:30 PM	9	130	36	0	175	43	42	6	0	91	47	152	95	0	294	52	70	16	0	138	698
05:45 PM	12	110	31	0	153	44	36	5	0	85	42	156	94	0	292	56	57	24	0	137	667
Total	36	484	130	4	654	209	165	35	0	409	178	630	369	0	1177	208	238	94	0	540	2780
Grand Total	76	985	265	4	1330	432	333	68	1	834	355	1255	674	0	2284	389	441	184	0	1014	5462
Apprch %	5.7	74.1	19.9	0.3		51.8	39.9	8.2	0.1		15.5	54.9	29.5	0		38.4	43.5	18.1	0		
Total %	1.4	18	4.9	0.1	24.4	7.9	6.1	1.2	0	15.3	6.5	23	12.3	0	41.8	7.1	8.1	3.4	0	18.6	

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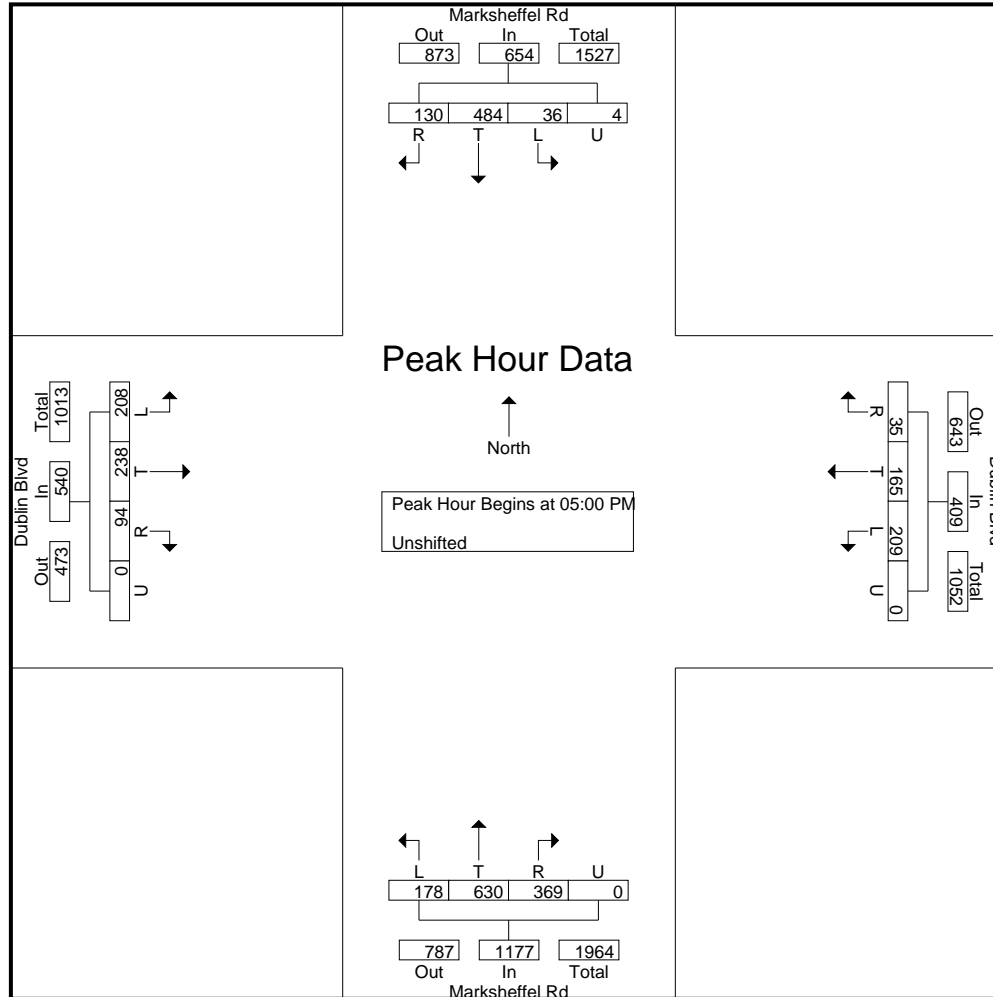
File Name : Marksheffel Rd - Dublin Blvd PM
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Start Time	Marksheffel Rd Southbound					Dublin Blvd Westbound					Marksheffel Rd Northbound					Dublin Blvd Eastbound					Int. Total
	L	T	R	U	App. Total	L	T	R	U	App. Total	L	T	R	U	App. Total	L	T	R	U	App. Total	
Peak Hour Analysis From 4:00:00 PM to 5:45:00 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 5:00:00 PM																					
5:00:00 PM	6	126	31	4	167	72	42	7	0	121	37	149	91	0	277	51	55	29	0	135	700
5:15:00 PM	9	118	32	0	159	50	45	17	0	112	52	173	89	0	314	49	56	25	0	130	715
5:30:00 PM	9	130	36	0	175	43	42	6	0	91	47	152	95	0	294	52	70	16	0	138	698
5:45:00 PM	12	110	31	0	153	44	36	5	0	85	42	156	94	0	292	56	57	24	0	137	667
Total Volume	36	484	130	4	654	209	165	35	0	409	178	630	369	0	1177	208	238	94	0	540	2780
% App. Total	5.5	74	19.9	0.6		51.1	40.3	8.6	0		15.1	53.5	31.4	0		38.5	44.1	17.4	0		
PHF	.750	.931	.903	.250	.934	.726	.917	.515	.000	.845	.856	.910	.971	.000	.937	.929	.850	.810	.000	.978	.972

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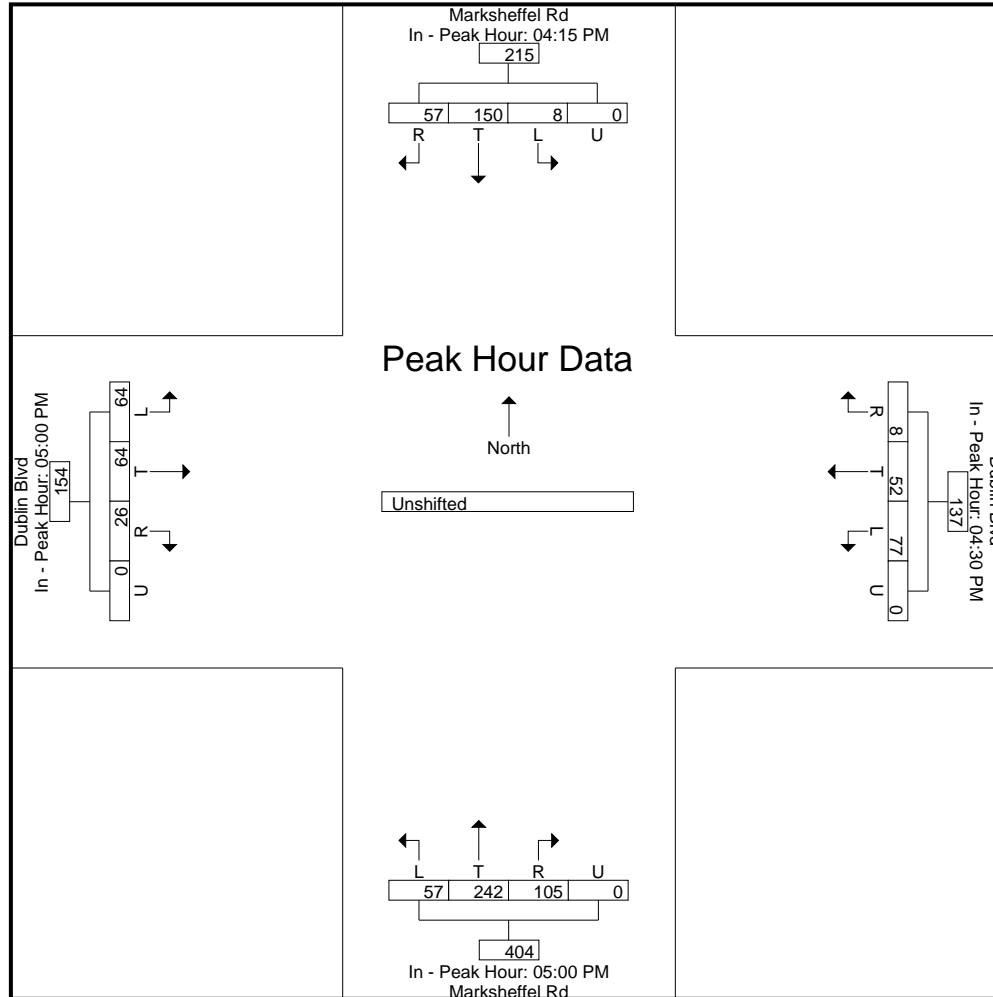
File Name : Marksheffel Rd - Dublin Blvd PM
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Start Time	Marksheffel Rd Southbound					Dublin Blvd Westbound					Marksheffel Rd Northbound					Dublin Blvd Eastbound					Int. Total
	L	T	R	U	App. Total	L	T	R	U	App. Total	L	T	R	U	App. Total	L	T	R	U	App. Total	
Peak Hour Analysis From 4:00:00 PM to 5:45:00 PM - Peak 1 of 1																					
Peak Hour for Each Approach Begins at:																					
	4:15:00 PM					4:30:00 PM					5:00:00 PM					5:00:00 PM					
+0 mins.	7	121	37	0	165	54	44	9	1	108	37	149	91	0	277	51	55	29	0	135	
+5 mins.	11	131	37	0	179	53	39	5	0	97	52	173	89	0	314	49	56	25	0	130	
+10 mins.	11	132	26	0	169	72	42	7	0	121	47	152	95	0	294	52	70	16	0	138	
+15 mins.	6	126	31	4	167	50	45	17	0	112	42	156	94	0	292	56	57	24	0	137	
Total Volume	35	510	131	4	680	229	170	38	1	438	178	630	369	0	1177	208	238	94	0	540	
% App. Total	5.1	75	19.3	0.6		52.3	38.8	8.7	0.2		15.1	53.5	31.4	0		38.5	44.1	17.4	0		
PHF	.795	.966	.885	.250	.950	.795	.944	.559	.250	.905	.856	.910	.971	.000	.937	.929	.850	.810	.000	.978	

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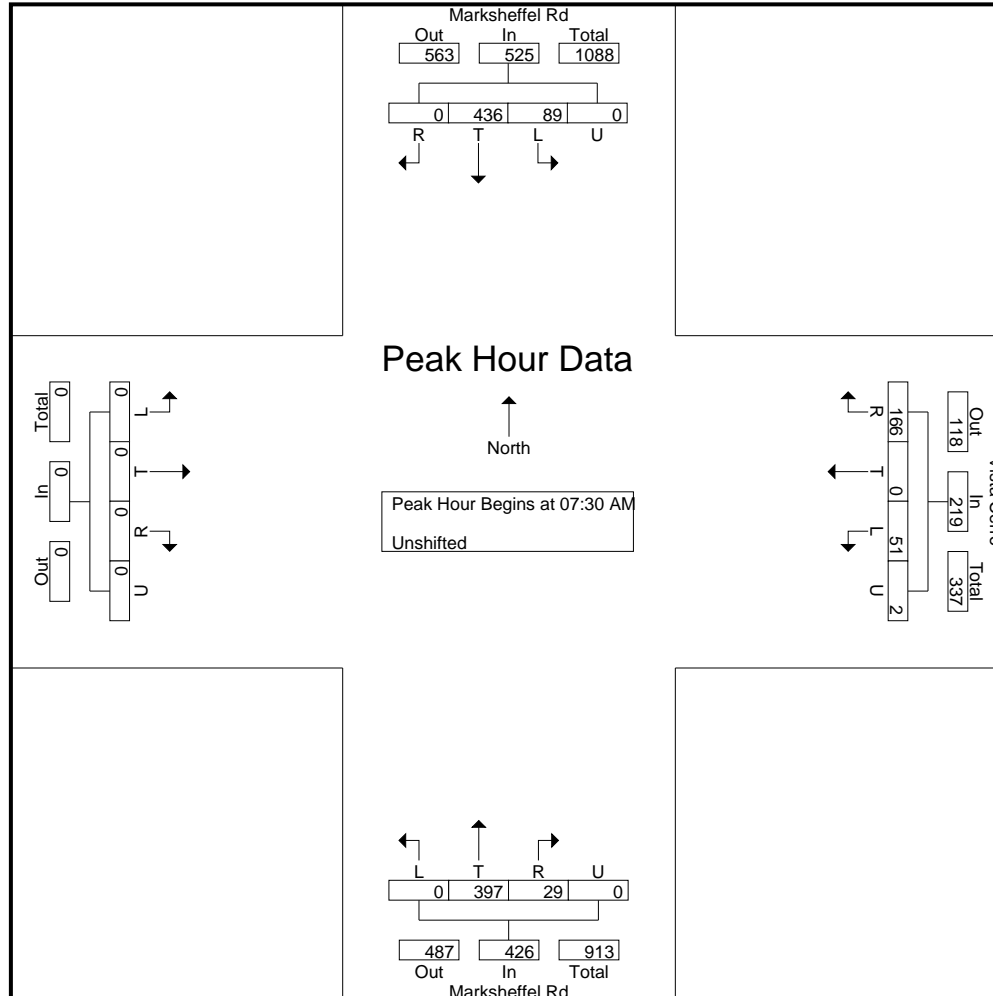
Groups Printed- Unshifted

Start Time	Marksheffel Rd Southbound					Vista Cerro Westbound					Marksheffel Rd Northbound					Eastbound					Int. Total
	L	T	R	U	App. Total	L	T	R	U	App. Total	L	T	R	U	App. Total	L	T	R	U	App. Total	
06:30 AM	5	85	0	0	90	7	0	34	0	41	0	102	2	0	104	0	0	0	0	0	235
06:45 AM	10	108	0	0	118	9	0	24	0	33	0	79	3	0	82	0	0	0	0	0	233
Total	15	193	0	0	208	16	0	58	0	74	0	181	5	0	186	0	0	0	0	0	468
07:00 AM	11	108	0	0	119	16	0	29	0	45	0	62	0	0	62	0	0	0	0	0	226
07:15 AM	12	119	1	0	132	14	0	45	0	59	0	93	3	0	96	0	0	0	0	0	287
07:30 AM	28	117	0	0	145	12	0	51	1	64	0	116	4	0	120	0	0	0	0	0	329
07:45 AM	18	119	0	0	137	16	0	33	1	50	0	93	10	0	103	0	0	0	0	0	290
Total	69	463	1	0	533	58	0	158	2	218	0	364	17	0	381	0	0	0	0	0	1132
08:00 AM	21	86	0	0	107	8	0	34	0	42	0	98	6	0	104	0	0	0	0	0	253
08:15 AM	22	114	0	0	136	15	0	48	0	63	0	90	9	0	99	0	0	0	0	0	298
Grand Total	127	856	1	0	984	97	0	298	2	397	0	733	37	0	770	0	0	0	0	0	2151
Apprch %	12.9	87	0.1	0		24.4	0	75.1	0.5		0	95.2	4.8	0		0	0	0	0		
Total %	5.9	39.8	0	0	45.7	4.5	0	13.9	0.1	18.5	0	34.1	1.7	0	35.8	0	0	0	0	0	

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 Site Code : 00204160
 Start Date : 6/17/2020
 Page No : 4

Start Time	Marksheffel Rd Southbound					Vista Cerro Westbound					Marksheffel Rd Northbound					Eastbound					Int. Total
	L	T	R	U	App. Total	L	T	R	U	App. Total	L	T	R	U	App. Total	L	T	R	U	App. Total	

Peak Hour Analysis From 6:30:00 AM to 8:15:00 AM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	7:00:00 AM					7:30:00 AM					7:30:00 AM					6:30:00 AM				
+0 mins.	11	108	0	0	119	12	0	51	1	64	0	116	4	0	120	0	0	0	0	0
+5 mins.	12	119	1	0	132	16	0	33	1	50	0	93	10	0	103	0	0	0	0	0
+10 mins.	28	117	0	0	145	8	0	34	0	42	0	98	6	0	104	0	0	0	0	0
+15 mins.	18	119	0	0	137	15	0	48	0	63	0	90	9	0	99	0	0	0	0	0
Total Volume	69	463	1	0	533	51	0	166	2	219	0	397	29	0	426	0	0	0	0	0
% App. Total	12.9	86.9	0.2	0		23.3	0	75.8	0.9		0	93.2	6.8	0		0	0	0	0	
PHF	.616	.973	.250	.000	.919	.797	.000	.814	.500	.855	.000	.856	.725	.000	.888	.000	.000	.000	.000	.000

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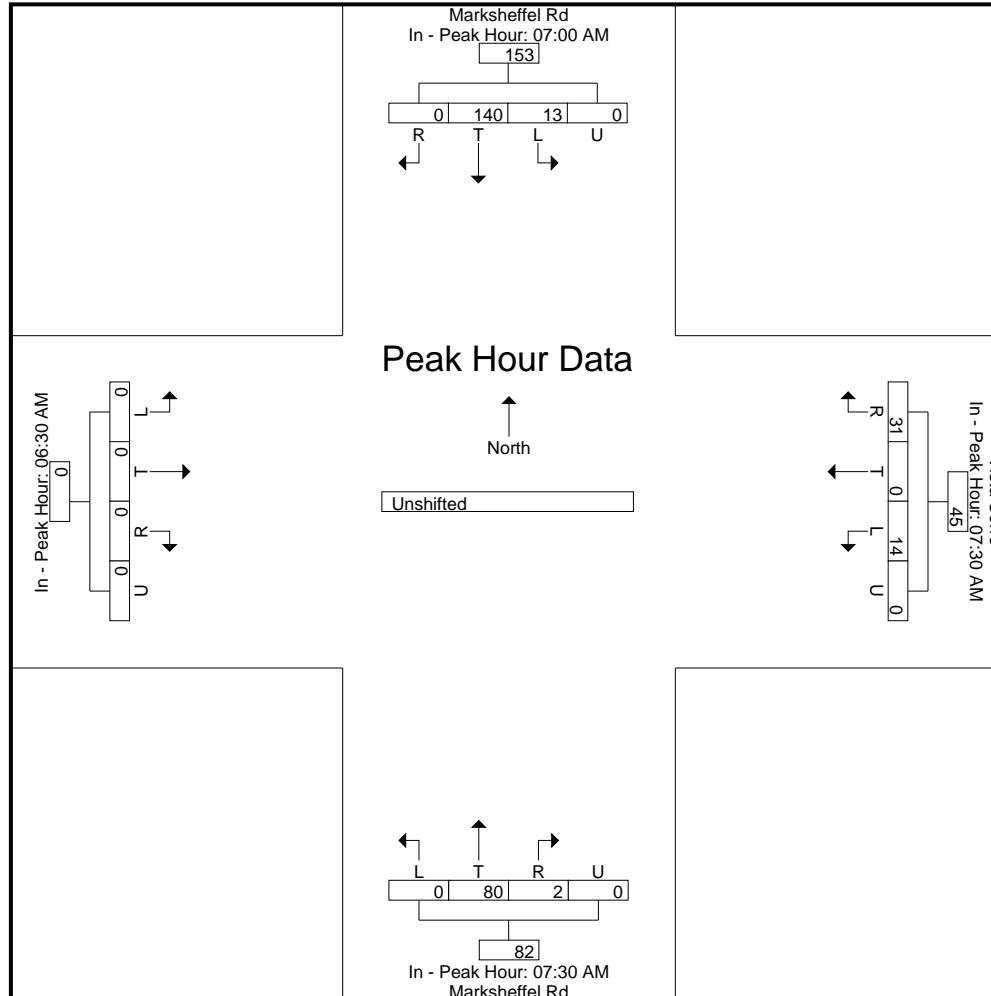
545 E Pikes Peak Ave, Suite 210
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File Name : Marksheffel Rd - Vista Cerro AM

Site Code : 00204160

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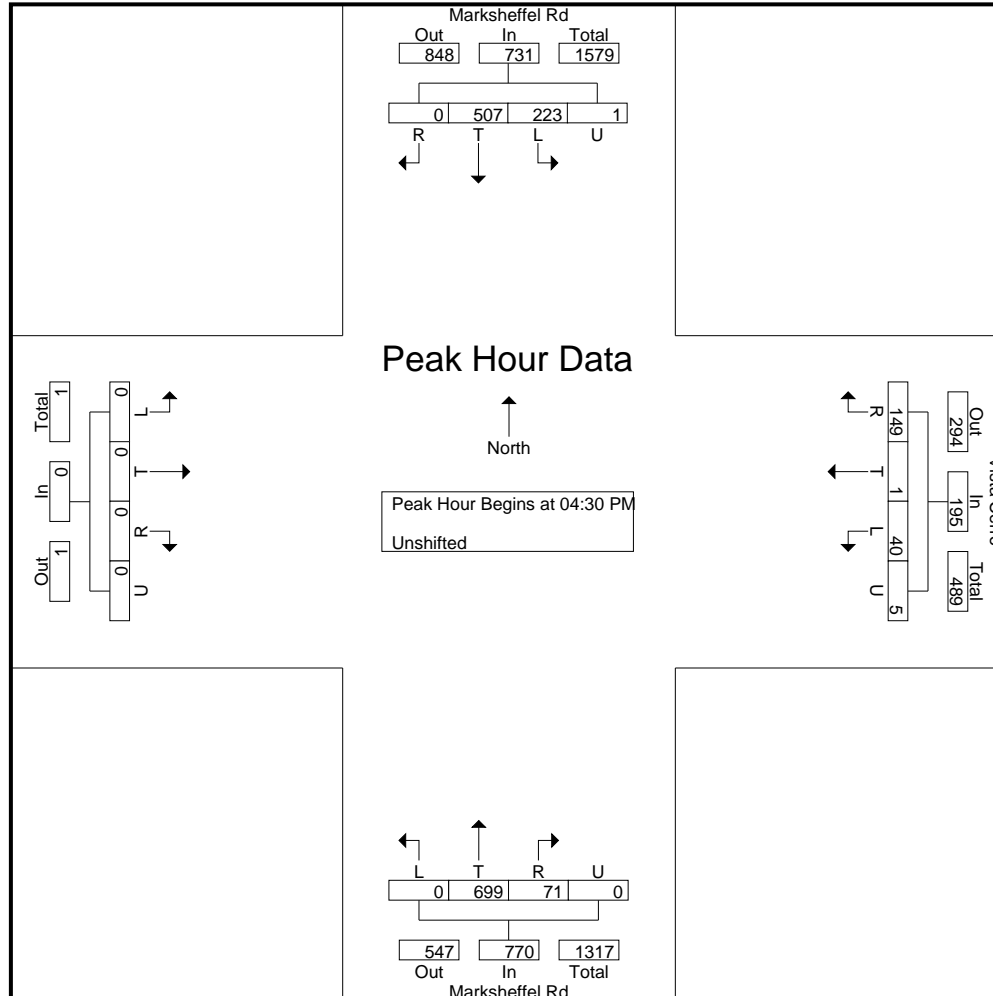
Groups Printed- Unshifted

Start Time	Marksheffel Rd Southbound					Vista Cerro Westbound					Marksheffel Rd Northbound					Eastbound					Int. Total
	L	T	R	U	App. Total	L	T	R	U	App. Total	L	T	R	U	App. Total	L	T	R	U	App. Total	
04:00 PM	48	130	0	0	178	8	0	29	0	37	0	168	17	0	185	0	0	0	0	0	400
04:15 PM	56	123	0	0	179	3	0	36	0	39	0	149	24	0	173	0	0	0	0	0	391
04:30 PM	52	126	0	0	178	9	0	44	1	54	0	179	13	0	192	0	0	0	0	0	424
04:45 PM	52	120	0	1	173	10	1	41	3	55	0	172	19	0	191	0	0	0	0	0	419
Total	208	499	0	1	708	30	1	150	4	185	0	668	73	0	741	0	0	0	0	0	1634
05:00 PM	57	145	0	0	202	11	0	30	0	41	0	188	15	0	203	0	0	0	0	0	446
05:15 PM	62	116	0	0	178	10	0	34	1	45	0	160	24	0	184	0	0	0	0	0	407
05:30 PM	66	134	0	1	201	4	0	36	1	41	0	162	16	0	178	0	0	0	0	0	420
05:45 PM	52	111	0	0	163	12	0	25	0	37	0	147	21	0	168	0	0	0	0	0	368
Total	237	506	0	1	744	37	0	125	2	164	0	657	76	0	733	0	0	0	0	0	1641
Grand Total	445	1005	0	2	1452	67	1	275	6	349	0	1325	149	0	1474	0	0	0	0	0	3275
Apprch %	30.6	69.2	0	0.1		19.2	0.3	78.8	1.7		0	89.9	10.1	0		0	0	0	0		
Total %	13.6	30.7	0	0.1	44.3	2	0	8.4	0.2	10.7	0	40.5	4.5	0	45	0	0	0	0	0	

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File Name : Marksheffel Rd - Vista Cerro PM
 Site Code : 00204160
 Start Date : 6/17/2020
 Page No : 3



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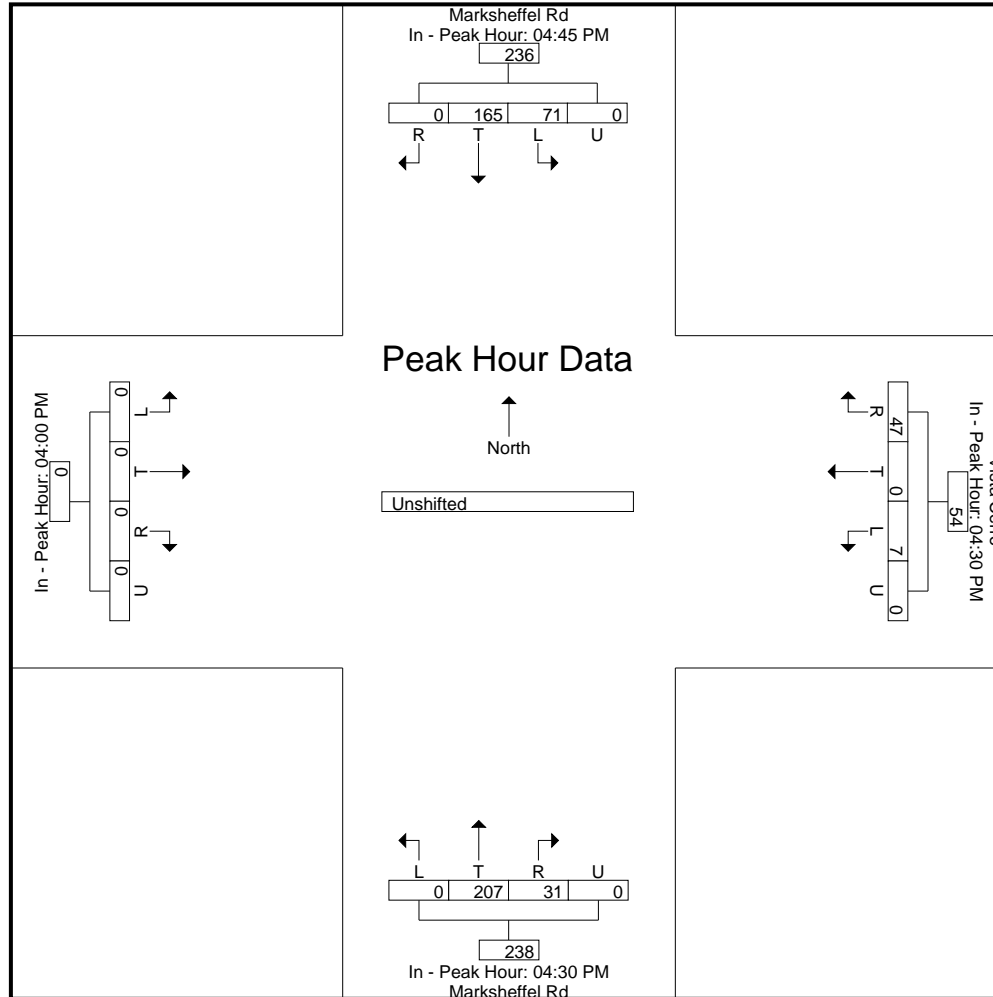
File Name : Marksheffel Rd - Vista Cerro PM
 Site Code : 00204160
 Start Date : 6/17/2020
 Page No : 4

Start Time	Marksheffel Rd Southbound					Vista Cerro Westbound					Marksheffel Rd Northbound					Eastbound					Int. Total
	L	T	R	U	App. Total	L	T	R	U	App. Total	L	T	R	U	App. Total	L	T	R	U	App. Total	
Peak Hour Analysis From 4:00:00 PM to 5:45:00 PM - Peak 1 of 1																					
Peak Hour for Each Approach Begins at:																					
	4:45:00 PM					4:30:00 PM					4:30:00 PM					4:00:00 PM					
+0 mins.	52	120	0	1	173	9	0	44	1	54	0	179	13	0	192	0	0	0	0	0	
+5 mins.	57	145	0	0	202	10	1	41	3	55	0	172	19	0	191	0	0	0	0	0	
+10 mins.	62	116	0	0	178	11	0	30	0	41	0	188	15	0	203	0	0	0	0	0	
+15 mins.	66	134	0	1	201	10	0	34	1	45	0	160	24	0	184	0	0	0	0	0	
Total Volume	237	515	0	2	754	40	1	149	5	195	0	699	71	0	770	0	0	0	0	0	
% App. Total	31.4	68.3	0	0.3		20.5	0.5	76.4	2.6		0	90.8	9.2	0		0	0	0	0		
PHF	.898	.888	.000	.500	.933	.909	.250	.847	.417	.886	.000	.930	.740	.000	.948	.000	.000	.000	.000	.000	

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File Name : Marksheffel Rd - Vista Cerro PM
 Site Code : 00204160
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File Name : Marksheffel Rd - Woodmen Rd AM
 Site Code : 00204160
 Start Date : 6/18/2020
 Page No : 1

Groups Printed- Unshifted

Start Time	Marksheffel Rd Southbound					Woodmen Rd Westbound					Marksheffel Rd Northbound					Woodmen Rd Eastbound					Int. Total
	L	T	R	U	App. Total	L	T	R	U	App. Total	L	T	R	U	App. Total	L	T	R	U	App. Total	
06:30 AM	3	4	12	0	19	33	255	2	0	290	88	5	30	0	123	5	60	53	0	118	550
06:45 AM	1	7	19	0	27	56	188	2	0	246	68	8	36	0	112	10	105	53	0	168	553
Total	4	11	31	0	46	89	443	4	0	536	156	13	66	0	235	15	165	106	0	286	1103
07:00 AM	2	8	20	0	30	27	220	1	0	248	64	6	30	0	100	3	75	51	0	129	507
07:15 AM	2	9	18	0	29	49	262	0	1	312	75	11	27	0	113	11	115	69	0	195	649
07:30 AM	4	13	25	0	42	46	278	2	0	326	94	25	39	0	158	8	112	74	0	194	720
07:45 AM	1	8	19	0	28	63	238	3	0	304	65	7	35	0	107	4	135	71	0	210	649
Total	9	38	82	0	129	185	998	6	1	1190	298	49	131	0	478	26	437	265	0	728	2525
08:00 AM	2	4	15	0	21	50	200	2	0	252	76	5	34	0	115	10	91	53	0	154	542
08:15 AM	0	5	24	0	29	50	217	2	0	269	70	12	39	0	121	7	103	55	1	166	585
Grand Total	15	58	152	0	225	374	1858	14	1	2247	600	79	270	0	949	58	796	479	1	1334	4755
Apprch %	6.7	25.8	67.6	0		16.6	82.7	0.6	0		63.2	8.3	28.5	0		4.3	59.7	35.9	0.1		
Total %	0.3	1.2	3.2	0	4.7	7.9	39.1	0.3	0	47.3	12.6	1.7	5.7	0	20	1.2	16.7	10.1	0	28.1	

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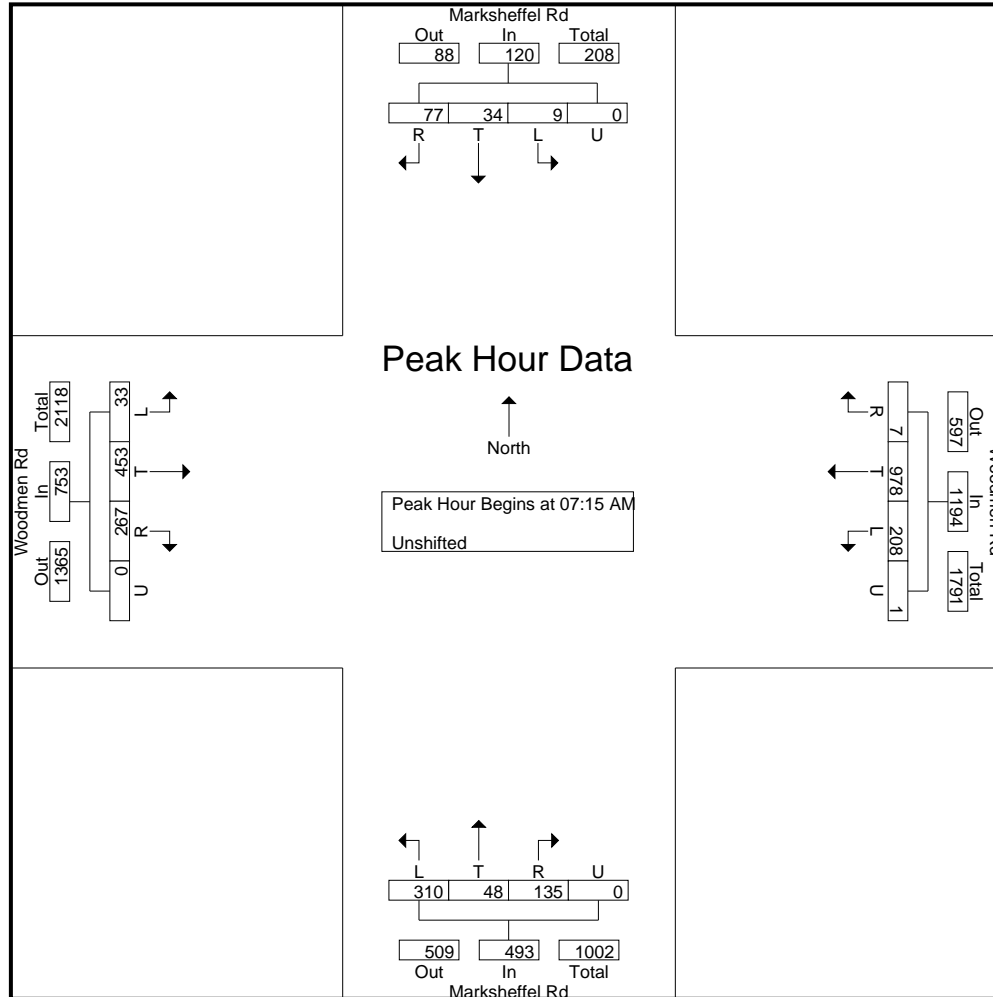
File Name : Marksheffel Rd - Woodmen Rd AM
 Site Code : 00204160
 Start Date : 6/18/2020
 Page No : 2

Start Time	Marksheffel Rd Southbound					Woodmen Rd Westbound					Marksheffel Rd Northbound					Woodmen Rd Eastbound					Int. Total
	L	T	R	U	App. Total	L	T	R	U	App. Total	L	T	R	U	App. Total	L	T	R	U	App. Total	
Peak Hour Analysis From 6:30:00 AM to 8:15:00 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 7:15:00 AM																					
7:15:00 AM	2	9	18	0	29	49	262	0	1	312	75	11	27	0	113	11	115	69	0	195	649
7:30:00 AM	4	13	25	0	42	46	278	2	0	326	94	25	39	0	158	8	112	74	0	194	720
7:45:00 AM	1	8	19	0	28	63	238	3	0	304	65	7	35	0	107	4	135	71	0	210	649
8:00:00 AM	2	4	15	0	21	50	200	2	0	252	76	5	34	0	115	10	91	53	0	154	542
Total Volume	9	34	77	0	120	208	978	7	1	1194	310	48	135	0	493	33	453	267	0	753	2560
% App. Total	7.5	28.3	64.2	0		17.4	81.9	0.6	0.1		62.9	9.7	27.4	0		4.4	60.2	35.5	0		
PHF	.563	.654	.770	.000	.714	.825	.879	.583	.250	.916	.824	.480	.865	.000	.780	.750	.839	.902	.000	.896	.889

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File Name : Marksheffel Rd - Woodmen Rd AM
 Site Code : 00204160
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File Name : Marksheffel Rd - Woodmen Rd AM
 Site Code : 00204160
 Start Date : 6/18/2020
 Page No : 4

Start Time	Marksheffel Rd Southbound					Woodmen Rd Westbound					Marksheffel Rd Northbound					Woodmen Rd Eastbound					Int. Total
	L	T	R	U	App. Total	L	T	R	U	App. Total	L	T	R	U	App. Total	L	T	R	U	App. Total	

Peak Hour Analysis From 6:30:00 AM to 8:15:00 AM - Peak 1 of 1

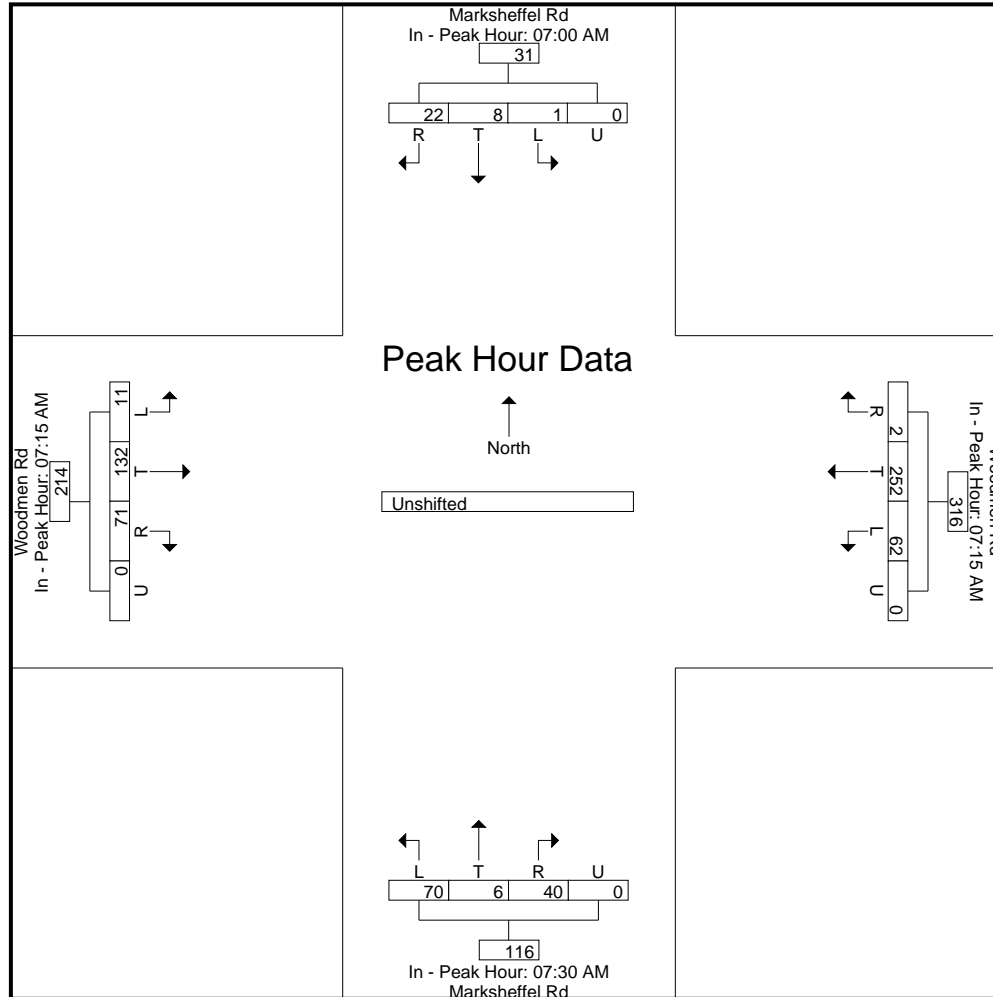
Peak Hour for Each Approach Begins at:

	7:00:00 AM					7:15:00 AM					7:30:00 AM					7:45:00 AM				
+0 mins.	2	8	20	0	30	49	262	0	1	312	94	25	39	0	158	11	115	69	0	195
+5 mins.	2	9	18	0	29	46	278	2	0	326	65	7	35	0	107	8	112	74	0	194
+10 mins.	4	13	25	0	42	63	238	3	0	304	76	5	34	0	115	4	135	71	0	210
+15 mins.	1	8	19	0	28	50	200	2	0	252	70	12	39	0	121	10	91	53	0	154
Total Volume	9	38	82	0	129	208	978	7	1	1194	305	49	147	0	501	33	453	267	0	753
% App. Total	7	29.5	63.6	0		17.4	81.9	0.6	0.1		60.9	9.8	29.3	0		4.4	60.2	35.5	0	
PHF	.563	.731	.820	.000	.768	.825	.879	.583	.250	.916	.811	.490	.942	.000	.793	.750	.839	.902	.000	.896

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File Name : Marksheffel Rd - Woodmen Rd AM
 Site Code : 00204160
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File Name : Marksheffel Rd - Woodmen Rd PM
 Site Code : 00204160
 Start Date : 6/18/2020
 Page No : 1

Groups Printed- Unshifted

Start Time	Marksheffel Rd Southbound					Woodmen Rd Westbound					Marksheffel Rd Northbound					Woodmen Rd Eastbound					Int. Total
	L	T	R	U	App. Total	L	T	R	U	App. Total	L	T	R	U	App. Total	L	T	R	U	App. Total	
04:00 PM	0	11	12	0	23	57	223	0	0	280	76	7	77	0	160	13	271	101	0	385	848
04:15 PM	5	13	21	0	39	64	181	2	0	247	92	18	97	0	207	12	275	102	4	393	886
04:30 PM	2	5	16	0	23	64	188	0	0	252	77	13	87	0	177	11	270	117	2	400	852
04:45 PM	5	8	23	0	36	54	201	4	0	259	110	23	85	0	218	20	267	96	2	385	898
Total	12	37	72	0	121	239	793	6	0	1038	355	61	346	0	762	56	1083	416	8	1563	3484
05:00 PM	3	7	12	0	22	47	205	1	0	253	77	15	107	0	199	12	299	105	0	416	890
05:15 PM	2	10	13	0	25	69	189	0	0	258	88	23	102	0	213	13	259	115	0	387	883
05:30 PM	3	10	23	0	36	82	184	5	1	272	84	21	102	0	207	15	291	94	1	401	916
05:45 PM	0	4	9	0	13	62	161	0	0	223	93	12	84	0	189	16	247	94	4	361	786
Total	8	31	57	0	96	260	739	6	1	1006	342	71	395	0	808	56	1096	408	5	1565	3475
Grand Total	20	68	129	0	217	499	1532	12	1	2044	697	132	741	0	1570	112	2179	824	13	3128	6959
Apprch %	9.2	31.3	59.4	0		24.4	75	0.6	0		44.4	8.4	47.2	0		3.6	69.7	26.3	0.4		
Total %	0.3	1	1.9	0	3.1	7.2	22	0.2	0	29.4	10	1.9	10.6	0	22.6	1.6	31.3	11.8	0.2	44.9	

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File Name : Marksheffel Rd - Woodmen Rd PM
 Site Code : 00204160
 Start Date : 6/18/2020
 Page No : 2

Start Time	Marksheffel Rd Southbound					Woodmen Rd Westbound					Marksheffel Rd Northbound					Woodmen Rd Eastbound					Int. Total
	L	T	R	U	App. Total	L	T	R	U	App. Total	L	T	R	U	App. Total	L	T	R	U	App. Total	
Peak Hour Analysis From 4:00:00 PM to 5:45:00 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 4:45:00 PM																					
4:45:00 PM	5	8	23	0	36	54	201	4	0	259	110	23	85	0	218	20	267	96	2	385	898
5:00:00 PM	3	7	12	0	22	47	205	1	0	253	77	15	107	0	199	12	299	105	0	416	890
5:15:00 PM	2	10	13	0	25	69	189	0	0	258	88	23	102	0	213	13	259	115	0	387	883
5:30:00 PM	3	10	23	0	36	82	184	5	1	272	84	21	102	0	207	15	291	94	1	401	916
Total Volume	13	35	71	0	119	252	779	10	1	1042	359	82	396	0	837	60	1116	410	3	1589	3587
% App. Total	10.9	29.4	59.7	0		24.2	74.8	1	0.1		42.9	9.8	47.3	0		3.8	70.2	25.8	0.2		
PHF	.650	.875	.772	.000	.826	.768	.950	.500	.250	.958	.816	.891	.925	.000	.960	.750	.933	.891	.375	.955	.979

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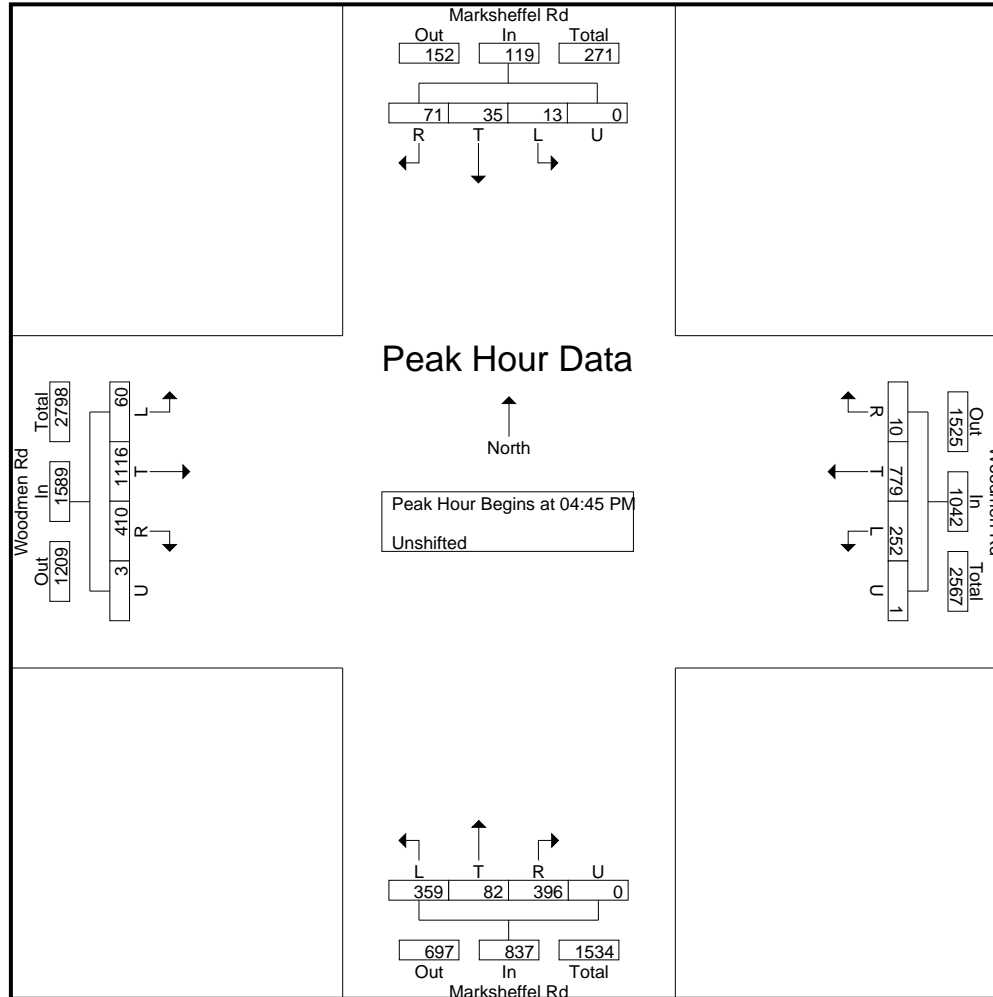
545 E Pikes Peak Ave, Suite 210
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File Name : Marksheffel Rd - Woodmen Rd PM

Site Code : 00204160

Start Date : 6/18/2020

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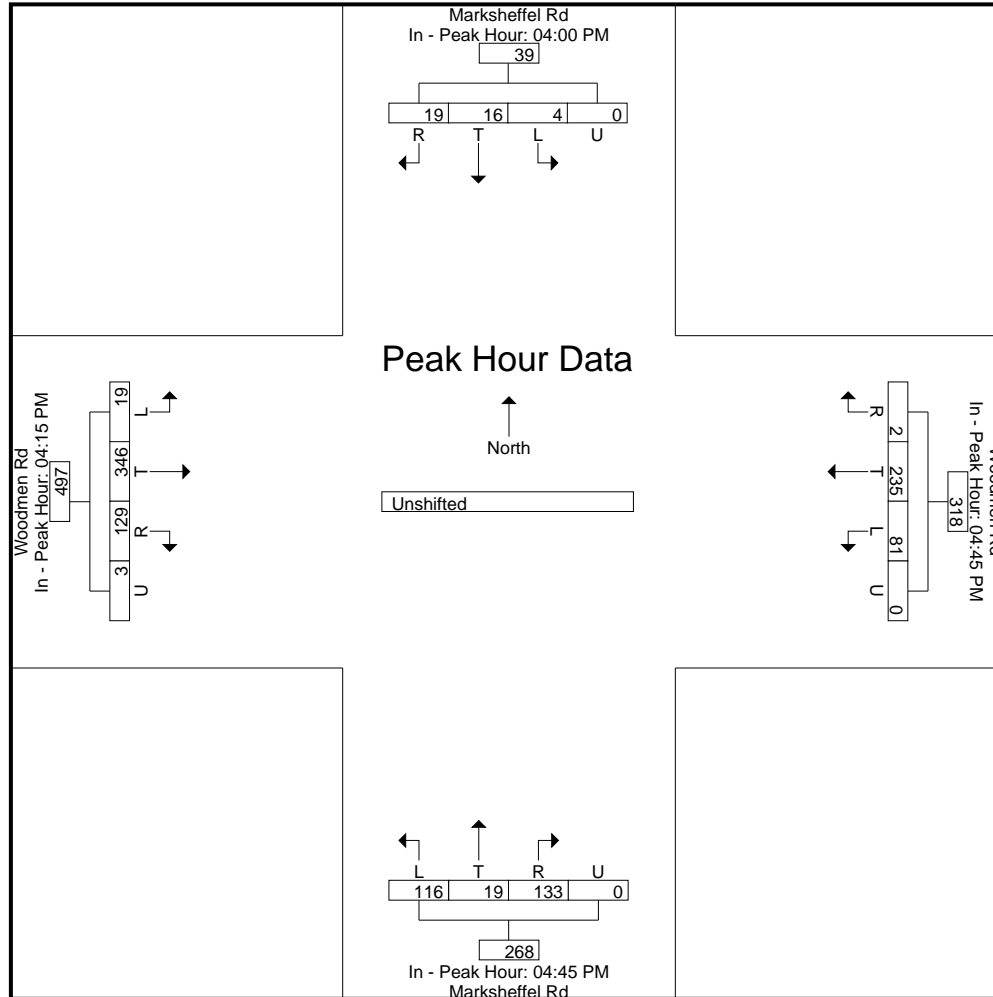
File Name : Marksheffel Rd - Woodmen Rd PM
 Site Code : 00204160
 Start Date : 6/18/2020
 Page No : 4

Start Time	Marksheffel Rd Southbound					Woodmen Rd Westbound					Marksheffel Rd Northbound					Woodmen Rd Eastbound					Int. Total
	L	T	R	U	App. Total	L	T	R	U	App. Total	L	T	R	U	App. Total	L	T	R	U	App. Total	
Peak Hour Analysis From 4:00:00 PM to 5:45:00 PM - Peak 1 of 1																					
Peak Hour for Each Approach Begins at:																					
	4:00:00 PM					4:45:00 PM					4:45:00 PM					4:15:00 PM					
+0 mins.	0	11	12	0	23	54	201	4	0	259	110	23	85	0	218	12	275	102	4	393	
+5 mins.	5	13	21	0	39	47	205	1	0	253	77	15	107	0	199	11	270	117	2	400	
+10 mins.	2	5	16	0	23	69	189	0	0	258	88	23	102	0	213	20	267	96	2	385	
+15 mins.	5	8	23	0	36	82	184	5	1	272	84	21	102	0	207	12	299	105	0	416	
Total Volume	12	37	72	0	121	252	779	10	1	1042	359	82	396	0	837	55	1111	420	8	1594	
% App. Total	9.9	30.6	59.5	0		24.2	74.8	1	0.1		42.9	9.8	47.3	0		3.5	69.7	26.3	0.5		
PHF	.600	.712	.783	.000	.776	.768	.950	.500	.250	.958	.816	.891	.925	.000	.960	.688	.929	.897	.500	.958	

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File Name : Marksheffel Rd - Woodmen Rd PM
 Site Code : 00204160
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LSC Transportation Consultants, Inc.

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File Name : Vista Del Pico - Dublin Blvd AM
 Site Code : 00204160
 Start Date : 6/16/2020
 Page No : 1

Groups Printed- Unshifted

Start Time	Vista Del Pico Southbound					Dublin Blvd Westbound					Northbound					Dublin Blvd Eastbound					Int. Total
	L	T	R	U	App. Total	L	T	R	U	App. Total	L	T	R	U	App. Total	L	T	R	U	App. Total	
06:30 AM	0	0	34	1	35	0	41	0	1	42	0	0	0	0	0	3	28	0	0	31	108
06:45 AM	0	0	40	0	40	0	48	0	0	48	0	0	0	0	0	5	67	0	0	72	160
Total	0	0	74	1	75	0	89	0	1	90	0	0	0	0	0	8	95	0	0	103	268
07:00 AM	0	0	47	0	47	0	68	0	0	68	0	0	0	0	0	8	59	0	0	67	182
07:15 AM	0	0	41	0	41	0	83	0	0	83	0	0	0	0	0	12	44	0	0	56	180
07:30 AM	0	0	57	1	58	0	60	0	0	60	0	0	0	0	0	8	66	0	0	74	192
07:45 AM	0	0	45	0	45	0	52	0	0	52	0	0	0	0	0	13	56	0	1	70	167
Total	0	0	190	1	191	0	263	0	0	263	0	0	0	0	0	41	225	0	1	267	721
08:00 AM	0	0	35	0	35	0	66	2	0	68	1	0	0	0	1	6	55	0	0	61	165
08:15 AM	0	0	33	0	33	0	58	0	0	58	0	0	0	0	0	17	57	0	0	74	165
Grand Total	0	0	332	2	334	0	476	2	1	479	1	0	0	0	1	72	432	0	1	505	1319
Apprch %	0	0	99.4	0.6		0	99.4	0.4	0.2		100	0	0	0		14.3	85.5	0	0.2		
Total %	0	0	25.2	0.2	25.3	0	36.1	0.2	0.1	36.3	0.1	0	0	0	0.1	5.5	32.8	0	0.1	38.3	

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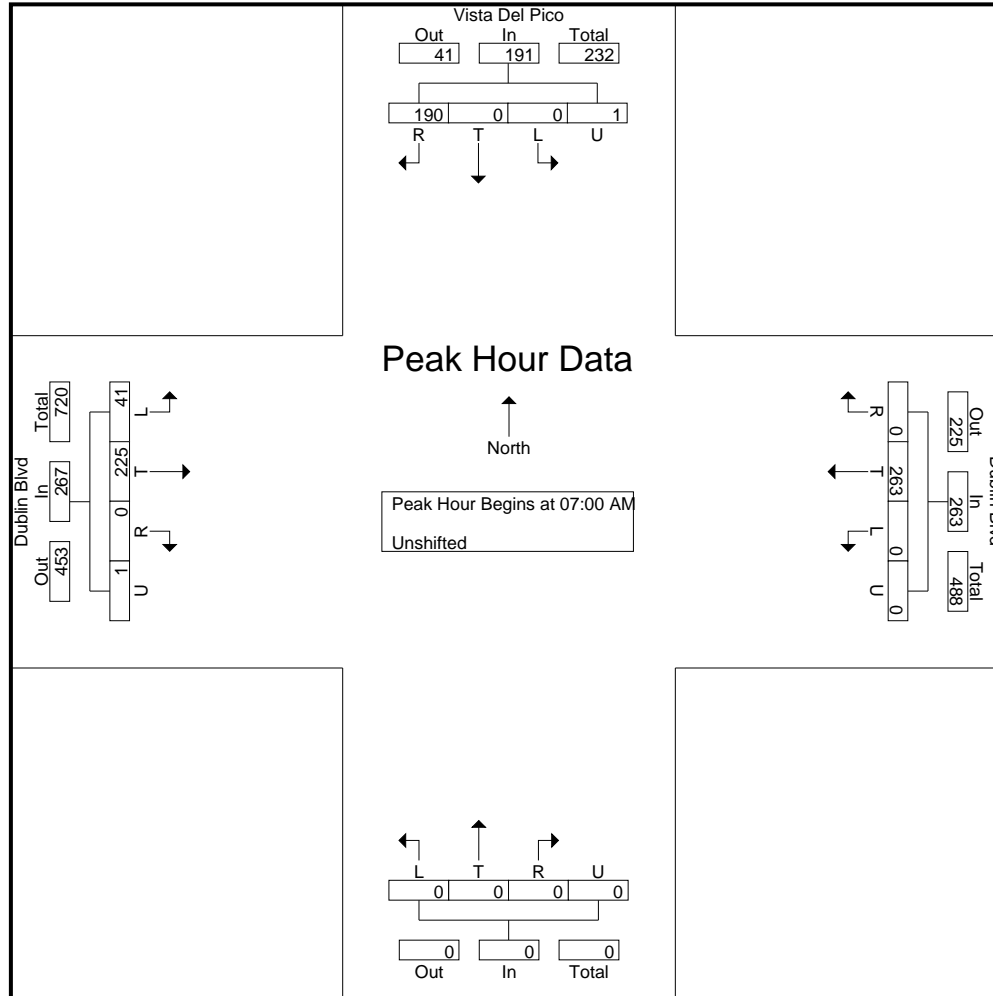
File Name : Vista Del Pico - Dublin Blvd AM
 Site Code : 00204160
 Start Date : 6/16/2020
 Page No : 2

Start Time	Vista Del Pico Southbound					Dublin Blvd Westbound					Northbound					Dublin Blvd Eastbound					Int. Total
	L	T	R	U	App. Total	L	T	R	U	App. Total	L	T	R	U	App. Total	L	T	R	U	App. Total	
Peak Hour Analysis From 6:30:00 AM to 8:15:00 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 7:00:00 AM																					
7:00:00 AM	0	0	47	0	47	0	68	0	0	68	0	0	0	0	0	8	59	0	0	67	182
7:15:00 AM	0	0	41	0	41	0	83	0	0	83	0	0	0	0	0	12	44	0	0	56	180
7:30:00 AM	0	0	57	1	58	0	60	0	0	60	0	0	0	0	0	8	66	0	0	74	192
7:45:00 AM	0	0	45	0	45	0	52	0	0	52	0	0	0	0	0	13	56	0	1	70	167
Total Volume	0	0	190	1	191	0	263	0	0	263	0	0	0	0	0	41	225	0	1	267	721
% App. Total	0	0	99.5	0.5		0	100	0	0		0	0	0	0		15.4	84.3	0	0.4		
PHF	.000	.000	.833	.250	.823	.000	.792	.000	.000	.792	.000	.000	.000	.000	.000	.788	.852	.000	.250	.902	.939

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File Name : Vista Del Pico - Dublin Blvd AM
 Site Code : 00204160
 Start Date : 6/16/2020
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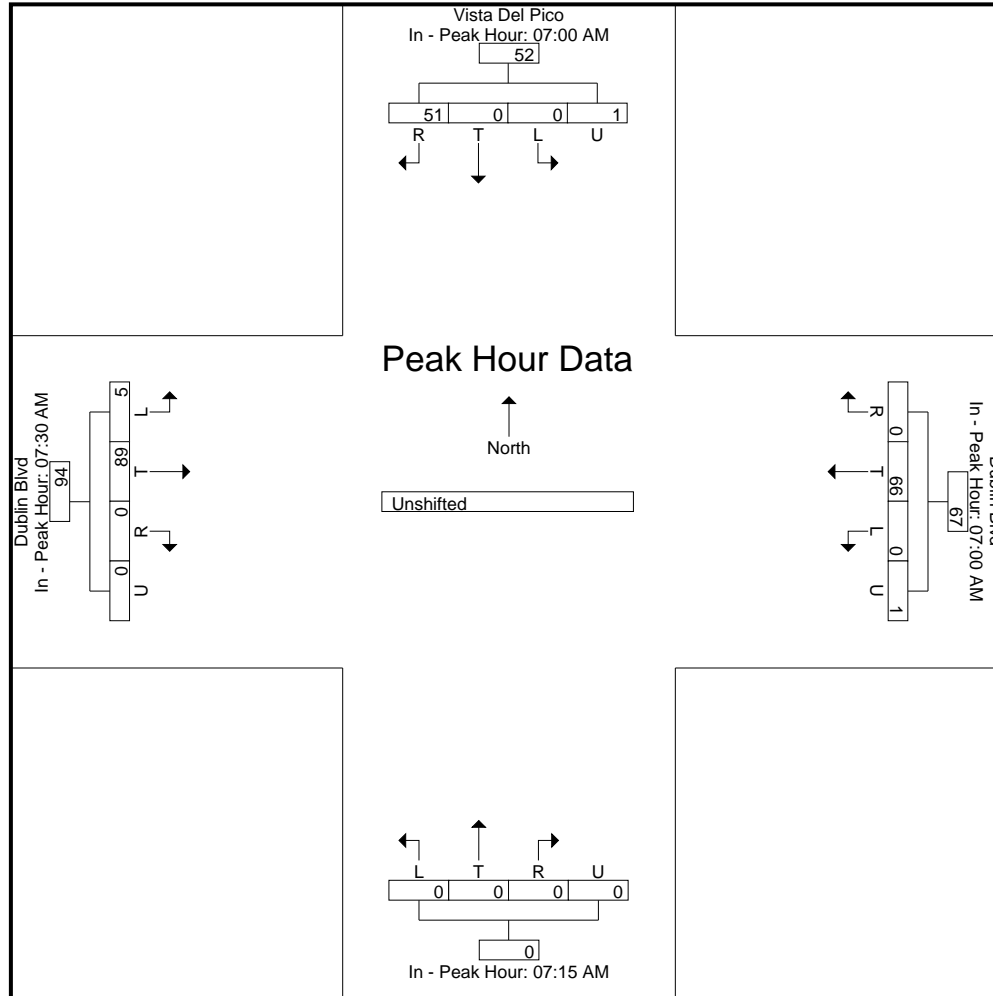
File Name : Vista Del Pico - Dublin Blvd AM
 Site Code : 00204160
 Start Date : 6/16/2020
 Page No : 4

Start Time	Vista Del Pico Southbound					Dublin Blvd Westbound					Northbound					Dublin Blvd Eastbound					Int. Total
	L	T	R	U	App. Total	L	T	R	U	App. Total	L	T	R	U	App. Total	L	T	R	U	App. Total	
Peak Hour Analysis From 6:30:00 AM to 8:15:00 AM - Peak 1 of 1																					
Peak Hour for Each Approach Begins at:																					
	7:00:00 AM					7:00:00 AM					7:15:00 AM					7:30:00 AM					
+0 mins.	0	0	47	0	47	0	68	0	0	68	0	0	0	0	0	8	66	0	0	74	
+5 mins.	0	0	41	0	41	0	83	0	0	83	0	0	0	0	0	13	56	0	1	70	
+10 mins.	0	0	57	1	58	0	60	0	0	60	0	0	0	0	0	6	55	0	0	61	
+15 mins.	0	0	45	0	45	0	52	0	0	52	1	0	0	0	1	17	57	0	0	74	
Total Volume	0	0	190	1	191	0	263	0	0	263	1	0	0	0	1	44	234	0	1	279	
% App. Total	0	0	99.5	0.5		0	100	0	0		100	0	0	0		15.8	83.9	0	0.4		
PHF	.000	.000	.833	.250	.823	.000	.792	.000	.000	.792	.250	.000	.000	.000	.250	.647	.886	.000	.250	.943	

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File Name : Vista Del Pico - Dublin Blvd AM
 Site Code : 00204160
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LSC Transportation Consultants, Inc.

545 E Pikes Peak Ave, Suite 210
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 719-633-2868

File Name : Vista Del Pico - Dublin Blvd PM
 Site Code : 00204160
 Start Date : 6/16/2020
 Page No : 1

Groups Printed- Unshifted

Start Time	Vista Del Pico Southbound					Dublin Blvd Westbound					Northbound					Dublin Blvd Eastbound					Int. Total
	L	T	R	U	App. Total	L	T	R	U	App. Total	L	T	R	U	App. Total	L	T	R	U	App. Total	
04:00 PM	5	0	33	0	38	0	74	1	1	76	0	0	0	0	0	45	66	0	0	111	225
04:15 PM	1	0	27	0	28	0	56	2	0	58	0	0	0	0	0	42	61	0	1	104	190
04:30 PM	0	0	48	0	48	0	61	2	0	63	0	0	0	0	0	36	96	0	3	135	246
04:45 PM	2	0	32	0	34	0	58	3	0	61	0	0	0	0	0	31	64	0	0	95	190
Total	8	0	140	0	148	0	249	8	1	258	0	0	0	0	0	154	287	0	4	445	851
05:00 PM	0	0	43	0	43	0	73	1	0	74	0	0	0	0	0	49	68	0	0	117	234
05:15 PM	2	0	31	0	33	0	57	0	0	57	0	0	0	0	0	56	80	0	1	137	227
05:30 PM	0	0	30	0	30	0	68	0	0	68	0	0	0	0	0	56	85	0	1	142	240
05:45 PM	1	0	38	0	39	0	48	0	0	48	0	0	0	0	0	57	69	0	0	126	213
Total	3	0	142	0	145	0	246	1	0	247	0	0	0	0	0	218	302	0	2	522	914
Grand Total	11	0	282	0	293	0	495	9	1	505	0	0	0	0	0	372	589	0	6	967	1765
Apprch %	3.8	0	96.2	0		0	98	1.8	0.2		0	0	0	0		38.5	60.9	0	0.6		
Total %	0.6	0	16	0	16.6	0	28	0.5	0.1	28.6	0	0	0	0	0	21.1	33.4	0	0.3	54.8	

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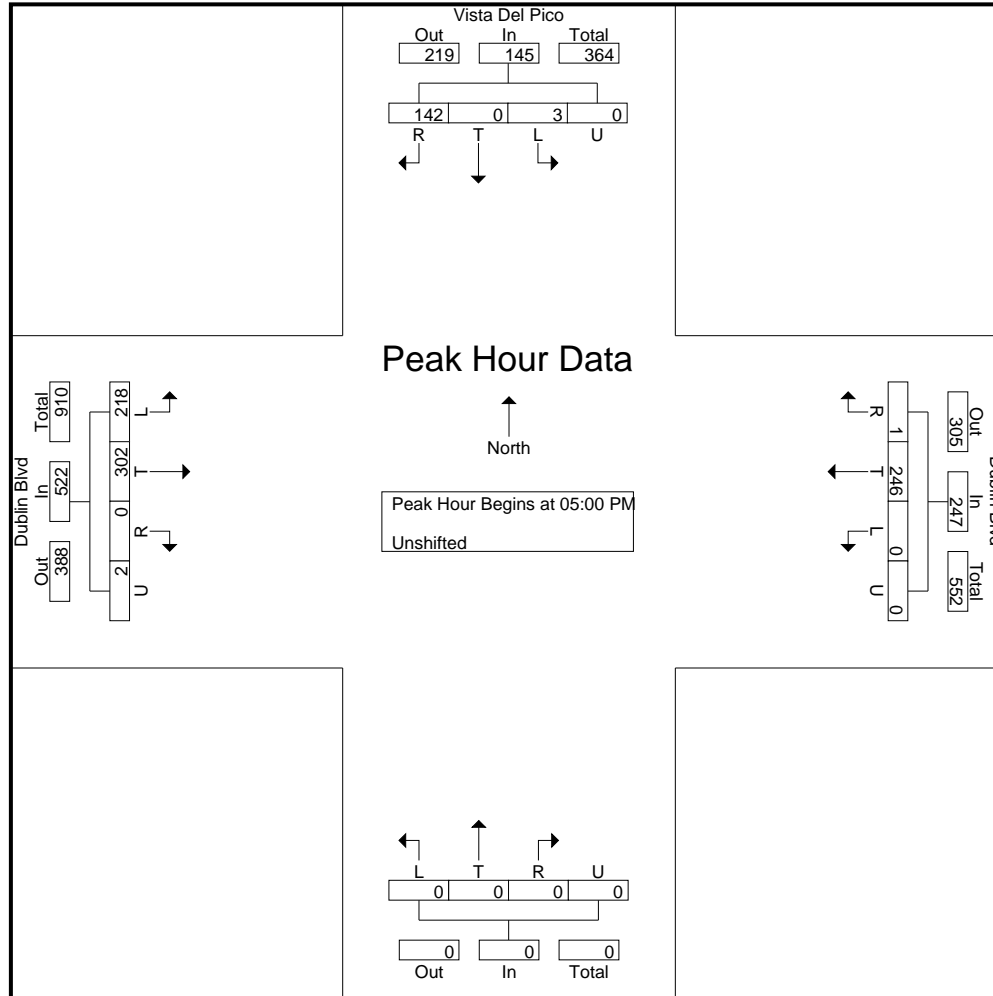
File Name : Vista Del Pico - Dublin Blvd PM
 Site Code : 00204160
 Start Date : 6/16/2020
 Page No : 2

Start Time	Vista Del Pico Southbound					Dublin Blvd Westbound					Northbound					Dublin Blvd Eastbound					Int. Total
	L	T	R	U	App. Total	L	T	R	U	App. Total	L	T	R	U	App. Total	L	T	R	U	App. Total	
Peak Hour Analysis From 4:00:00 PM to 5:45:00 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 5:00:00 PM																					
5:00:00 PM	0	0	43	0	43	0	73	1	0	74	0	0	0	0	0	49	68	0	0	117	234
5:15:00 PM	2	0	31	0	33	0	57	0	0	57	0	0	0	0	0	56	80	0	1	137	227
5:30:00 PM	0	0	30	0	30	0	68	0	0	68	0	0	0	0	0	56	85	0	1	142	240
5:45:00 PM	1	0	38	0	39	0	48	0	0	48	0	0	0	0	0	57	69	0	0	126	213
Total Volume	3	0	142	0	145	0	246	1	0	247	0	0	0	0	0	218	302	0	2	522	914
% App. Total	2.1	0	97.9	0		0	99.6	0.4	0		0	0	0	0		41.8	57.9	0	0.4		
PHF	.375	.000	.826	.000	.843	.000	.842	.250	.000	.834	.000	.000	.000	.000	.000	.956	.888	.000	.500	.919	.952

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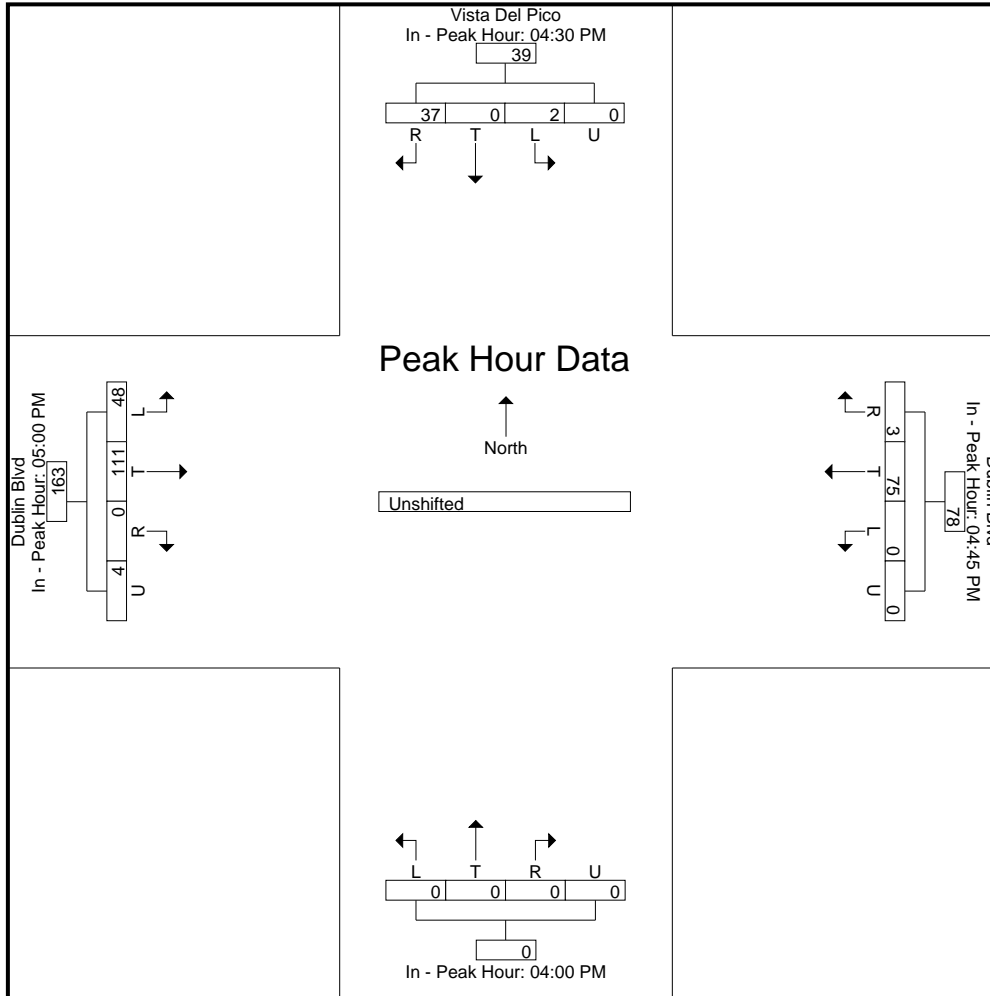
File Name : Vista Del Pico - Dublin Blvd PM
 Site Code : 00204160
 Start Date : 6/16/2020
 Page No : 4

Start Time	Vista Del Pico Southbound					Dublin Blvd Westbound					Northbound					Dublin Blvd Eastbound					Int. Total
	L	T	R	U	App. Total	L	T	R	U	App. Total	L	T	R	U	App. Total	L	T	R	U	App. Total	
Peak Hour Analysis From 4:00:00 PM to 5:45:00 PM - Peak 1 of 1																					
Peak Hour for Each Approach Begins at:																					
	4:30:00 PM					4:45:00 PM					4:00:00 PM					5:00:00 PM					
+0 mins.	0	0	48	0	48	0	58	3	0	61	0	0	0	0	0	49	68	0	0	117	
+5 mins.	2	0	32	0	34	0	73	1	0	74	0	0	0	0	0	56	80	0	1	137	
+10 mins.	0	0	43	0	43	0	57	0	0	57	0	0	0	0	0	56	85	0	1	142	
+15 mins.	2	0	31	0	33	0	68	0	0	68	0	0	0	0	0	57	69	0	0	126	
Total Volume	4	0	154	0	158	0	256	4	0	260	0	0	0	0	0	218	302	0	2	522	
% App. Total	2.5	0	97.5	0		0	98.5	1.5	0		0	0	0	0		41.8	57.9	0	0.4		
PHF	.500	.000	.802	.000	.823	.000	.877	.333	.000	.878	.000	.000	.000	.000	.000	.956	.888	.000	.500	.919	

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File Name : Vista Del Pico - Dublin Blvd PM
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Levels of Service



Lanes, Volumes, Timings
1: Marksheffel & Dublin

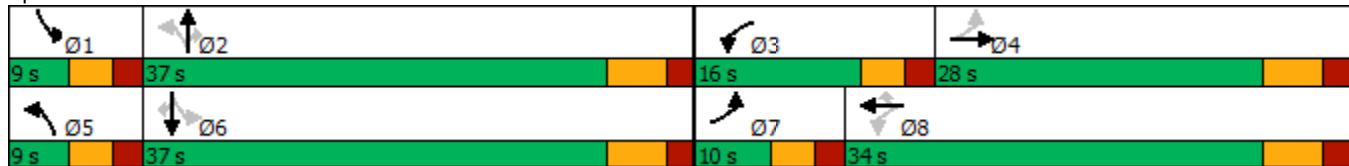
Existing
AM Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	130	194	125	347	425	76	89	348	253	49	627	153
Future Volume (vph)	130	194	125	347	425	76	89	348	253	49	627	153
Satd. Flow (prot)	1770	1753	0	1770	1863	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.275			0.168			0.128			0.382		
Satd. Flow (perm)	512	1753	0	313	1863	1583	238	1863	1583	712	1863	1583
Satd. Flow (RTOR)		34				158			275			218
Peak Hour Factor	0.83	0.83	0.83	0.92	0.92	0.92	0.92	0.92	0.92	0.89	0.89	0.89
Shared Lane Traffic (%)												
Lane Group Flow (vph)	157	385	0	377	462	83	97	378	275	55	704	172
Turn Type	pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8		8	2		2	6		6
Total Split (s)	10.0	28.0		16.0	34.0	34.0	9.0	37.0	37.0	9.0	37.0	37.0
Total Lost Time (s)	5.0	6.0		5.0	6.0	6.0	5.0	6.0	6.0	5.0	6.0	6.0
Act Effect Green (s)	26.4	20.3		37.4	26.4	26.4	35.3	31.2	31.2	35.3	31.2	31.2
Actuated g/C Ratio	0.30	0.23		0.43	0.30	0.30	0.41	0.36	0.36	0.41	0.36	0.36
v/c Ratio	0.69	0.88		1.17	0.82	0.14	0.58	0.56	0.37	0.16	1.05	0.24
Control Delay	36.4	52.3		129.5	41.5	0.5	30.6	27.4	4.3	15.2	79.2	2.2
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	36.4	52.3		129.5	41.5	0.5	30.6	27.4	4.3	15.2	79.2	2.2
LOS	D	D		F	D	A	C	C	A	B	E	A
Approach Delay		47.7			73.8			19.4			61.2	
Approach LOS		D			E			B			E	

Intersection Summary

Cycle Length: 90	
Actuated Cycle Length: 86.6	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.17	
Intersection Signal Delay: 52.6	Intersection LOS: D
Intersection Capacity Utilization 93.3%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 1: Marksheffel & Dublin



Intersection						
Int Delay, s/veh	3.8					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↘	↑↑↑	↑↑↑	↗	↘	↗
Traffic Vol, veh/h	41	225	263	0	0	190
Future Vol, veh/h	41	225	263	0	0	190
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	240	-	-	245	245	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	90	90	79	79	82	82
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	46	250	333	0	0	232

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	333	0	-	0	525 167
Stage 1	-	-	-	-	333 -
Stage 2	-	-	-	-	192 -
Critical Hdwy	5.34	-	-	-	5.74 7.14
Critical Hdwy Stg 1	-	-	-	-	6.64 -
Critical Hdwy Stg 2	-	-	-	-	6.04 -
Follow-up Hdwy	3.12	-	-	-	3.82 3.92
Pot Cap-1 Maneuver	811	-	-	-	532 721
Stage 1	-	-	-	-	605 -
Stage 2	-	-	-	-	755 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	811	-	-	-	502 721
Mov Cap-2 Maneuver	-	-	-	-	502 -
Stage 1	-	-	-	-	571 -
Stage 2	-	-	-	-	755 -

Approach	EB	WB	SB
HCM Control Delay, s	1.5	0	12.3
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	811	-	-	-	-	721
HCM Lane V/C Ratio	0.056	-	-	-	-	0.321
HCM Control Delay (s)	9.7	-	-	-	0	12.3
HCM Lane LOS	A	-	-	-	A	B
HCM 95th %tile Q(veh)	0.2	-	-	-	-	1.4

Lanes, Volumes, Timings
6: Marksheffel & Woodmen

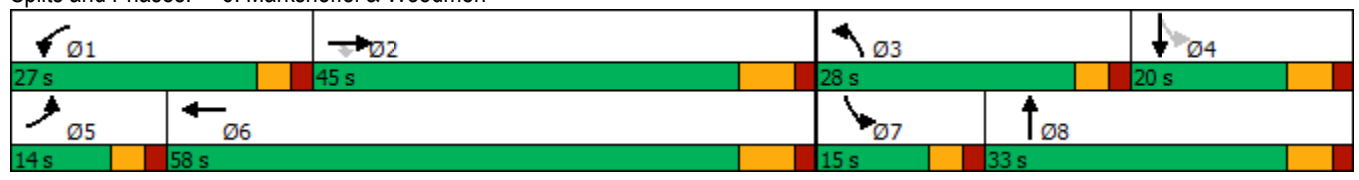
Existing
AM Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	33	453	267	208	978	7	310	48	135	9	34	77
Future Volume (vph)	33	453	267	208	978	7	310	48	135	9	34	77
Satd. Flow (prot)	3433	3539	1583	3433	3539	1583	3433	3539	1583	1770	3539	1583
Flt Permitted	0.950			0.950			0.950			0.851		
Satd. Flow (perm)	3433	3539	1583	3433	3539	1583	3433	3539	1583	1585	3539	1583
Satd. Flow (RTOR)			297			273			273			273
Peak Hour Factor	0.90	0.90	0.90	0.92	0.92	0.92	0.78	0.78	0.78	0.71	0.71	0.71
Shared Lane Traffic (%)												
Lane Group Flow (vph)	37	503	297	226	1063	8	397	62	173	13	48	108
Turn Type	Prot	NA	Perm	Prot	NA	Free	Prot	NA	Free	pm+pt	NA	Free
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			Free			Free	4		Free
Total Split (s)	14.0	45.0	45.0	27.0	58.0		28.0	33.0		15.0	20.0	
Total Lost Time (s)	5.0	7.0	7.0	5.0	7.0		5.0	6.0		5.0	6.0	
Act Effect Green (s)	7.1	23.9	23.9	11.8	35.5	77.3	15.8	19.5	77.3	10.8	7.3	77.3
Actuated g/C Ratio	0.09	0.31	0.31	0.15	0.46	1.00	0.20	0.25	1.00	0.14	0.09	1.00
v/c Ratio	0.12	0.46	0.43	0.43	0.65	0.01	0.57	0.07	0.11	0.05	0.14	0.07
Control Delay	43.1	23.6	5.0	37.8	21.5	0.0	34.8	26.4	0.1	24.8	42.5	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	43.1	23.6	5.0	37.8	21.5	0.0	34.8	26.4	0.1	24.8	42.5	0.1
LOS	D	C	A	D	C	A	C	C	A	C	D	A
Approach Delay		17.9			24.2			24.5			14.0	
Approach LOS		B			C			C			B	

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 77.3
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.65
 Intersection Signal Delay: 21.9
 Intersection LOS: C
 Intersection Capacity Utilization 60.9%
 ICU Level of Service B
 Analysis Period (min) 15

Splits and Phases: 6: Marksheffel & Woodmen



Intersection						
Int Delay, s/veh	3.9					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	51	166	397	29	89	0
Future Vol, veh/h	51	166	397	29	89	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	-	325	-	-
Veh in Median Storage, #	0	-	0	-	-	16979
Grade, %	0	-	0	-	-	0
Peak Hour Factor	86	86	89	89	91	91
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	59	193	446	33	98	0

Major/Minor	Minor1	Major1	
Conflicting Flow All	446	223	0
Stage 1	446	-	-
Stage 2	0	-	-
Critical Hdwy	6.84	6.94	-
Critical Hdwy Stg 1	5.84	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	3.52	3.32	-
Pot Cap-1 Maneuver	541	780	-
Stage 1	612	-	-
Stage 2	-	-	-
Platoon blocked, %			-
Mov Cap-1 Maneuver	541	780	-
Mov Cap-2 Maneuver	541	-	-
Stage 1	612	-	-
Stage 2	-	-	-

Approach	WB	NB
HCM Control Delay, s	11.4	0
HCM LOS	B	

Minor Lane/Major Mvmt	NBT	NBRWBLn1WBLn2	
Capacity (veh/h)	-	-	541 780
HCM Lane V/C Ratio	-	-	0.11 0.247
HCM Control Delay (s)	-	-	12.5 11.1
HCM Lane LOS	-	-	B B
HCM 95th %tile Q(veh)	-	-	0.4 1

Lanes, Volumes, Timings
1: Marksheffel & Dublin

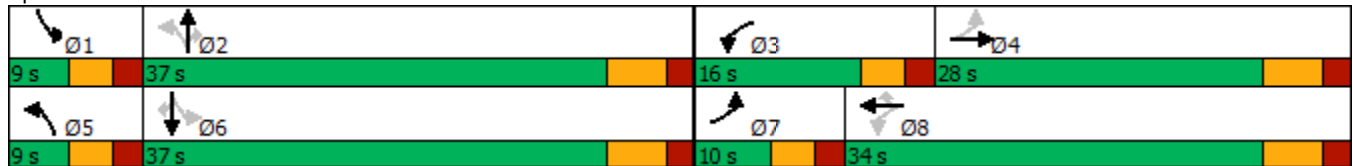
Existing
PM Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	208	238	94	209	165	35	178	630	369	36	484	130
Future Volume (vph)	208	238	94	209	165	35	178	630	369	36	484	130
Satd. Flow (prot)	1770	1785	0	1770	1863	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.636			0.184			0.212			0.121		
Satd. Flow (perm)	1185	1785	0	343	1863	1583	395	1863	1583	225	1863	1583
Satd. Flow (RTOR)		21				158			393			218
Peak Hour Factor	0.92	0.92	0.92	0.85	0.85	0.85	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	226	361	0	246	194	41	193	685	401	39	526	141
Turn Type	pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8		8	2		2	6		6
Total Split (s)	10.0	28.0		16.0	34.0	34.0	9.0	37.0	37.0	9.0	37.0	37.0
Total Lost Time (s)	5.0	6.0		5.0	6.0	6.0	5.0	6.0	6.0	5.0	6.0	6.0
Act Effect Green (s)	25.9	19.9		36.5	25.6	25.6	38.1	34.8	34.8	36.1	31.1	31.1
Actuated g/C Ratio	0.30	0.23		0.42	0.29	0.29	0.43	0.40	0.40	0.41	0.35	0.35
v/c Ratio	0.59	0.86		0.78	0.36	0.07	0.82	0.93	0.46	0.24	0.80	0.20
Control Delay	28.1	51.2		36.0	26.4	0.2	49.6	48.8	4.6	17.4	37.0	1.2
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	28.1	51.2		36.0	26.4	0.2	49.6	48.8	4.6	17.4	37.0	1.2
LOS	C	D		D	C	A	D	D	A	B	D	A
Approach Delay		42.3			29.1			35.1			28.8	
Approach LOS		D			C			D			C	

Intersection Summary

Cycle Length: 90	
Actuated Cycle Length: 87.7	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.93	
Intersection Signal Delay: 34.1	Intersection LOS: C
Intersection Capacity Utilization 84.7%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 1: Marksheffel & Dublin



Intersection						
Int Delay, s/veh	4.4					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↘	↑↑↑	↑↑↑	↗	↘	↗
Traffic Vol, veh/h	218	302	246	1	3	142
Future Vol, veh/h	218	302	246	1	3	142
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	240	-	-	245	245	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	83	83	84	84
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	237	328	296	1	4	169

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	297	0	-	0	901
Stage 1	-	-	-	-	296
Stage 2	-	-	-	-	605
Critical Hdwy	5.34	-	-	-	5.74
Critical Hdwy Stg 1	-	-	-	-	6.64
Critical Hdwy Stg 2	-	-	-	-	6.04
Follow-up Hdwy	3.12	-	-	-	3.82
Pot Cap-1 Maneuver	842	-	-	-	348
Stage 1	-	-	-	-	636
Stage 2	-	-	-	-	463
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	842	-	-	-	250
Mov Cap-2 Maneuver	-	-	-	-	250
Stage 1	-	-	-	-	457
Stage 2	-	-	-	-	463

Approach	EB	WB	SB
HCM Control Delay, s	4.6	0	11.5
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	842	-	-	-	250	741
HCM Lane V/C Ratio	0.281	-	-	-	0.014	0.228
HCM Control Delay (s)	10.9	-	-	-	19.6	11.3
HCM Lane LOS	B	-	-	-	C	B
HCM 95th %tile Q(veh)	1.2	-	-	-	0	0.9

Lanes, Volumes, Timings
6: Marksheffel & Woodmen

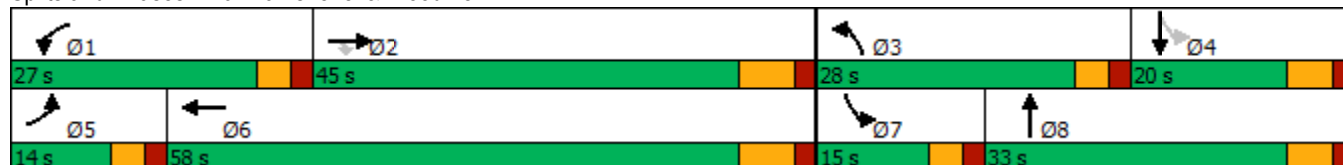
Existing
PM Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	60	1116	410	252	779	10	359	82	396	13	35	71
Future Volume (vph)	60	1116	410	252	779	10	359	82	396	13	35	71
Satd. Flow (prot)	3433	3539	1583	3433	3539	1583	3433	3539	1583	1770	3539	1583
Flt Permitted	0.950			0.950			0.950			0.889		
Satd. Flow (perm)	3433	3539	1583	3433	3539	1583	3433	3539	1583	1656	3539	1583
Satd. Flow (RTOR)			446			273			430			273
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.83	0.83	0.83
Shared Lane Traffic (%)												
Lane Group Flow (vph)	65	1213	446	274	847	11	390	89	430	16	42	86
Turn Type	Prot	NA	Perm	Prot	NA	Free	Prot	NA	Free	pm+pt	NA	Free
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			Free			Free	4		Free
Total Split (s)	14.0	45.0	45.0	27.0	58.0		28.0	33.0		15.0	20.0	
Total Lost Time (s)	5.0	7.0	7.0	5.0	7.0		5.0	6.0		5.0	6.0	
Act Effect Green (s)	7.2	38.8	38.8	12.9	47.1	92.1	15.8	17.8	92.1	10.8	6.7	92.1
Actuated g/C Ratio	0.08	0.42	0.42	0.14	0.51	1.00	0.17	0.19	1.00	0.12	0.07	1.00
v/c Ratio	0.24	0.81	0.48	0.57	0.47	0.01	0.66	0.13	0.27	0.08	0.16	0.05
Control Delay	45.9	31.6	4.3	43.5	18.5	0.0	42.5	32.6	0.4	27.2	45.9	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	45.9	31.6	4.3	43.5	18.5	0.0	42.5	32.6	0.4	27.2	45.9	0.1
LOS	D	C	A	D	B	A	D	C	A	C	D	A
Approach Delay		25.1			24.4			21.6			16.4	
Approach LOS		C			C			C			B	

Intersection Summary

Cycle Length: 120	
Actuated Cycle Length: 92.1	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.81	
Intersection Signal Delay: 23.8	Intersection LOS: C
Intersection Capacity Utilization 69.9%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 6: Marksheffel & Woodmen



Intersection						
Int Delay, s/veh	2.8					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↘	↗	↕	↗	↘	
Traffic Vol, veh/h	40	149	699	71	223	507
Future Vol, veh/h	40	149	699	71	223	507
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	-	325	-	-
Veh in Median Storage, #	0	-	0	-	-	16979
Grade, %	0	-	0	-	-	0
Peak Hour Factor	89	89	92	92	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	45	167	760	77	248	563

Major/Minor	Minor1	Major1		
Conflicting Flow All	760	380	0	0
Stage 1	760	-	-	-
Stage 2	0	-	-	-
Critical Hdwy	6.84	6.94	-	-
Critical Hdwy Stg 1	5.84	-	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-
Pot Cap-1 Maneuver	342	618	-	-
Stage 1	422	-	-	-
Stage 2	-	-	-	-
Platoon blocked, %			-	-
Mov Cap-1 Maneuver	342	618	-	-
Mov Cap-2 Maneuver	342	-	-	-
Stage 1	422	-	-	-
Stage 2	-	-	-	-

Approach	WB	NB
HCM Control Delay, s	13.9	0
HCM LOS	B	

Minor Lane/Major Mvmt	NBT	NBRWBLn1	WBLn2
Capacity (veh/h)	-	-	342 618
HCM Lane V/C Ratio	-	-	0.131 0.271
HCM Control Delay (s)	-	-	17.1 13
HCM Lane LOS	-	-	C B
HCM 95th %tile Q(veh)	-	-	0.4 1.1

Lanes, Volumes, Timings
1: Marksheffel & Dublin

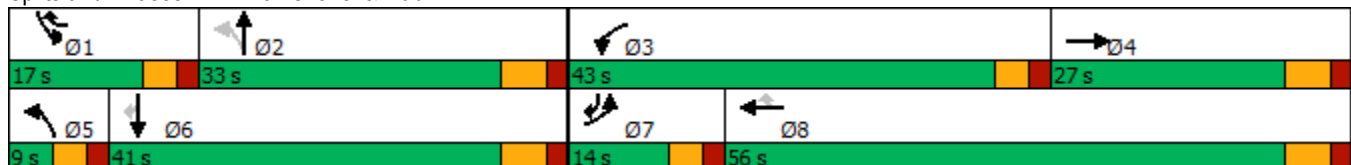
Scenario 1 Background
AM Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	140	265	140	950	430	375	100	490	585	210	845	165
Future Volume (vph)	140	265	140	950	430	375	100	490	585	210	845	165
Satd. Flow (prot)	3433	3355	0	3433	1863	1583	1770	3539	1583	3433	3539	1583
Flt Permitted	0.950			0.950			0.139			0.950		
Satd. Flow (perm)	3433	3355	0	3433	1863	1583	259	3539	1583	3433	3539	1583
Satd. Flow (RTOR)		71				73			636			183
Peak Hour Factor	0.86	0.86	0.86	0.92	0.92	0.92	0.92	0.92	0.92	0.90	0.90	0.90
Shared Lane Traffic (%)												
Lane Group Flow (vph)	163	471	0	1033	467	408	109	533	636	233	939	183
Turn Type	Prot	NA		Prot	NA	pm+ov	pm+pt	NA	Free	Prot	NA	pm+ov
Protected Phases	7	4		3	8	1	5	2		1	6	7
Permitted Phases						8	2		Free			6
Total Split (s)	14.0	27.0		43.0	56.0	17.0	9.0	33.0		17.0	41.0	14.0
Total Lost Time (s)	4.0	4.0		4.0	4.0	3.0	4.0	4.0		4.0	4.0	3.0
Act Effect Green (s)	9.7	20.3		37.9	48.5	65.9	34.7	29.7	116.3	12.4	37.1	51.8
Actuated g/C Ratio	0.08	0.17		0.33	0.42	0.57	0.30	0.26	1.00	0.11	0.32	0.45
v/c Ratio	0.57	0.73		0.92	0.60	0.44	0.77	0.59	0.40	0.64	0.83	0.23
Control Delay	60.3	45.7		52.4	30.2	13.1	61.9	42.0	0.8	59.0	45.0	3.7
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	60.3	45.7		52.4	30.2	13.1	61.9	42.0	0.8	59.0	45.0	3.7
LOS	E	D		D	C	B	E	D	A	E	D	A
Approach Delay		49.5			38.6			23.2			41.8	
Approach LOS		D			D			C			D	

Intersection Summary

Cycle Length: 120	
Actuated Cycle Length: 116.3	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.92	
Intersection Signal Delay: 37.0	Intersection LOS: D
Intersection Capacity Utilization 81.1%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 1: Marksheffel & Dublin



Lanes, Volumes, Timings
6: Marksheffel & Woodmen

Scenario 1 Background
AM Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	50	850	575	590	1800	100	680	175	425	125	205	150
Future Volume (vph)	50	850	575	590	1800	100	680	175	425	125	205	150
Satd. Flow (prot)	3433	3539	1583	3433	3539	1583	3433	3539	1583	1770	3539	1583
Flt Permitted	0.950			0.950			0.950			0.626		
Satd. Flow (perm)	3433	3539	1583	3433	3539	1583	3433	3539	1583	1166	3539	1583
Satd. Flow (RTOR)			457			273			489			273
Peak Hour Factor	0.91	0.91	0.91	0.92	0.92	0.92	0.87	0.87	0.87	0.87	0.87	0.87
Shared Lane Traffic (%)												
Lane Group Flow (vph)	55	934	632	641	1957	109	782	201	489	144	236	172
Turn Type	Prot	NA	Perm	Prot	NA	Free	Prot	NA	Free	pm+pt	NA	Free
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			Free			Free	4		Free
Total Split (s)	9.0	42.0	42.0	33.0	66.0		31.0	27.0		18.0	14.0	
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
Act Effect Green (s)	5.0	38.6	38.6	26.6	62.1	118.2	27.0	24.7	118.2	22.3	10.0	118.2
Actuated g/C Ratio	0.04	0.33	0.33	0.23	0.53	1.00	0.23	0.21	1.00	0.19	0.08	1.00
v/c Ratio	0.38	0.81	0.77	0.83	1.05	0.07	1.00	0.27	0.31	0.51	0.79	0.11
Control Delay	63.7	43.4	16.9	53.9	65.2	0.1	77.4	41.5	0.5	36.4	72.7	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	63.7	43.4	16.9	53.9	65.2	0.1	77.4	41.5	0.5	36.4	72.7	0.1
LOS	E	D	B	D	E	A	E	D	A	D	E	A
Approach Delay		33.8			59.9			47.0			40.6	
Approach LOS		C			E			D			D	

Intersection Summary

Cycle Length: 120	
Actuated Cycle Length: 118.2	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.05	
Intersection Signal Delay: 48.6	Intersection LOS: D
Intersection Capacity Utilization 91.5%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 6: Marksheffel & Woodmen



Lanes, Volumes, Timings
1: Marksheffel & Dublin

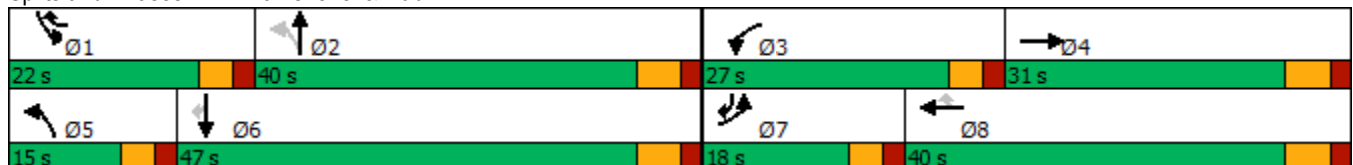
Scenario 1 Background
PM Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	210	377	105	629	288	231	195	885	947	473	790	140
Future Volume (vph)	210	377	105	629	288	231	195	885	947	473	790	140
Satd. Flow (prot)	3433	3422	0	3433	1863	1583	1770	3539	1583	3433	3539	1583
Flt Permitted	0.950			0.950			0.210			0.950		
Satd. Flow (perm)	3433	3422	0	3433	1863	1583	391	3539	1583	3433	3539	1583
Satd. Flow (RTOR)		27				73			656			152
Peak Hour Factor	0.92	0.92	0.92	0.90	0.90	0.90	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	228	524	0	699	320	257	212	962	1029	514	859	152
Turn Type	Prot	NA		Prot	NA	pm+ov	pm+pt	NA	Free	Prot	NA	pm+ov
Protected Phases	7	4		3	8	1	5	2		1	6	7
Permitted Phases						8	2		Free			6
Total Split (s)	18.0	31.0		27.0	40.0	22.0	15.0	40.0		22.0	47.0	18.0
Total Lost Time (s)	5.0	6.0		5.0	6.0	5.0	5.0	6.0		5.0	6.0	5.0
Act Effect Green (s)	11.9	21.5		22.0	31.6	54.6	45.0	34.0	116.6	17.0	41.0	59.0
Actuated g/C Ratio	0.10	0.18		0.19	0.27	0.47	0.39	0.29	1.00	0.15	0.35	0.51
v/c Ratio	0.65	0.80		1.08	0.63	0.33	0.79	0.93	0.65	1.03	0.69	0.17
Control Delay	59.9	53.2		103.5	44.0	15.0	42.6	56.7	2.1	96.6	36.3	3.0
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	59.9	53.2		103.5	44.0	15.0	42.6	56.7	2.1	96.6	36.3	3.0
LOS	E	D		F	D	B	D	E	A	F	D	A
Approach Delay		55.2			70.7			29.8			53.3	
Approach LOS		E			E			C			D	

Intersection Summary

Cycle Length: 120	
Actuated Cycle Length: 116.6	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.08	
Intersection Signal Delay: 48.4	Intersection LOS: D
Intersection Capacity Utilization 88.0%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 1: Marksheffel & Dublin



Lanes, Volumes, Timings
6: Marksheffel & Woodmen

Scenario 1 Background
PM Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	200	1475	855	575	1035	200	595	270	530	200	250	125
Future Volume (vph)	200	1475	855	575	1035	200	595	270	530	200	250	125
Satd. Flow (prot)	3433	3539	1583	3433	3539	1583	3433	3539	1583	1770	3539	1583
Flt Permitted	0.950			0.950			0.950			0.573		
Satd. Flow (perm)	3433	3539	1583	3433	3539	1583	3433	3539	1583	1067	3539	1583
Satd. Flow (RTOR)			445			273			273			273
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.90	0.90	0.90
Shared Lane Traffic (%)												
Lane Group Flow (vph)	217	1603	929	625	1125	217	647	293	576	222	278	139
Turn Type	Prot	NA	Perm	Prot	NA	Free	Prot	NA	Free	pm+pt	NA	Free
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			Free			Free	4		Free
Total Split (s)	18.0	57.0	57.0	24.0	63.0		25.0	21.0		18.0	14.0	
Total Lost Time (s)	5.0	7.0	7.0	5.0	7.0		5.0	6.0		5.0	6.0	
Act Effect Green (s)	11.9	50.0	50.0	19.0	57.1	120.0	20.0	15.1	120.0	21.9	8.0	120.0
Actuated g/C Ratio	0.10	0.42	0.42	0.16	0.48	1.00	0.17	0.13	1.00	0.18	0.07	1.00
v/c Ratio	0.64	1.09	1.01	1.15	0.67	0.14	1.13	0.66	0.36	0.82	1.18	0.09
Control Delay	60.7	85.2	51.4	132.5	26.8	0.2	124.5	57.9	0.6	61.9	165.0	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	60.7	85.2	51.4	132.5	26.8	0.2	124.5	57.9	0.6	61.9	165.0	0.1
LOS	E	F	D	F	C	A	F	E	A	E	F	A
Approach Delay		71.8			57.5			64.6			93.3	
Approach LOS		E			E			E			F	

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 120
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 1.18
 Intersection Signal Delay: 68.1
 Intersection LOS: E
 Intersection Capacity Utilization 100.2%
 ICU Level of Service G
 Analysis Period (min) 15

Splits and Phases: 6: Marksheffel & Woodmen



Lanes, Volumes, Timings
1: Marksheffel & Dublin

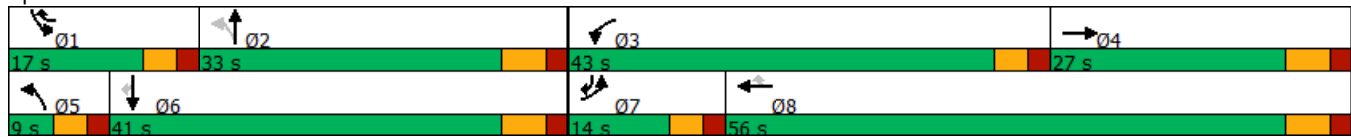
Scenario 1 Total
AM Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	140	272	140	1059	450	447	100	490	633	235	845	165
Future Volume (vph)	140	272	140	1059	450	447	100	490	633	235	845	165
Satd. Flow (prot)	3433	3359	0	3433	1863	1583	1770	3539	1583	3433	3539	1583
Flt Permitted	0.950			0.950			0.141			0.950		
Satd. Flow (perm)	3433	3359	0	3433	1863	1583	263	3539	1583	3433	3539	1583
Satd. Flow (RTOR)		68				73			688			183
Peak Hour Factor	0.86	0.86	0.86	0.92	0.92	0.92	0.92	0.92	0.92	0.90	0.90	0.90
Shared Lane Traffic (%)												
Lane Group Flow (vph)	163	479	0	1151	489	486	109	533	688	261	939	183
Turn Type	Prot	NA		Prot	NA	pm+ov	pm+pt	NA	Free	Prot	NA	pm+ov
Protected Phases	7	4		3	8	1	5	2		1	6	7
Permitted Phases						8	2		Free			6
Total Split (s)	14.0	27.0		43.0	56.0	17.0	9.0	33.0		17.0	41.0	14.0
Total Lost Time (s)	4.0	4.0		4.0	4.0	3.0	4.0	4.0		4.0	4.0	3.0
Act Effct Green (s)	9.8	20.6		39.0	49.9	67.5	34.4	29.4	117.7	12.6	37.0	51.8
Actuated g/C Ratio	0.08	0.18		0.33	0.42	0.57	0.29	0.25	1.00	0.11	0.31	0.44
v/c Ratio	0.57	0.74		1.01	0.62	0.52	0.77	0.60	0.43	0.71	0.84	0.23
Control Delay	60.9	47.0		69.1	30.6	14.8	63.2	42.9	0.9	62.4	46.2	3.7
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	60.9	47.0		69.1	30.6	14.8	63.2	42.9	0.9	62.4	46.2	3.7
LOS	E	D		E	C	B	E	D	A	E	D	A
Approach Delay		50.5			47.9			22.8			43.7	
Approach LOS		D			D			C			D	

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 117.7
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 1.01
 Intersection Signal Delay: 41.0
 Intersection Capacity Utilization 84.4%
 Analysis Period (min) 15
 Intersection LOS: D
 ICU Level of Service E

Splits and Phases: 1: Marksheffel & Dublin



Lanes, Volumes, Timings
6: Marksheffel & Woodmen

Scenario 1 Total
AM Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	50	815	597	594	1750	100	742	175	435	125	205	205
Future Volume (vph)	50	815	597	594	1750	100	742	175	435	125	205	205
Satd. Flow (prot)	3433	3539	1583	3433	3539	1583	3433	3539	1583	1770	3539	1583
Flt Permitted	0.950			0.950			0.950			0.626		
Satd. Flow (perm)	3433	3539	1583	3433	3539	1583	3433	3539	1583	1166	3539	1583
Satd. Flow (RTOR)			457			273			500			273
Peak Hour Factor	0.91	0.91	0.91	0.92	0.92	0.92	0.87	0.87	0.87	0.87	0.87	0.87
Shared Lane Traffic (%)												
Lane Group Flow (vph)	55	896	656	646	1902	109	853	201	500	144	236	236
Turn Type	Prot	NA	Perm	Prot	NA	Free	Prot	NA	Free	pm+pt	NA	Free
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			Free			Free	4		Free
Total Split (s)	9.0	42.0	42.0	33.0	66.0		31.0	27.0		18.0	14.0	
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
Act Effct Green (s)	5.0	38.5	38.5	26.7	62.1	118.2	27.0	24.7	118.2	22.3	10.0	118.2
Actuated g/C Ratio	0.04	0.33	0.33	0.23	0.53	1.00	0.23	0.21	1.00	0.19	0.08	1.00
v/c Ratio	0.38	0.78	0.80	0.83	1.02	0.07	1.09	0.27	0.32	0.51	0.79	0.15
Control Delay	63.7	42.0	19.1	54.1	55.9	0.1	101.7	41.5	0.5	36.4	72.7	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	63.7	42.0	19.1	54.1	55.9	0.1	101.7	41.5	0.5	36.4	72.7	0.2
LOS	E	D	B	D	E	A	F	D	A	D	E	A
Approach Delay		33.4			53.2			61.4			36.5	
Approach LOS		C			D			E			D	

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 118.2
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 1.09
 Intersection Signal Delay: 48.6
 Intersection Capacity Utilization 91.9%
 Analysis Period (min) 15
 Intersection LOS: D
 ICU Level of Service F

Splits and Phases: 6: Marksheffel & Woodmen



Lanes, Volumes, Timings
1: Marksheffel & Dublin

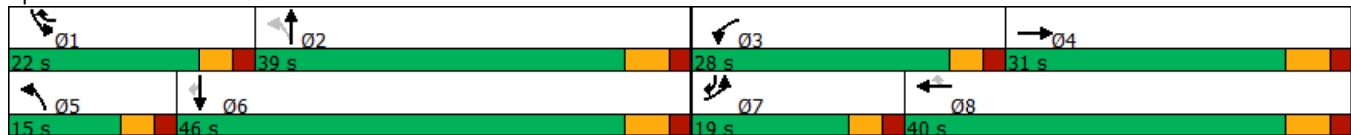
Scenario 1 Total
PM Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	210	377	105	629	288	231	195	885	947	473	790	140
Future Volume (vph)	210	377	105	629	288	231	195	885	947	473	790	140
Satd. Flow (prot)	3433	3422	0	3433	1863	1583	1770	3539	1583	3433	3539	1583
Flt Permitted	0.950			0.950			0.203			0.950		
Satd. Flow (perm)	3433	3422	0	3433	1863	1583	378	3539	1583	3433	3539	1583
Satd. Flow (RTOR)		27				73			656			152
Peak Hour Factor	0.92	0.92	0.92	0.90	0.90	0.90	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	228	524	0	699	320	257	212	962	1029	514	859	152
Turn Type	Prot	NA		Prot	NA	pm+ov	pm+pt	NA	Free	Prot	NA	pm+ov
Protected Phases	7	4		3	8	1	5	2		1	6	7
Permitted Phases						8	2		Free			6
Total Split (s)	19.0	31.0		28.0	40.0	22.0	15.0	39.0		22.0	46.0	19.0
Total Lost Time (s)	5.0	6.0		5.0	6.0	5.0	5.0	6.0		5.0	6.0	5.0
Act Effct Green (s)	12.3	21.5		23.0	32.2	55.2	44.0	33.0	116.6	17.0	40.0	58.4
Actuated g/C Ratio	0.11	0.18		0.20	0.28	0.47	0.38	0.28	1.00	0.15	0.34	0.50
v/c Ratio	0.63	0.80		1.03	0.62	0.33	0.81	0.96	0.65	1.03	0.71	0.18
Control Delay	58.4	53.2		89.4	43.2	14.8	46.0	62.1	2.1	96.6	37.5	3.0
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	58.4	53.2		89.4	43.2	14.8	46.0	62.1	2.1	96.6	37.5	3.0
LOS	E	D		F	D	B	D	E	A	F	D	A
Approach Delay		54.7			62.8			32.5			54.0	
Approach LOS		D			E			C			D	

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 116.6
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 1.03
 Intersection Signal Delay: 47.8
 Intersection Capacity Utilization 88.0%
 Analysis Period (min) 15
 Intersection LOS: D
 ICU Level of Service E

Splits and Phases: 1: Marksheffel & Dublin



Lanes, Volumes, Timings
6: Marksheffel & Woodmen

Scenario 1 Total
PM Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	200	1475	922	586	1035	200	634	270	536	200	225	100
Future Volume (vph)	200	1475	922	586	1035	200	634	270	536	200	225	100
Satd. Flow (prot)	3433	3539	1583	3433	3539	1583	3433	3539	1583	1770	3539	1583
Flt Permitted	0.950			0.950			0.950			0.573		
Satd. Flow (perm)	3433	3539	1583	3433	3539	1583	3433	3539	1583	1067	3539	1583
Satd. Flow (RTOR)			462			273			278			273
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.90	0.90	0.90
Shared Lane Traffic (%)												
Lane Group Flow (vph)	217	1603	1002	637	1125	217	689	293	583	222	250	111
Turn Type	Prot	NA	Perm	Prot	NA	Free	Prot	NA	Free	pm+pt	NA	Free
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			Free			Free	4		Free
Total Split (s)	18.0	56.0	56.0	25.0	63.0		26.0	21.0		18.0	13.0	
Total Lost Time (s)	5.0	7.0	7.0	5.0	7.0		5.0	6.0		5.0	6.0	
Act Effct Green (s)	11.9	49.0	49.0	20.0	57.1	120.0	21.0	15.0	120.0	21.0	7.0	120.0
Actuated g/C Ratio	0.10	0.41	0.41	0.17	0.48	1.00	0.18	0.12	1.00	0.18	0.06	1.00
v/c Ratio	0.64	1.11	1.09	1.11	0.67	0.14	1.15	0.66	0.37	0.85	1.21	0.07
Control Delay	60.7	93.8	77.0	118.7	26.8	0.2	129.3	58.1	0.7	65.7	179.3	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	60.7	93.8	77.0	118.7	26.8	0.2	129.3	58.1	0.7	65.7	179.3	0.1
LOS	E	F	E	F	C	A	F	E	A	E	F	A
Approach Delay		85.3			53.5			68.0			101.9	
Approach LOS		F			D			E			F	

Intersection Summary

Cycle Length: 120	
Actuated Cycle Length: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.21	
Intersection Signal Delay: 73.8	Intersection LOS: E
Intersection Capacity Utilization 101.0%	ICU Level of Service G
Analysis Period (min) 15	

Splits and Phases: 6: Marksheffel & Woodmen



Lanes, Volumes, Timings
1: Marksheffel & Dublin

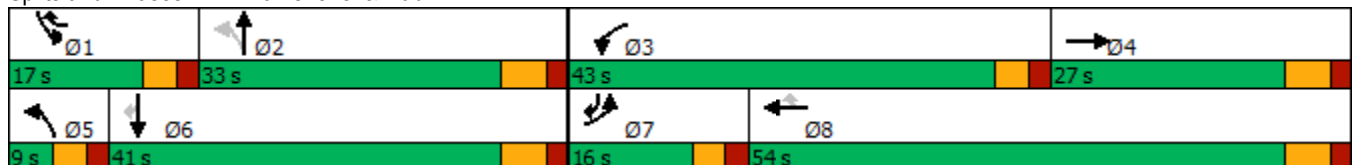
Scenario 2 Background
AM Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	140	265	140	700	430	345	100	490	485	200	845	165
Future Volume (vph)	140	265	140	700	430	345	100	490	485	200	845	165
Satd. Flow (prot)	3433	3355	0	3433	1863	1583	1770	3539	1583	3433	3539	1583
Flt Permitted	0.950			0.950			0.140			0.950		
Satd. Flow (perm)	3433	3355	0	3433	1863	1583	261	3539	1583	3433	3539	1583
Satd. Flow (RTOR)		71					77		527			183
Peak Hour Factor	0.86	0.86	0.86	0.92	0.92	0.92	0.92	0.92	0.92	0.90	0.90	0.90
Shared Lane Traffic (%)												
Lane Group Flow (vph)	163	471	0	761	467	375	109	533	527	222	939	183
Turn Type	Prot	NA		Prot	NA	pm+ov	pm+pt	NA	Free	Prot	NA	pm+ov
Protected Phases	7	4		3	8	1	5	2		1	6	7
Permitted Phases						8	2		Free			6
Total Split (s)	16.0	27.0		43.0	54.0	17.0	9.0	33.0		17.0	41.0	16.0
Total Lost Time (s)	4.0	4.0		4.0	4.0	3.0	4.0	4.0		4.0	4.0	3.0
Act Effect Green (s)	10.8	19.6		30.3	39.1	56.2	35.3	30.3	108.4	12.0	37.3	53.1
Actuated g/C Ratio	0.10	0.18		0.28	0.36	0.52	0.33	0.28	1.00	0.11	0.34	0.49
v/c Ratio	0.48	0.71		0.79	0.69	0.44	0.71	0.54	0.33	0.58	0.77	0.21
Control Delay	52.6	42.2		43.0	35.3	13.9	51.0	37.4	0.6	53.9	38.4	3.4
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	52.6	42.2		43.0	35.3	13.9	51.0	37.4	0.6	53.9	38.4	3.4
LOS	D	D		D	D	B	D	D	A	D	D	A
Approach Delay		44.8			33.9			22.1			36.2	
Approach LOS		D			C			C			D	

Intersection Summary

Cycle Length: 120	
Actuated Cycle Length: 108.4	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.79	
Intersection Signal Delay: 33.1	Intersection LOS: C
Intersection Capacity Utilization 74.0%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 1: Marksheffel & Dublin



Lanes, Volumes, Timings
6: Marksheffel & Woodmen

Scenario 2 Background
AM Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	50	850	575	580	1800	100	680	175	395	125	205	150
Future Volume (vph)	50	850	575	580	1800	100	680	175	395	125	205	150
Satd. Flow (prot)	3433	3539	1583	3433	3539	1583	3433	3539	1583	1770	3539	1583
Flt Permitted	0.950			0.950			0.950			0.626		
Satd. Flow (perm)	3433	3539	1583	3433	3539	1583	3433	3539	1583	1166	3539	1583
Satd. Flow (RTOR)			458			273			454			273
Peak Hour Factor	0.91	0.91	0.91	0.92	0.92	0.92	0.87	0.87	0.87	0.87	0.87	0.87
Shared Lane Traffic (%)												
Lane Group Flow (vph)	55	934	632	630	1957	109	782	201	454	144	236	172
Turn Type	Prot	NA	Perm	Prot	NA	Free	Prot	NA	Free	pm+pt	NA	Free
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			Free			Free	4		Free
Total Split (s)	9.0	42.0	42.0	33.0	66.0		31.0	27.0		18.0	14.0	
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
Act Effect Green (s)	5.0	38.8	38.8	26.4	62.1	118.2	27.0	24.7	118.2	22.3	10.0	118.2
Actuated g/C Ratio	0.04	0.33	0.33	0.22	0.53	1.00	0.23	0.21	1.00	0.19	0.08	1.00
v/c Ratio	0.38	0.81	0.76	0.82	1.05	0.07	1.00	0.27	0.29	0.51	0.79	0.11
Control Delay	63.7	43.1	16.7	53.5	65.2	0.1	77.4	41.5	0.5	36.4	72.7	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	63.7	43.1	16.7	53.5	65.2	0.1	77.4	41.5	0.5	36.4	72.7	0.1
LOS	E	D	B	D	E	A	E	D	A	D	E	A
Approach Delay		33.5			59.8			48.1			40.6	
Approach LOS		C			E			D			D	

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 118.2
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 1.05
 Intersection Signal Delay: 48.7
 Intersection LOS: D
 Intersection Capacity Utilization 91.5%
 ICU Level of Service F
 Analysis Period (min) 15

Splits and Phases: 6: Marksheffel & Woodmen



Lanes, Volumes, Timings
1: Marksheffel & Dublin

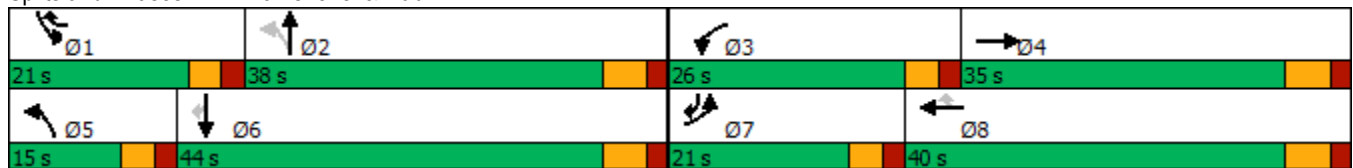
Scenario 2 Background
PM Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	210	355	105	395	275	185	195	885	580	360	790	140
Future Volume (vph)	210	355	105	395	275	185	195	885	580	360	790	140
Satd. Flow (prot)	3433	3419	0	3433	1863	1583	1770	3539	1583	3433	3539	1583
Flt Permitted	0.950			0.950			0.207			0.950		
Satd. Flow (perm)	3433	3419	0	3433	1863	1583	386	3539	1583	3433	3539	1583
Satd. Flow (RTOR)		30				73			411			152
Peak Hour Factor	0.92	0.92	0.92	0.90	0.90	0.90	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	228	500	0	439	306	206	212	962	630	391	859	152
Turn Type	Prot	NA		Prot	NA	pm+ov	pm+pt	NA	Free	Prot	NA	pm+ov
Protected Phases	7	4		3	8	1	5	2		1	6	7
Permitted Phases						8	2		Free			6
Total Split (s)	21.0	35.0		26.0	40.0	21.0	15.0	38.0		21.0	44.0	21.0
Total Lost Time (s)	5.0	6.0		5.0	6.0	5.0	5.0	6.0		5.0	6.0	5.0
Act Effect Green (s)	12.4	20.6		18.2	26.3	47.8	43.8	32.8	109.1	15.5	38.2	56.7
Actuated g/C Ratio	0.11	0.19		0.17	0.24	0.44	0.40	0.30	1.00	0.14	0.35	0.52
v/c Ratio	0.58	0.75		0.77	0.68	0.28	0.75	0.90	0.40	0.80	0.69	0.17
Control Delay	52.9	46.7		53.7	46.1	13.3	37.9	50.8	0.8	60.0	35.1	2.9
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	52.9	46.7		53.7	46.1	13.3	37.9	50.8	0.8	60.0	35.1	2.9
LOS	D	D		D	D	B	D	D	A	E	D	A
Approach Delay		48.7			42.5			31.8			38.6	
Approach LOS		D			D			C			D	

Intersection Summary

Cycle Length: 120	
Actuated Cycle Length: 109.1	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.90	
Intersection Signal Delay: 38.3	Intersection LOS: D
Intersection Capacity Utilization 77.5%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 1: Marksheffel & Dublin



Lanes, Volumes, Timings
6: Marksheffel & Woodmen

Scenario 2 Background
PM Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	200	1475	855	540	1035	200	595	270	510	200	250	125
Future Volume (vph)	200	1475	855	540	1035	200	595	270	510	200	250	125
Satd. Flow (prot)	3433	3539	1583	3433	3539	1583	3433	3539	1583	1770	3539	1583
Flt Permitted	0.950			0.950			0.950			0.573		
Satd. Flow (perm)	3433	3539	1583	3433	3539	1583	3433	3539	1583	1067	3539	1583
Satd. Flow (RTOR)			445			273			273			273
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.90	0.90	0.90
Shared Lane Traffic (%)												
Lane Group Flow (vph)	217	1603	929	587	1125	217	647	293	554	222	278	139
Turn Type	Prot	NA	Perm	Prot	NA	Free	Prot	NA	Free	pm+pt	NA	Free
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			Free			Free	4		Free
Total Split (s)	18.0	57.0	57.0	24.0	63.0		25.0	21.0		18.0	14.0	
Total Lost Time (s)	5.0	7.0	7.0	5.0	7.0		5.0	6.0		5.0	6.0	
Act Effect Green (s)	11.9	50.0	50.0	19.0	57.1	120.0	20.0	15.1	120.0	21.9	8.0	120.0
Actuated g/C Ratio	0.10	0.42	0.42	0.16	0.48	1.00	0.17	0.13	1.00	0.18	0.07	1.00
v/c Ratio	0.64	1.09	1.01	1.08	0.67	0.14	1.13	0.66	0.35	0.82	1.18	0.09
Control Delay	60.7	85.2	51.4	109.8	26.8	0.2	124.5	57.9	0.6	61.9	165.0	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	60.7	85.2	51.4	109.8	26.8	0.2	124.5	57.9	0.6	61.9	165.0	0.1
LOS	E	F	D	F	C	A	F	E	A	E	F	A
Approach Delay		71.8			49.1			65.5			93.3	
Approach LOS		E			D			E			F	

Intersection Summary

Cycle Length: 120	
Actuated Cycle Length: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.18	
Intersection Signal Delay: 66.0	Intersection LOS: E
Intersection Capacity Utilization 99.2%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 6: Marksheffel & Woodmen



Lanes, Volumes, Timings
1: Marksheffel & Dublin

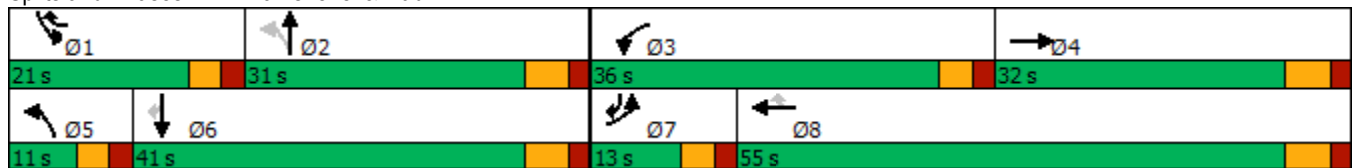
Scenario 2 Total
AM Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	140	318	140	755	535	489	100	490	512	271	845	165
Future Volume (vph)	140	318	140	755	535	489	100	490	512	271	845	165
Satd. Flow (prot)	3433	3376	0	3433	1863	1583	1770	3539	1583	3433	3539	1583
Flt Permitted	0.950			0.950			0.144			0.950		
Satd. Flow (perm)	3433	3376	0	3433	1863	1583	268	3539	1583	3433	3539	1583
Satd. Flow (RTOR)		54				73			557			183
Peak Hour Factor	0.86	0.86	0.86	0.92	0.92	0.92	0.92	0.92	0.92	0.90	0.90	0.90
Shared Lane Traffic (%)												
Lane Group Flow (vph)	163	533	0	821	582	532	109	533	557	301	939	183
Turn Type	Prot	NA		Prot	NA	pm+ov	pm+pt	NA	Free	Prot	NA	pm+ov
Protected Phases	7	4		3	8	1	5	2		1	6	7
Permitted Phases						8	2		Free			6
Total Split (s)	13.0	32.0		36.0	55.0	21.0	11.0	31.0		21.0	41.0	13.0
Total Lost Time (s)	4.0	4.0		4.0	4.0	3.0	4.0	4.0		4.0	4.0	3.0
Act Effect Green (s)	8.9	23.4		30.5	44.9	65.4	35.8	28.8	114.1	15.4	37.1	51.1
Actuated g/C Ratio	0.08	0.21		0.27	0.39	0.57	0.31	0.25	1.00	0.13	0.33	0.45
v/c Ratio	0.61	0.73		0.89	0.79	0.57	0.62	0.60	0.35	0.65	0.82	0.23
Control Delay	62.3	44.2		53.9	39.3	15.2	40.3	42.3	0.6	54.5	43.0	3.7
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	62.3	44.2		53.9	39.3	15.2	40.3	42.3	0.6	54.5	43.0	3.7
LOS	E	D		D	D	B	D	D	A	D	D	A
Approach Delay		48.5			38.9			22.7			40.4	
Approach LOS		D			D			C			D	

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 114.1
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.89
 Intersection Signal Delay: 36.9
 Intersection LOS: D
 Intersection Capacity Utilization 77.0%
 ICU Level of Service D
 Analysis Period (min) 15

Splits and Phases: 1: Marksheffel & Dublin



Lanes, Volumes, Timings
6: Marksheffel & Woodmen

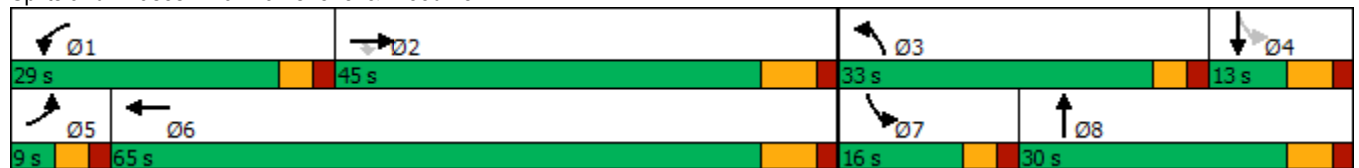
Scenario 2 Total
AM Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	50	815	621	580	1750	100	772	226	396	125	230	150
Future Volume (vph)	50	815	621	580	1750	100	772	226	396	125	230	150
Satd. Flow (prot)	3433	3539	1583	3433	3539	1583	3433	3539	1583	1770	3539	1583
Flt Permitted	0.950			0.950			0.950			0.591		
Satd. Flow (perm)	3433	3539	1583	3433	3539	1583	3433	3539	1583	1101	3539	1583
Satd. Flow (RTOR)			520			273			455			273
Peak Hour Factor	0.91	0.91	0.91	0.92	0.92	0.92	0.87	0.87	0.87	0.87	0.87	0.87
Shared Lane Traffic (%)												
Lane Group Flow (vph)	55	896	682	630	1902	109	887	260	455	144	264	172
Turn Type	Prot	NA	Perm	Prot	NA	Free	Prot	NA	Free	pm+pt	NA	Free
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			Free			Free	4		Free
Total Split (s)	9.0	45.0	45.0	29.0	65.0		33.0	30.0		16.0	13.0	
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
Act Effect Green (s)	5.0	39.9	39.9	24.3	61.1	118.2	29.0	26.8	118.2	20.3	9.0	118.2
Actuated g/C Ratio	0.04	0.34	0.34	0.21	0.52	1.00	0.25	0.23	1.00	0.17	0.08	1.00
v/c Ratio	0.38	0.75	0.78	0.89	1.04	0.07	1.05	0.32	0.29	0.57	0.98	0.11
Control Delay	63.7	39.5	15.1	62.3	61.7	0.1	89.3	40.3	0.5	39.0	105.3	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	63.7	39.5	15.1	62.3	61.7	0.1	89.3	40.3	0.5	39.0	105.3	0.1
LOS	E	D	B	E	E	A	F	D	A	D	F	A
Approach Delay		30.1			59.3			56.1			57.7	
Approach LOS		C			E			E			E	

Intersection Summary

Cycle Length: 120	
Actuated Cycle Length: 118.2	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.05	
Intersection Signal Delay: 51.0	Intersection LOS: D
Intersection Capacity Utilization 93.4%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 6: Marksheffel & Woodmen



Lanes, Volumes, Timings
1: Marksheffel & Dublin

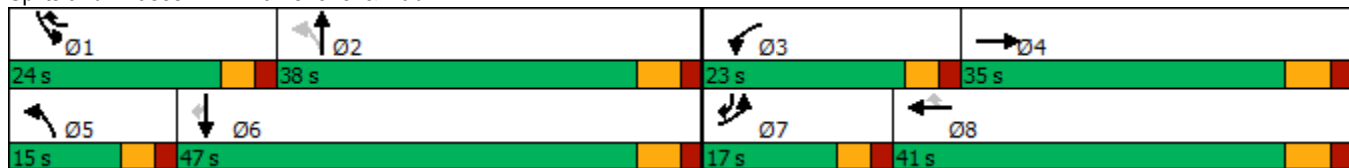
Scenario 2 Total
PM Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	210	461	105	430	343	278	195	885	635	500	790	140
Future Volume (vph)	210	461	105	430	343	278	195	885	635	500	790	140
Satd. Flow (prot)	3433	3440	0	3433	1863	1583	1770	3539	1583	3433	3539	1583
Flt Permitted	0.950			0.950			0.226			0.950		
Satd. Flow (perm)	3433	3440	0	3433	1863	1583	421	3539	1583	3433	3539	1583
Satd. Flow (RTOR)		21				73			450			152
Peak Hour Factor	0.92	0.92	0.92	0.90	0.90	0.90	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	228	615	0	478	381	309	212	962	690	543	859	152
Turn Type	Prot	NA		Prot	NA	pm+ov	pm+pt	NA	Free	Prot	NA	pm+ov
Protected Phases	7	4		3	8	1	5	2		1	6	7
Permitted Phases						8	2		Free			6
Total Split (s)	17.0	35.0		23.0	41.0	24.0	15.0	38.0		24.0	47.0	17.0
Total Lost Time (s)	5.0	6.0		5.0	6.0	5.0	5.0	6.0		5.0	6.0	5.0
Act Effect Green (s)	11.3	24.9		17.9	31.4	56.5	43.0	32.0	115.8	19.0	41.0	58.3
Actuated g/C Ratio	0.10	0.22		0.15	0.27	0.49	0.37	0.28	1.00	0.16	0.35	0.50
v/c Ratio	0.68	0.82		0.90	0.75	0.38	0.78	0.98	0.44	0.96	0.69	0.17
Control Delay	62.1	51.2		70.3	49.2	15.5	41.5	67.4	0.9	78.8	35.8	3.1
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	62.1	51.2		70.3	49.2	15.5	41.5	67.4	0.9	78.8	35.8	3.1
LOS	E	D		E	D	B	D	E	A	E	D	A
Approach Delay		54.2			48.9			39.8			47.6	
Approach LOS		D			D			D			D	

Intersection Summary

Cycle Length: 120	
Actuated Cycle Length: 115.8	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.98	
Intersection Signal Delay: 46.2	Intersection LOS: D
Intersection Capacity Utilization 85.4%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 1: Marksheffel & Dublin



Lanes, Volumes, Timings
6: Marksheffel & Woodmen

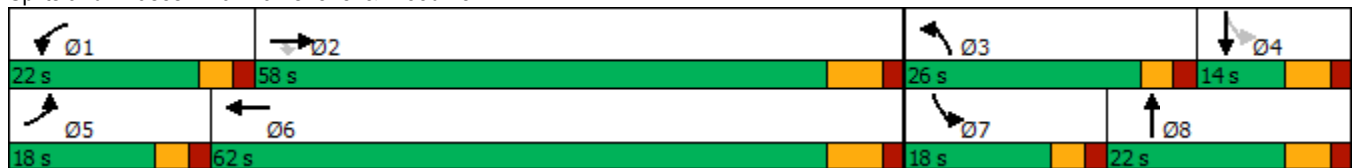
Scenario 2 Total
PM Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	200	1475	948	541	1035	200	654	303	511	200	276	100
Future Volume (vph)	200	1475	948	541	1035	200	654	303	511	200	276	100
Satd. Flow (prot)	3433	3539	1583	3433	3539	1583	3433	3539	1583	1770	3539	1583
Flt Permitted	0.950			0.950			0.950			0.553		
Satd. Flow (perm)	3433	3539	1583	3433	3539	1583	3433	3539	1583	1030	3539	1583
Satd. Flow (RTOR)			473			227			258			227
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.90	0.90	0.90
Shared Lane Traffic (%)												
Lane Group Flow (vph)	217	1603	1030	588	1125	217	711	329	555	222	307	111
Turn Type	Prot	NA	Perm	Prot	NA	Free	Prot	NA	Free	pm+pt	NA	Free
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			Free			Free	4		Free
Total Split (s)	18.0	58.0	58.0	22.0	62.0		26.0	22.0		18.0	14.0	
Total Lost Time (s)	5.0	7.0	7.0	5.0	7.0		5.0	6.0		5.0	6.0	
Act Effect Green (s)	11.9	51.0	51.0	17.0	56.1	120.0	21.0	16.0	120.0	22.0	8.0	120.0
Actuated g/C Ratio	0.10	0.42	0.42	0.14	0.47	1.00	0.18	0.13	1.00	0.18	0.07	1.00
v/c Ratio	0.64	1.07	1.09	1.21	0.68	0.14	1.19	0.70	0.35	0.83	1.31	0.07
Control Delay	60.7	76.9	76.6	156.2	27.8	0.2	142.5	58.3	0.6	62.0	208.7	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	60.7	76.9	76.6	156.2	27.8	0.2	142.5	58.3	0.6	62.0	208.7	0.1
LOS	E	E	E	F	C	A	F	E	A	E	F	A
Approach Delay		75.6			63.8			75.8			121.6	
Approach LOS		E			E			E			F	

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 120
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 1.31
 Intersection Signal Delay: 76.6
 Intersection LOS: E
 Intersection Capacity Utilization 101.7%
 ICU Level of Service G
 Analysis Period (min) 15

Splits and Phases: 6: Marksheffel & Woodmen



Lanes, Volumes, Timings
1: Marksheffel & Dublin

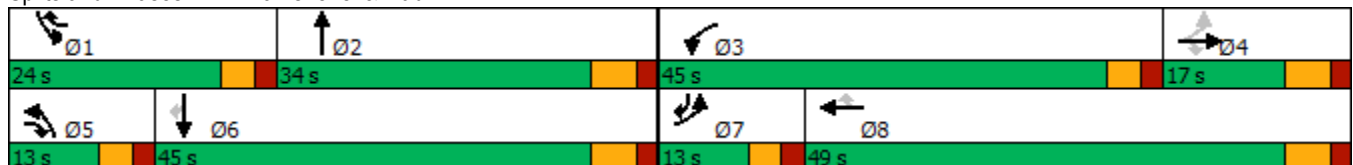
Scenario 3 Background
AM Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	175	250	350	645	380	185	175	590	485	105	1085	215
Future Volume (vph)	175	250	350	645	380	185	175	590	485	105	1085	215
Satd. Flow (prot)	3433	3539	1583	3433	3539	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.510			0.950			0.950			0.950		
Satd. Flow (perm)	1843	3539	1583	3433	3539	1583	3433	3539	1583	3433	3539	1583
Satd. Flow (RTOR)			164			73			516			221
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	190	272	380	701	413	201	190	641	527	114	1179	234
Turn Type	pm+pt	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	Free	Prot	NA	pm+ov
Protected Phases	7	4	5	3	8	1	5	2		1	6	7
Permitted Phases	4		4			8			Free			6
Total Split (s)	13.0	17.0	13.0	45.0	49.0	24.0	13.0	34.0		24.0	45.0	13.0
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
Act Effect Green (s)	21.6	12.8	25.8	28.0	31.9	45.9	9.0	40.2	107.0	9.9	41.1	54.0
Actuated g/C Ratio	0.20	0.12	0.24	0.26	0.30	0.43	0.08	0.38	1.00	0.09	0.38	0.50
v/c Ratio	0.38	0.65	0.75	0.78	0.39	0.28	0.66	0.48	0.33	0.36	0.87	0.26
Control Delay	24.4	53.6	32.2	43.1	30.6	12.6	60.2	28.2	0.6	49.6	39.4	3.5
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	24.4	53.6	32.2	43.1	30.6	12.6	60.2	28.2	0.6	49.6	39.4	3.5
LOS	C	D	C	D	C	B	E	C	A	D	D	A
Approach Delay		37.4			34.6			22.0			34.6	
Approach LOS		D			C			C			C	

Intersection Summary

Cycle Length: 120	
Actuated Cycle Length: 107	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.87	
Intersection Signal Delay: 31.7	Intersection LOS: C
Intersection Capacity Utilization 80.1%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 1: Marksheffel & Dublin



Lanes, Volumes, Timings
6: Marksheffel & Woodmen

Scenario 3 Background
AM Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	175	870	470	335	1880	320	225	595	385	355	600	250
Future Volume (vph)	175	870	470	335	1880	320	225	595	385	355	600	250
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Satd. Flow (RTOR)			511			227			418			227
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	190	946	511	364	2043	348	245	647	418	386	652	272
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
Total Split (s)	13.0	48.0		23.0	58.0		15.0	29.0		20.0	34.0	
Total Lost Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Act Effect Green (s)	9.0	45.4	119.6	17.6	54.0	119.6	11.0	24.7	119.6	15.9	29.6	119.6
Actuated g/C Ratio	0.08	0.38	1.00	0.15	0.45	1.00	0.09	0.21	1.00	0.13	0.25	1.00
v/c Ratio	0.74	0.49	0.32	0.72	0.89	0.22	0.78	0.89	0.26	0.85	0.75	0.17
Control Delay	71.7	29.7	0.5	57.3	36.2	0.3	70.6	61.2	0.4	68.6	47.6	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	71.7	29.7	0.5	57.3	36.2	0.3	70.6	61.2	0.4	68.6	47.6	0.2
LOS	E	C	A	E	D	A	E	E	A	E	D	A
Approach Delay		25.5			34.4			43.6			44.0	
Approach LOS		C			C			D			D	

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 119.6
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.89
 Intersection Signal Delay: 35.8
 Intersection LOS: D
 Intersection Capacity Utilization 81.2%
 ICU Level of Service D
 Analysis Period (min) 15

Splits and Phases: 6: Marksheffel & Woodmen



Lanes, Volumes, Timings
1: Marksheffel & Dublin

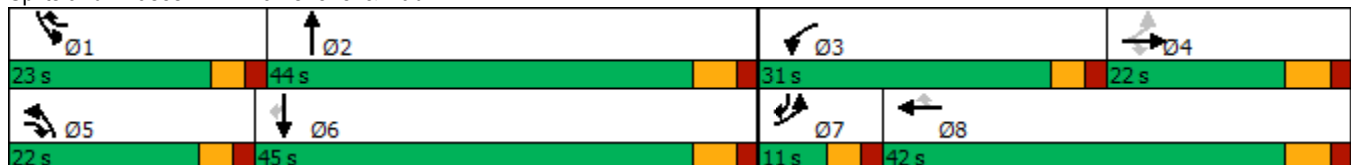
Scenario 3 Background
PM Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	225	310	435	395	150	85	350	995	260	155	915	100
Future Volume (vph)	225	310	435	395	150	85	350	995	260	155	915	100
Satd. Flow (prot)	3433	3539	1583	3433	3539	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.649			0.950			0.950			0.950		
Satd. Flow (perm)	2345	3539	1583	3433	3539	1583	3433	3539	1583	3433	3539	1583
Satd. Flow (RTOR)			118			73			218			118
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	245	337	473	429	163	92	380	1082	283	168	995	109
Turn Type	pm+pt	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	Free	Prot	NA	pm+ov
Protected Phases	7	4	5	3	8	1	5	2		1	6	7
Permitted Phases	4		4			8			Free			6
Total Split (s)	11.0	22.0	22.0	31.0	42.0	23.0	22.0	44.0		23.0	45.0	11.0
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
Act Effect Green (s)	23.6	16.5	37.5	20.0	29.5	45.3	16.9	46.3	110.7	11.8	41.2	52.2
Actuated g/C Ratio	0.21	0.15	0.34	0.18	0.27	0.41	0.15	0.42	1.00	0.11	0.37	0.47
v/c Ratio	0.43	0.64	0.77	0.69	0.17	0.13	0.73	0.73	0.18	0.46	0.76	0.13
Control Delay	28.7	51.0	34.3	49.0	31.3	6.6	54.3	31.9	0.2	51.5	36.0	3.5
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	28.7	51.0	34.3	49.0	31.3	6.6	54.3	31.9	0.2	51.5	36.0	3.5
LOS	C	D	C	D	C	A	D	C	A	D	D	A
Approach Delay		38.3			39.1			31.6			35.2	
Approach LOS		D			D			C			D	

Intersection Summary

Cycle Length: 120	
Actuated Cycle Length: 110.7	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.77	
Intersection Signal Delay: 35.2	Intersection LOS: D
Intersection Capacity Utilization 73.5%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 1: Marksheffel & Dublin



Lanes, Volumes, Timings
6: Marksheffel & Woodmen

Scenario 3 Background
PM Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	250	1655	485	310	950	315	200	775	425	350	625	125
Future Volume (vph)	250	1655	485	310	950	315	200	775	425	350	625	125
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Satd. Flow (RTOR)			360			342			407			182
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	272	1799	527	337	1033	342	217	842	462	380	679	136
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
Total Split (s)	19.0	52.0		16.0	49.0		17.0	34.0		18.0	35.0	
Total Lost Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Act Effect Green (s)	14.2	48.0	120.0	12.0	45.8	120.0	12.3	30.0	120.0	14.0	31.7	120.0
Actuated g/C Ratio	0.12	0.40	1.00	0.10	0.38	1.00	0.10	0.25	1.00	0.12	0.26	1.00
v/c Ratio	0.67	0.88	0.33	0.98	0.53	0.22	0.62	0.95	0.29	0.95	0.73	0.09
Control Delay	59.3	39.8	0.6	98.5	30.2	0.3	59.5	65.3	0.5	86.9	45.7	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	59.3	39.8	0.6	98.5	30.2	0.3	59.5	65.3	0.5	86.9	45.7	0.1
LOS	E	D	A	F	C	A	E	E	A	F	D	A
Approach Delay		33.9			37.7			44.8			53.6	
Approach LOS		C			D			D			D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.98	
Intersection Signal Delay: 40.5	Intersection LOS: D
Intersection Capacity Utilization 85.6%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 6: Marksheffel & Woodmen



Lanes, Volumes, Timings
 12: Banning Lewis Parkway & Woodmen

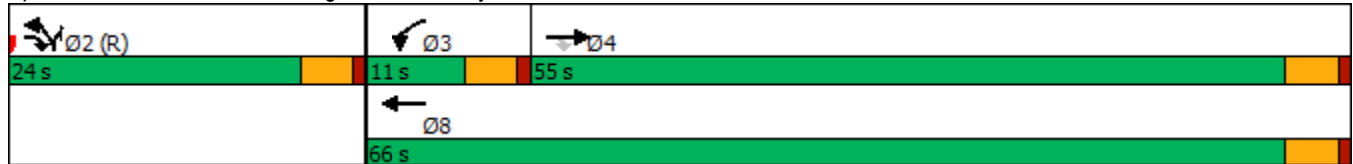
Scenario 3 Background
 PM Peak Hour

	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑	↑	↓	↑↑↑	↘↙	↘
Traffic Volume (vph)	2230	200	55	1475	100	30
Future Volume (vph)	2230	200	55	1475	100	30
Satd. Flow (prot)	5085	1583	1770	5085	3433	1583
Flt Permitted			0.950		0.950	
Satd. Flow (perm)	5085	1583	1770	5085	3433	1583
Satd. Flow (RTOR)		217				33
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Lane Group Flow (vph)	2424	217	60	1603	109	33
Turn Type	NA	pm+ov	Prot	NA	Prot	Prot
Protected Phases	4	2	3	8	2	2
Permitted Phases		4				2
Total Split (s)	55.0	24.0	11.0	66.0	24.0	24.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Act Effect Green (s)	51.0	78.0	6.8	59.8	22.2	22.2
Actuated g/C Ratio	0.57	0.87	0.08	0.66	0.25	0.25
v/c Ratio	0.84	0.15	0.45	0.47	0.13	0.08
Control Delay	19.7	0.4	50.9	7.8	42.2	26.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	19.7	0.4	50.9	7.8	42.2	26.1
LOS	B	A	D	A	D	C
Approach Delay	18.1			9.4	38.5	
Approach LOS	B			A	D	

Intersection Summary

Cycle Length: 90
 Actuated Cycle Length: 90
 Offset: 0 (0%), Referenced to phase 2:NBL and 6:, Start of Green
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.84
 Intersection Signal Delay: 15.5
 Intersection LOS: B
 Intersection Capacity Utilization 56.5%
 ICU Level of Service B
 Analysis Period (min) 15

Splits and Phases: 12: Banning Lewis Parkway & Woodmen



Lanes, Volumes, Timings
14: US 24 & Stetson

Scenario 3 Background
PM Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	5	0	175	55	0	5	270	1940	120	10	1055	10
Future Volume (vph)	5	0	175	55	0	5	270	1940	120	10	1055	10
Satd. Flow (prot)	1770	1863	1583	1770	1583	0	1770	5085	1583	1770	5085	1583
Flt Permitted				0.678			0.950			0.085		
Satd. Flow (perm)	1863	1863	1583	1263	1583	0	1770	5085	1583	158	5085	1583
Satd. Flow (RTOR)			615		73				130			127
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	5	0	190	60	5	0	293	2109	130	11	1147	11
Turn Type	Perm		Free	pm+pt	NA		Prot	NA	Perm	Perm	NA	Perm
Protected Phases		4		3	8		5	2			6	
Permitted Phases	4		Free	8					2	6		6
Total Split (s)	22.5	22.5		9.5	32.0		27.0	58.0	58.0	31.0	31.0	31.0
Total Lost Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Act Effect Green (s)	6.5		90.0	8.1	8.2		20.3	76.6	76.6	51.5	51.5	51.5
Actuated g/C Ratio	0.07		1.00	0.09	0.09		0.23	0.85	0.85	0.57	0.57	0.57
v/c Ratio	0.04		0.12	0.41	0.02		0.73	0.49	0.10	0.12	0.39	0.01
Control Delay	39.0		0.2	45.5	0.2		42.9	3.1	0.7	19.6	13.3	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	39.0		0.2	45.5	0.2		42.9	3.1	0.7	19.6	13.3	0.0
LOS	D		A	D	A		D	A	A	B	B	A
Approach Delay		1.2			42.0			7.6			13.2	
Approach LOS		A			D			A			B	

Intersection Summary

Cycle Length: 90
 Actuated Cycle Length: 90
 Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Green
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.73
 Intersection Signal Delay: 9.5
 Intersection LOS: A
 Intersection Capacity Utilization 61.4%
 ICU Level of Service B
 Analysis Period (min) 15

Splits and Phases: 14: US 24 & Stetson



Lanes, Volumes, Timings
1: Marksheffel & Dublin

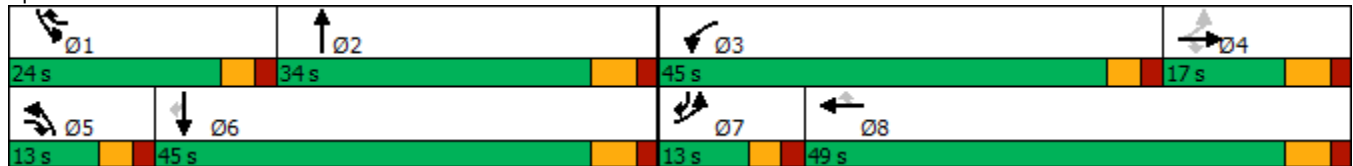
Scenario 3 Total
AM Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	175	348	350	1105	530	508	175	590	784	312	1085	215
Future Volume (vph)	175	348	350	1105	530	508	175	590	784	312	1085	215
Satd. Flow (prot)	3433	3539	1583	3433	3539	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.435			0.950			0.950			0.950		
Satd. Flow (perm)	1572	3539	1583	3433	3539	1583	3433	3539	1583	3433	3539	1583
Satd. Flow (RTOR)			164			73			794			125
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	190	378	380	1201	576	552	190	641	852	339	1179	234
Turn Type	pm+pt	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	Free	Prot	NA	pm+ov
Protected Phases	7	4	5	3	8	1	5	2		1	6	7
Permitted Phases	4		4			8			Free			6
Total Split (s)	13.0	17.0	13.0	45.0	49.0	24.0	13.0	34.0		24.0	45.0	13.0
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
Act Effect Green (s)	21.8	13.0	26.0	41.0	45.2	67.1	9.0	32.1	120.0	17.9	41.0	53.8
Actuated g/C Ratio	0.18	0.11	0.22	0.34	0.38	0.56	0.08	0.27	1.00	0.15	0.34	0.45
v/c Ratio	0.45	0.99	0.81	1.02	0.43	0.60	0.74	0.68	0.54	0.66	0.98	0.30
Control Delay	26.8	96.5	39.4	72.0	29.2	18.0	72.0	44.1	1.3	54.5	59.9	10.5
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	26.8	96.5	39.4	72.0	29.2	18.0	72.0	44.1	1.3	54.5	59.9	10.5
LOS	C	F	D	E	C	B	E	D	A	D	E	B
Approach Delay		59.6			48.6			25.6			52.3	
Approach LOS		E			D			C			D	

Intersection Summary

Cycle Length: 120	
Actuated Cycle Length: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.02	
Intersection Signal Delay: 45.3	Intersection LOS: D
Intersection Capacity Utilization 93.2%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 1: Marksheffel & Dublin



Lanes, Volumes, Timings
6: Marksheffel & Woodmen

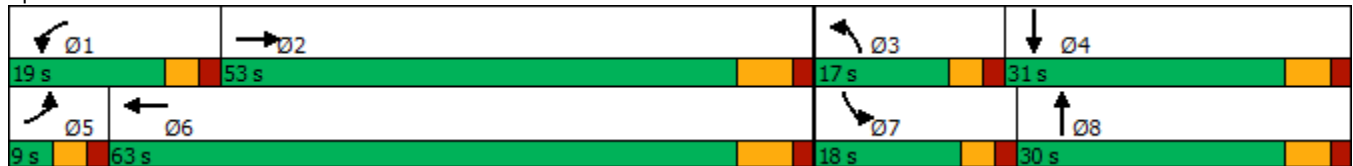
Scenario 3 Total
AM Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	175	1402	540	335	2728	435	330	810	385	425	737	250
Future Volume (vph)	175	1402	540	335	2728	435	330	810	385	425	737	250
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Satd. Flow (RTOR)			473			227			352			227
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	190	1524	587	364	2965	473	359	880	418	462	801	272
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
Total Split (s)	9.0	53.0		19.0	63.0		17.0	30.0		18.0	31.0	
Total Lost Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Act Effect Green (s)	5.0	49.0	120.0	15.0	59.0	120.0	13.0	26.0	120.0	14.0	27.0	120.0
Actuated g/C Ratio	0.04	0.41	1.00	0.12	0.49	1.00	0.11	0.22	1.00	0.12	0.22	1.00
v/c Ratio	1.33	0.73	0.37	0.85	1.19	0.30	0.97	1.15	0.26	1.16	1.01	0.17
Control Delay	231.7	32.6	0.7	70.2	117.7	0.5	92.8	124.2	0.4	141.2	79.9	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	231.7	32.6	0.7	70.2	117.7	0.5	92.8	124.2	0.4	141.2	79.9	0.2
LOS	F	C	A	E	F	A	F	F	A	F	E	A
Approach Delay		40.9			98.5			86.2			84.3	
Approach LOS		D			F			F			F	

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 120
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 1.33
 Intersection Signal Delay: 79.7
 Intersection Capacity Utilization 105.5%
 Analysis Period (min) 15
 Intersection LOS: E
 ICU Level of Service G

Splits and Phases: 6: Marksheffel & Woodmen



Lanes, Volumes, Timings
 12: Banning Lewis Parkway & Woodmen

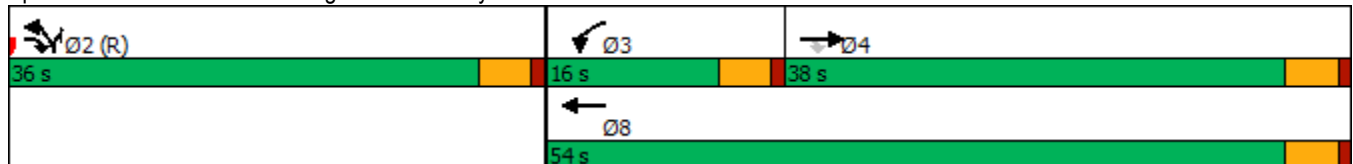
Scenario 3 Total
 AM Peak Hour

	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑	↑	↘	↑↑↑	↘↘	↘
Traffic Volume (vph)	1545	667	113	2385	1105	163
Future Volume (vph)	1545	667	113	2385	1105	163
Satd. Flow (prot)	5085	1583	1770	5085	3433	1583
Flt Permitted			0.950		0.950	
Satd. Flow (perm)	5085	1583	1770	5085	3433	1583
Satd. Flow (RTOR)		330				177
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1679	725	123	2592	1201	177
Turn Type	NA	pm+ov	Prot	NA	Prot	Prot
Protected Phases	4	2	3	8	2	2
Permitted Phases		4				2
Total Split (s)	38.0	36.0	16.0	54.0	36.0	36.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Act Effect Green (s)	35.2	71.2	10.8	50.0	32.0	32.0
Actuated g/C Ratio	0.39	0.79	0.12	0.56	0.36	0.36
v/c Ratio	0.84	0.55	0.58	0.92	0.98	0.26
Control Delay	30.2	3.5	48.7	24.8	48.0	5.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	30.2	3.5	48.7	24.8	48.0	5.7
LOS	C	A	D	C	D	A
Approach Delay	22.2			25.9	42.5	
Approach LOS	C			C	D	

Intersection Summary

Cycle Length: 90
 Actuated Cycle Length: 90
 Offset: 0 (0%), Referenced to phase 2:NBL and 6:, Start of Green
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.98
 Intersection Signal Delay: 28.0
 Intersection LOS: C
 Intersection Capacity Utilization 84.3%
 ICU Level of Service E
 Analysis Period (min) 15

Splits and Phases: 12: Banning Lewis Parkway & Woodmen



Lanes, Volumes, Timings
1: Marksheffel & Dublin

Scenario 3 Total
PM Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	225	467	435	704	250	301	350	995	744	495	915	100
Future Volume (vph)	225	467	435	704	250	301	350	995	744	495	915	100
Satd. Flow (prot)	3433	3539	1583	3433	3539	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.584			0.950			0.950			0.950		
Satd. Flow (perm)	2110	3539	1583	3433	3539	1583	3433	3539	1583	3433	3539	1583
Satd. Flow (RTOR)			118			73			469			118
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	245	508	473	765	272	327	380	1082	809	538	995	109
Turn Type	pm+pt	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	Free	Prot	NA	pm+ov
Protected Phases	7	4	5	3	8	1	5	2		1	6	7
Permitted Phases	4		4			8			Free			6
Total Split (s)	11.0	22.0	22.0	31.0	42.0	23.0	22.0	44.0		23.0	45.0	11.0
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
Act Effect Green (s)	25.0	18.0	39.4	27.0	38.0	61.0	17.4	40.0	120.0	19.0	41.6	52.6
Actuated g/C Ratio	0.21	0.15	0.33	0.22	0.32	0.51	0.14	0.33	1.00	0.16	0.35	0.44
v/c Ratio	0.47	0.96	0.79	0.99	0.24	0.39	0.77	0.92	0.51	0.99	0.81	0.14
Control Delay	29.4	80.9	37.8	76.9	31.1	15.3	60.3	51.5	1.2	87.0	42.1	3.5
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	29.4	80.9	37.8	76.9	31.1	15.3	60.3	51.5	1.2	87.0	42.1	3.5
LOS	C	F	D	E	C	B	E	D	A	F	D	A
Approach Delay		54.0			53.0			35.1			54.2	
Approach LOS		D			D			D			D	

Intersection Summary

Cycle Length: 120	
Actuated Cycle Length: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.99	
Intersection Signal Delay: 47.2	Intersection LOS: D
Intersection Capacity Utilization 88.0%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 1: Marksheffel & Dublin



Lanes, Volumes, Timings
6: Marksheffel & Woodmen

Scenario 3 Total
PM Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	250	2556	595	310	1524	386	270	921	425	460	855	125
Future Volume (vph)	250	2556	595	310	1524	386	270	921	425	460	855	125
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Satd. Flow (RTOR)			286			291			342			182
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	272	2778	647	337	1657	420	293	1001	462	500	929	136
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
Total Split (s)	16.0	58.0		12.0	54.0		14.0	32.0		18.0	36.0	
Total Lost Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Act Effect Green (s)	12.0	54.0	120.0	8.0	50.0	120.0	10.0	28.0	120.0	14.0	32.0	120.0
Actuated g/C Ratio	0.10	0.45	1.00	0.07	0.42	1.00	0.08	0.23	1.00	0.12	0.27	1.00
v/c Ratio	0.79	1.21	0.41	1.48	0.78	0.27	1.02	1.21	0.29	1.25	0.99	0.09
Control Delay	70.1	131.7	0.8	276.0	33.5	0.4	113.6	147.0	0.5	175.2	70.0	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	70.1	131.7	0.8	276.0	33.5	0.4	113.6	147.0	0.5	175.2	70.0	0.1
LOS	E	F	A	F	C	A	F	F	A	F	E	A
Approach Delay		104.3			61.6			102.9			97.5	
Approach LOS		F			E			F			F	

Intersection Summary

Cycle Length: 120	
Actuated Cycle Length: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.48	
Intersection Signal Delay: 92.0	Intersection LOS: F
Intersection Capacity Utilization 110.1%	ICU Level of Service H
Analysis Period (min) 15	

Splits and Phases: 6: Marksheffel & Woodmen



Lanes, Volumes, Timings
1: Marksheffel & Dublin

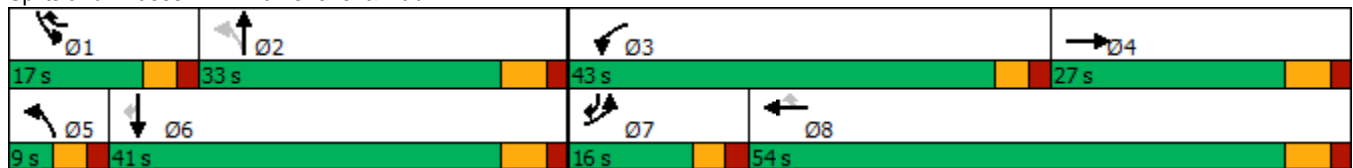
Short Term Background
AM Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	140	265	140	700	430	345	100	490	485	200	845	165
Future Volume (vph)	140	265	140	700	430	345	100	490	485	200	845	165
Satd. Flow (prot)	3433	3355	0	3433	1863	1583	1770	3539	1583	3433	3539	1583
Flt Permitted	0.950			0.950			0.140			0.950		
Satd. Flow (perm)	3433	3355	0	3433	1863	1583	261	3539	1583	3433	3539	1583
Satd. Flow (RTOR)		71				77			527			183
Peak Hour Factor	0.86	0.86	0.86	0.92	0.92	0.92	0.92	0.92	0.92	0.90	0.90	0.90
Shared Lane Traffic (%)												
Lane Group Flow (vph)	163	471	0	761	467	375	109	533	527	222	939	183
Turn Type	Prot	NA		Prot	NA	pm+ov	pm+pt	NA	Free	Prot	NA	pm+ov
Protected Phases	7	4		3	8	1	5	2		1	6	7
Permitted Phases						8	2		Free			6
Total Split (s)	16.0	27.0		43.0	54.0	17.0	9.0	33.0		17.0	41.0	16.0
Total Lost Time (s)	4.0	4.0		4.0	4.0	3.0	4.0	4.0		4.0	4.0	3.0
Act Effect Green (s)	10.8	19.6		30.3	39.1	56.2	35.3	30.3	108.4	12.0	37.3	53.1
Actuated g/C Ratio	0.10	0.18		0.28	0.36	0.52	0.33	0.28	1.00	0.11	0.34	0.49
v/c Ratio	0.48	0.71		0.79	0.69	0.44	0.71	0.54	0.33	0.58	0.77	0.21
Control Delay	52.6	42.2		43.0	35.3	13.9	51.0	37.4	0.6	53.9	38.4	3.4
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	52.6	42.2		43.0	35.3	13.9	51.0	37.4	0.6	53.9	38.4	3.4
LOS	D	D		D	D	B	D	D	A	D	D	A
Approach Delay		44.8			33.9			22.1			36.2	
Approach LOS		D			C			C			D	

Intersection Summary

Cycle Length: 120	
Actuated Cycle Length: 108.4	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.79	
Intersection Signal Delay: 33.1	Intersection LOS: C
Intersection Capacity Utilization 74.0%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 1: Marksheffel & Dublin



Lanes, Volumes, Timings
6: Marksheffel & Woodmen

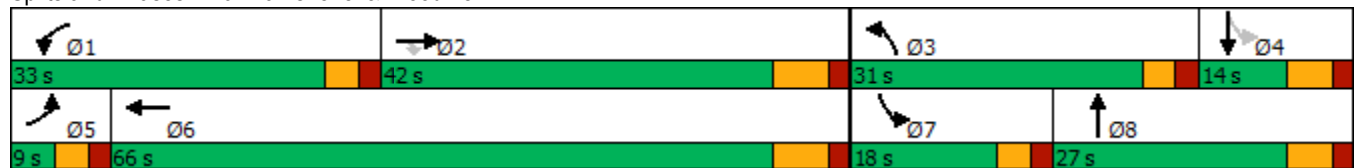
Short Term Background
AM Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	50	850	575	580	1800	100	680	175	395	125	205	150
Future Volume (vph)	50	850	575	580	1800	100	680	175	395	125	205	150
Satd. Flow (prot)	3433	3539	1583	3433	3539	1583	3433	3539	1583	1770	3539	1583
Flt Permitted	0.950			0.950			0.950			0.626		
Satd. Flow (perm)	3433	3539	1583	3433	3539	1583	3433	3539	1583	1166	3539	1583
Satd. Flow (RTOR)			458			273			454			273
Peak Hour Factor	0.91	0.91	0.91	0.92	0.92	0.92	0.87	0.87	0.87	0.87	0.87	0.87
Shared Lane Traffic (%)												
Lane Group Flow (vph)	55	934	632	630	1957	109	782	201	454	144	236	172
Turn Type	Prot	NA	Perm	Prot	NA	Free	Prot	NA	Free	pm+pt	NA	Free
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			Free			Free	4		Free
Total Split (s)	9.0	42.0	42.0	33.0	66.0		31.0	27.0		18.0	14.0	
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
Act Effect Green (s)	5.0	38.8	38.8	26.4	62.1	118.2	27.0	24.7	118.2	22.3	10.0	118.2
Actuated g/C Ratio	0.04	0.33	0.33	0.22	0.53	1.00	0.23	0.21	1.00	0.19	0.08	1.00
v/c Ratio	0.38	0.81	0.76	0.82	1.05	0.07	1.00	0.27	0.29	0.51	0.79	0.11
Control Delay	63.7	43.1	16.7	53.5	65.2	0.1	77.4	41.5	0.5	36.4	72.7	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	63.7	43.1	16.7	53.5	65.2	0.1	77.4	41.5	0.5	36.4	72.7	0.1
LOS	E	D	B	D	E	A	E	D	A	D	E	A
Approach Delay		33.5			59.8			48.1			40.6	
Approach LOS		C			E			D			D	

Intersection Summary

Cycle Length: 120	
Actuated Cycle Length: 118.2	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.05	
Intersection Signal Delay: 48.7	Intersection LOS: D
Intersection Capacity Utilization 91.5%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 6: Marksheffel & Woodmen



Intersection						
Int Delay, s/veh	3.8					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↘	↑↑↑	↑↑↑	↗	↘	↗
Traffic Vol, veh/h	41	225	263	0	0	190
Future Vol, veh/h	41	225	263	0	0	190
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	240	-	-	245	245	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	91	91	90	90	87	87
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	45	247	292	0	0	218

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	292	0	-	0	481 146
Stage 1	-	-	-	-	292 -
Stage 2	-	-	-	-	189 -
Critical Hdwy	5.34	-	-	-	5.74 7.14
Critical Hdwy Stg 1	-	-	-	-	6.64 -
Critical Hdwy Stg 2	-	-	-	-	6.04 -
Follow-up Hdwy	3.12	-	-	-	3.82 3.92
Pot Cap-1 Maneuver	847	-	-	-	559 744
Stage 1	-	-	-	-	640 -
Stage 2	-	-	-	-	757 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	847	-	-	-	529 744
Mov Cap-2 Maneuver	-	-	-	-	529 -
Stage 1	-	-	-	-	606 -
Stage 2	-	-	-	-	757 -

Approach	EB	WB	SB
HCM Control Delay, s	1.5	0	11.8
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	847	-	-	-	-	744
HCM Lane V/C Ratio	0.053	-	-	-	-	0.294
HCM Control Delay (s)	9.5	-	-	-	0	11.8
HCM Lane LOS	A	-	-	-	A	B
HCM 95th %tile Q(veh)	0.2	-	-	-	-	1.2

Intersection												
Int Delay, s/veh	5.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↘	↑	↗	↘	↑	↗	↘	↑	↗	↘	↑	↗
Traffic Vol, veh/h	5	0	130	0	0	0	65	25	0	0	60	5
Future Vol, veh/h	5	0	130	0	0	0	65	25	0	0	60	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	Free	-	-	Free	-	-	None
Storage Length	350	-	350	350	-	-	350	-	350	350	-	350
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	5	0	141	0	0	0	71	27	0	0	65	5

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1	0	0	141	0	0	46	11	-	95	152	1
Stage 1	-	-	-	-	-	-	10	10	-	1	1	-
Stage 2	-	-	-	-	-	-	36	1	-	94	151	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	-	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	-	3.518	4.018	3.318
Pot Cap-1 Maneuver	1622	-	-	1442	-	0	955	884	0	888	740	1084
Stage 1	-	-	-	-	-	0	1011	887	0	1022	895	-
Stage 2	-	-	-	-	-	0	980	895	0	913	772	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1622	-	-	1442	-	-	884	881	-	865	738	1084
Mov Cap-2 Maneuver	-	-	-	-	-	-	884	881	-	865	738	-
Stage 1	-	-	-	-	-	-	1008	884	-	1019	895	-
Stage 2	-	-	-	-	-	-	904	895	-	882	770	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.3	0	9.3	10.2
HCM LOS			A	B

Minor Lane/Major Mvmt	NBLn1	NBLn2	NBLn3	EBL	EBT	EBR	WBL	WBT	SBLn1	SBLn2	SBLn3
Capacity (veh/h)	884	881	-	1622	-	-	1442	-	-	738	1084
HCM Lane V/C Ratio	0.08	0.031	-	0.003	-	-	-	-	-	0.088	0.005
HCM Control Delay (s)	9.4	9.2	0	7.2	-	-	0	-	0	10.4	8.3
HCM Lane LOS	A	A	A	A	-	-	A	-	A	B	A
HCM 95th %tile Q(veh)	0.3	0.1	-	0	-	-	0	-	-	0.3	0

Intersection						
Int Delay, s/veh	3.7					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↘	↗	↕	↗	↘	
Traffic Vol, veh/h	50	165	1085	30	90	0
Future Vol, veh/h	50	165	1085	30	90	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	-	325	-	-
Veh in Median Storage, #	0	-	0	-	-	16979
Grade, %	0	-	0	-	-	0
Peak Hour Factor	88	88	90	90	91	91
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	57	188	1206	33	99	0

Major/Minor	Minor1	Major1		
Conflicting Flow All	1206	603	0	0
Stage 1	1206	-	-	-
Stage 2	0	-	-	-
Critical Hdwy	6.84	6.94	-	-
Critical Hdwy Stg 1	5.84	-	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-
Pot Cap-1 Maneuver	176	442	-	-
Stage 1	246	-	-	-
Stage 2	-	-	-	-
Platoon blocked, %			-	-
Mov Cap-1 Maneuver	176	442	-	-
Mov Cap-2 Maneuver	176	-	-	-
Stage 1	246	-	-	-
Stage 2	-	-	-	-

Approach	WB	NB
HCM Control Delay, s	22.7	0
HCM LOS	C	

Minor Lane/Major Mvmt	NBT	NBRWBLn1	WBLn2
Capacity (veh/h)	-	-	176 442
HCM Lane V/C Ratio	-	-	0.323 0.424
HCM Control Delay (s)	-	-	34.9 19
HCM Lane LOS	-	-	D C
HCM 95th %tile Q(veh)	-	-	1.3 2.1

Intersection												
Int Delay, s/veh	7.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗		↖	↑	↗	↖	↑	↗
Traffic Vol, veh/h	10	0	45	25	20	75	0	5	60	180	5	5
Future Vol, veh/h	10	0	45	25	20	75	0	5	60	180	5	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	0	-	-	150	-	150	150	-	150
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	11	0	49	27	22	82	0	5	65	196	5	5

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	487	467	5	429	407	5	10	0	0	70	0	0
Stage 1	397	397	-	5	5	-	-	-	-	-	-	-
Stage 2	90	70	-	424	402	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	491	493	1078	536	533	1078	1610	-	-	1531	-	-
Stage 1	629	603	-	1017	892	-	-	-	-	-	-	-
Stage 2	917	837	-	608	600	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	395	430	1078	461	465	1078	1610	-	-	1531	-	-
Mov Cap-2 Maneuver	395	430	-	461	465	-	-	-	-	-	-	-
Stage 1	629	526	-	1017	892	-	-	-	-	-	-	-
Stage 2	827	837	-	506	523	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9.6	10.6	0	7.3
HCM LOS	A	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1610	-	-	395	1078	461	844	1531	-	-
HCM Lane V/C Ratio	-	-	-	0.028	0.045	0.059	0.122	0.128	-	-
HCM Control Delay (s)	0	-	-	14.4	8.5	13.3	9.9	7.7	-	-
HCM Lane LOS	A	-	-	B	A	B	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0.1	0.2	0.4	0.4	-	-

Intersection						
Int Delay, s/veh	0					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↖	↗	↖	↗	↗	↖
Traffic Vol, veh/h	65	0	0	0	0	30
Future Vol, veh/h	65	0	0	0	0	30
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	150	150	-	-	150
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	71	0	0	0	0	33

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	0	0	33	0	-	0
Stage 1	0	-	-	-	-	-
Stage 2	0	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	-	-	1579	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	-	1579	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s		0	0
HCM LOS	-		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1579	-	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-	-
HCM Control Delay (s)	0	-	-	0	-	-
HCM Lane LOS	A	-	-	A	-	-
HCM 95th %tile Q(veh)	0	-	-	-	-	-

Lanes, Volumes, Timings
1: Marksheffel & Dublin

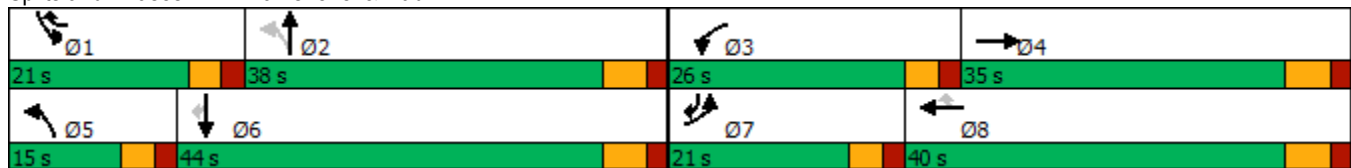
Short Term Background
PM Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	210	355	105	395	275	185	195	885	580	360	790	140
Future Volume (vph)	210	355	105	395	275	185	195	885	580	360	790	140
Satd. Flow (prot)	3433	3419	0	3433	1863	1583	1770	3539	1583	3433	3539	1583
Flt Permitted	0.950			0.950			0.207			0.950		
Satd. Flow (perm)	3433	3419	0	3433	1863	1583	386	3539	1583	3433	3539	1583
Satd. Flow (RTOR)		30				73			411			152
Peak Hour Factor	0.92	0.92	0.92	0.90	0.90	0.90	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	228	500	0	439	306	206	212	962	630	391	859	152
Turn Type	Prot	NA		Prot	NA	pm+ov	pm+pt	NA	Free	Prot	NA	pm+ov
Protected Phases	7	4		3	8	1	5	2		1	6	7
Permitted Phases						8	2		Free			6
Total Split (s)	21.0	35.0		26.0	40.0	21.0	15.0	38.0		21.0	44.0	21.0
Total Lost Time (s)	5.0	6.0		5.0	6.0	5.0	5.0	6.0		5.0	6.0	5.0
Act Effect Green (s)	12.4	20.6		18.2	26.3	47.8	43.8	32.8	109.1	15.5	38.2	56.7
Actuated g/C Ratio	0.11	0.19		0.17	0.24	0.44	0.40	0.30	1.00	0.14	0.35	0.52
v/c Ratio	0.58	0.75		0.77	0.68	0.28	0.75	0.90	0.40	0.80	0.69	0.17
Control Delay	52.9	46.7		53.7	46.1	13.3	37.9	50.8	0.8	60.0	35.1	2.9
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	52.9	46.7		53.7	46.1	13.3	37.9	50.8	0.8	60.0	35.1	2.9
LOS	D	D		D	D	B	D	D	A	E	D	A
Approach Delay		48.7			42.5			31.8			38.6	
Approach LOS		D			D			C			D	

Intersection Summary

Cycle Length: 120	
Actuated Cycle Length: 109.1	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.90	
Intersection Signal Delay: 38.3	Intersection LOS: D
Intersection Capacity Utilization 77.5%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 1: Marksheffel & Dublin



Lanes, Volumes, Timings
6: Marksheffel & Woodmen

Short Term Background
PM Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	200	1475	855	540	1035	200	595	270	510	200	250	125
Future Volume (vph)	200	1475	855	540	1035	200	595	270	510	200	250	125
Satd. Flow (prot)	3433	3539	1583	3433	3539	1583	3433	3539	1583	1770	3539	1583
Flt Permitted	0.950			0.950			0.950			0.573		
Satd. Flow (perm)	3433	3539	1583	3433	3539	1583	3433	3539	1583	1067	3539	1583
Satd. Flow (RTOR)			445			273			273			273
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.90	0.90	0.90
Shared Lane Traffic (%)												
Lane Group Flow (vph)	217	1603	929	587	1125	217	647	293	554	222	278	139
Turn Type	Prot	NA	Perm	Prot	NA	Free	Prot	NA	Free	pm+pt	NA	Free
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			Free			Free	4		Free
Total Split (s)	18.0	57.0	57.0	24.0	63.0		25.0	21.0		18.0	14.0	
Total Lost Time (s)	5.0	7.0	7.0	5.0	7.0		5.0	6.0		5.0	6.0	
Act Effect Green (s)	11.9	50.0	50.0	19.0	57.1	120.0	20.0	15.1	120.0	21.9	8.0	120.0
Actuated g/C Ratio	0.10	0.42	0.42	0.16	0.48	1.00	0.17	0.13	1.00	0.18	0.07	1.00
v/c Ratio	0.64	1.09	1.01	1.08	0.67	0.14	1.13	0.66	0.35	0.82	1.18	0.09
Control Delay	60.7	85.2	51.4	109.8	26.8	0.2	124.5	57.9	0.6	61.9	165.0	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	60.7	85.2	51.4	109.8	26.8	0.2	124.5	57.9	0.6	61.9	165.0	0.1
LOS	E	F	D	F	C	A	F	E	A	E	F	A
Approach Delay		71.8			49.1			65.5			93.3	
Approach LOS		E			D			E			F	

Intersection Summary

Cycle Length: 120	
Actuated Cycle Length: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.18	
Intersection Signal Delay: 66.0	Intersection LOS: E
Intersection Capacity Utilization 99.2%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 6: Marksheffel & Woodmen



Intersection						
Int Delay, s/veh	4.4					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↘	↑↑↑	↑↑↑	↗	↘	↗
Traffic Vol, veh/h	218	302	246	1	3	142
Future Vol, veh/h	218	302	246	1	3	142
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	240	-	-	245	245	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	90	90	86	86
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	237	328	273	1	3	165

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	274	0	-	0	878 137
Stage 1	-	-	-	-	273 -
Stage 2	-	-	-	-	605 -
Critical Hdwy	5.34	-	-	-	5.74 7.14
Critical Hdwy Stg 1	-	-	-	-	6.64 -
Critical Hdwy Stg 2	-	-	-	-	6.04 -
Follow-up Hdwy	3.12	-	-	-	3.82 3.92
Pot Cap-1 Maneuver	863	-	-	-	357 753
Stage 1	-	-	-	-	656 -
Stage 2	-	-	-	-	463 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	863	-	-	-	259 753
Mov Cap-2 Maneuver	-	-	-	-	259 -
Stage 1	-	-	-	-	476 -
Stage 2	-	-	-	-	463 -

Approach	EB	WB	SB
HCM Control Delay, s	4.5	0	11.3
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	863	-	-	-	259	753
HCM Lane V/C Ratio	0.275	-	-	-	0.013	0.219
HCM Control Delay (s)	10.7	-	-	-	19.1	11.1
HCM Lane LOS	B	-	-	-	C	B
HCM 95th %tile Q(veh)	1.1	-	-	-	0	0.8

Intersection												
Int Delay, s/veh	7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗	↖	↖	↗	↖	↖	↗	↖	↖	↗	↖
Traffic Vol, veh/h	5	0	85	0	0	0	135	60	0	0	40	5
Future Vol, veh/h	5	0	85	0	0	0	135	60	0	0	40	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	Free	-	-	Free	-	-	None
Storage Length	350	-	350	350	-	-	350	-	350	350	-	350
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	5	0	92	0	0	0	147	65	0	0	43	5

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1	0	0	92	0	0	35	11	-	90	103	1
Stage 1	-	-	-	-	-	-	10	10	-	1	1	-
Stage 2	-	-	-	-	-	-	25	1	-	89	102	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	-	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	-	3.518	4.018	3.318
Pot Cap-1 Maneuver	1622	-	-	1503	-	0	971	884	0	895	787	1084
Stage 1	-	-	-	-	-	0	1011	887	0	1022	895	-
Stage 2	-	-	-	-	-	0	993	895	0	918	811	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1622	-	-	1503	-	-	923	881	-	842	785	1084
Mov Cap-2 Maneuver	-	-	-	-	-	-	923	881	-	842	785	-
Stage 1	-	-	-	-	-	-	1008	884	-	1019	895	-
Stage 2	-	-	-	-	-	-	940	895	-	848	809	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.4	0	9.5	9.7
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	NBLn2	NBLn3	EBL	EBT	EBR	WBL	WBT	SBLn1	SBLn2	SBLn3
Capacity (veh/h)	923	881	-	1622	-	-	1503	-	-	785	1084
HCM Lane V/C Ratio	0.159	0.074	-	0.003	-	-	-	-	-	0.055	0.005
HCM Control Delay (s)	9.6	9.4	0	7.2	-	-	0	-	0	9.9	8.3
HCM Lane LOS	A	A	A	A	-	-	A	-	A	A	A
HCM 95th %tile Q(veh)	0.6	0.2	-	0	-	-	0	-	-	0.2	0

Intersection						
Int Delay, s/veh	3.2					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↘	↗	↕	↗	↘	
Traffic Vol, veh/h	40	150	1225	70	220	0
Future Vol, veh/h	40	150	1225	70	220	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	-	325	-	-
Veh in Median Storage, #	0	-	0	-	-	16979
Grade, %	0	-	0	-	-	0
Peak Hour Factor	89	89	92	92	91	91
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	45	169	1332	76	242	0

Major/Minor	Minor1	Major1	
Conflicting Flow All	1332	666	0
Stage 1	1332	-	-
Stage 2	0	-	-
Critical Hdwy	6.84	6.94	-
Critical Hdwy Stg 1	5.84	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	3.52	3.32	-
Pot Cap-1 Maneuver	146	402	-
Stage 1	211	-	-
Stage 2	-	-	-
Platoon blocked, %			-
Mov Cap-1 Maneuver	146	402	-
Mov Cap-2 Maneuver	146	-	-
Stage 1	211	-	-
Stage 2	-	-	-

Approach	WB	NB
HCM Control Delay, s	24.5	0
HCM LOS	C	

Minor Lane/Major Mvmt	NBT	NBRWBLn1WBLn2	
Capacity (veh/h)	-	-	146 402
HCM Lane V/C Ratio	-	-	0.308 0.419
HCM Control Delay (s)	-	-	40.3 20.3
HCM Lane LOS	-	-	E C
HCM 95th %tile Q(veh)	-	-	1.2 2

Intersection												
Int Delay, s/veh	8.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗		↖	↑	↗	↖	↑	↗
Traffic Vol, veh/h	10	30	0	60	45	180	0	5	40	115	5	5
Future Vol, veh/h	10	30	0	60	45	180	0	5	40	115	5	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	0	-	-	150	-	150	150	-	150
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	11	33	0	65	49	196	0	5	43	125	5	5

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	404	303	5	279	265	5	10	0	0	48	0	0
Stage 1	255	255	-	5	5	-	-	-	-	-	-	-
Stage 2	149	48	-	274	260	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	557	610	1078	673	640	1078	1610	-	-	1559	-	-
Stage 1	749	696	-	1017	892	-	-	-	-	-	-	-
Stage 2	854	855	-	732	693	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	401	561	1078	604	589	1078	1610	-	-	1559	-	-
Mov Cap-2 Maneuver	401	561	-	604	589	-	-	-	-	-	-	-
Stage 1	749	640	-	1017	892	-	-	-	-	-	-	-
Stage 2	661	855	-	639	638	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	12.4	10.6	0	6.9
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1610	-	-	401	561	604	924	1559	-	-
HCM Lane V/C Ratio	-	-	-	0.027	0.058	0.108	0.265	0.08	-	-
HCM Control Delay (s)	0	-	-	14.2	11.8	11.7	10.3	7.5	-	-
HCM Lane LOS	A	-	-	B	B	B	B	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0.2	0.4	1.1	0.3	-	-

Intersection						
Int Delay, s/veh	0					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↖	↗	↖	↗	↗	↖
Traffic Vol, veh/h	45	0	0	0	0	65
Future Vol, veh/h	45	0	0	0	0	65
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	150	150	-	-	150
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	49	0	0	0	0	71

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	0	0	71	0	-	0
Stage 1	0	-	-	-	-	-
Stage 2	0	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	-	-	1529	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	-	1529	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s		0	0
HCM LOS	-		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1529	-	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-	-
HCM Control Delay (s)	0	-	-	0	-	-
HCM Lane LOS	A	-	-	A	-	-
HCM 95th %tile Q(veh)	0	-	-	-	-	-

Lanes, Volumes, Timings
1: Marksheffel & Dublin

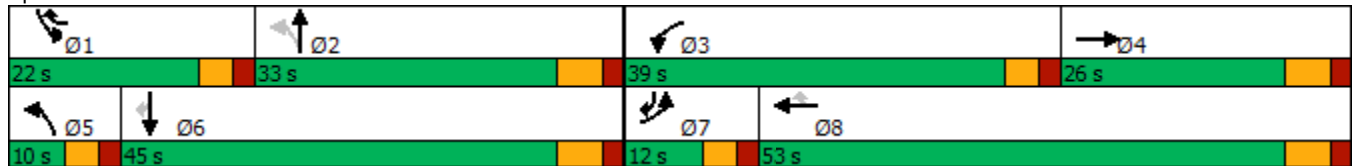
Short Term Total
AM Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	140	318	140	755	535	489	100	490	512	271	845	165
Future Volume (vph)	140	318	140	755	535	489	100	490	512	271	845	165
Satd. Flow (prot)	3433	3376	0	3433	1863	1583	1770	3539	1583	3433	3539	1583
Flt Permitted	0.950			0.950			0.158			0.950		
Satd. Flow (perm)	3433	3376	0	3433	1863	1583	294	3539	1583	3433	3539	1583
Satd. Flow (RTOR)		51				73			557			173
Peak Hour Factor	0.86	0.86	0.86	0.92	0.92	0.92	0.92	0.92	0.92	0.90	0.90	0.90
Shared Lane Traffic (%)												
Lane Group Flow (vph)	163	533	0	821	582	532	109	533	557	301	939	183
Turn Type	Prot	NA		Prot	NA	pm+ov	pm+pt	NA	Free	Prot	NA	pm+ov
Protected Phases	7	4		3	8	1	5	2		1	6	7
Permitted Phases						8	2		Free			6
Total Split (s)	12.0	26.0		39.0	53.0	22.0	10.0	33.0		22.0	45.0	12.0
Total Lost Time (s)	4.0	4.0		4.0	4.0	3.0	4.0	4.0		4.0	4.0	3.0
Act Effect Green (s)	8.0	21.1		32.2	45.3	66.2	37.1	31.1	116.4	16.0	41.1	54.1
Actuated g/C Ratio	0.07	0.18		0.28	0.39	0.57	0.32	0.27	1.00	0.14	0.35	0.46
v/c Ratio	0.69	0.82		0.87	0.80	0.57	0.64	0.56	0.35	0.64	0.75	0.22
Control Delay	69.8	52.8		50.7	41.2	15.8	42.2	40.8	0.6	54.5	38.4	4.1
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	69.8	52.8		50.7	41.2	15.8	42.2	40.8	0.6	54.5	38.4	4.1
LOS	E	D		D	D	B	D	D	A	D	D	A
Approach Delay		56.7			38.3			22.3			37.4	
Approach LOS		E			D			C			D	

Intersection Summary

Cycle Length: 120	
Actuated Cycle Length: 116.4	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.87	
Intersection Signal Delay: 36.8	Intersection LOS: D
Intersection Capacity Utilization 77.0%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 1: Marksheffel & Dublin



Lanes, Volumes, Timings
6: Marksheffel & Woodmen

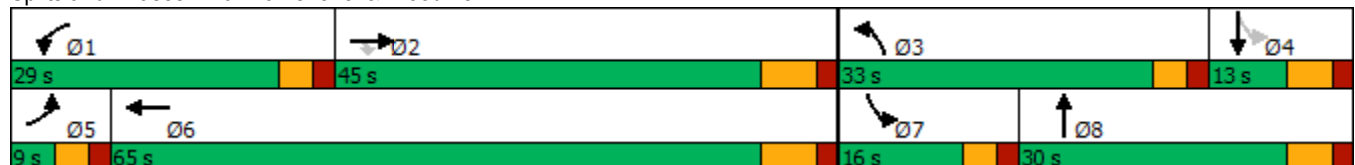
Short Term Total
AM Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	50	815	621	580	1750	100	772	226	396	125	230	150
Future Volume (vph)	50	815	621	580	1750	100	772	226	396	125	230	150
Satd. Flow (prot)	3433	3539	1583	3433	3539	1583	3433	3539	1583	1770	3539	1583
Flt Permitted	0.950			0.950			0.950			0.591		
Satd. Flow (perm)	3433	3539	1583	3433	3539	1583	3433	3539	1583	1101	3539	1583
Satd. Flow (RTOR)			520			273			455			273
Peak Hour Factor	0.91	0.91	0.91	0.92	0.92	0.92	0.87	0.87	0.87	0.87	0.87	0.87
Shared Lane Traffic (%)												
Lane Group Flow (vph)	55	896	682	630	1902	109	887	260	455	144	264	172
Turn Type	Prot	NA	Perm	Prot	NA	Free	Prot	NA	Free	pm+pt	NA	Free
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			Free			Free	4		Free
Total Split (s)	9.0	45.0	45.0	29.0	65.0		33.0	30.0		16.0	13.0	
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
Act Effect Green (s)	5.0	39.9	39.9	24.3	61.1	118.2	29.0	26.8	118.2	20.3	9.0	118.2
Actuated g/C Ratio	0.04	0.34	0.34	0.21	0.52	1.00	0.25	0.23	1.00	0.17	0.08	1.00
v/c Ratio	0.38	0.75	0.78	0.89	1.04	0.07	1.05	0.32	0.29	0.57	0.98	0.11
Control Delay	63.7	39.5	15.1	62.3	61.7	0.1	89.3	40.3	0.5	39.0	105.3	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	63.7	39.5	15.1	62.3	61.7	0.1	89.3	40.3	0.5	39.0	105.3	0.1
LOS	E	D	B	E	E	A	F	D	A	D	F	A
Approach Delay		30.1			59.3			56.1			57.7	
Approach LOS		C			E			E			E	

Intersection Summary

Cycle Length: 120	
Actuated Cycle Length: 118.2	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.05	
Intersection Signal Delay: 51.0	Intersection LOS: D
Intersection Capacity Utilization 93.4%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 6: Marksheffel & Woodmen



Intersection						
Int Delay, s/veh	2.9					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↘	↑↑↑	↑↑↑	↗	↘	↗
Traffic Vol, veh/h	41	376	567	0	0	190
Future Vol, veh/h	41	376	567	0	0	190
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	240	-	-	245	245	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	91	91	90	90	87	87
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	45	413	630	0	0	218

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	630	0	0	885	315
Stage 1	-	-	-	630	-
Stage 2	-	-	-	255	-
Critical Hdwy	5.34	-	-	5.74	7.14
Critical Hdwy Stg 1	-	-	-	6.64	-
Critical Hdwy Stg 2	-	-	-	6.04	-
Follow-up Hdwy	3.12	-	-	3.82	3.92
Pot Cap-1 Maneuver	588	-	-	354	581
Stage 1	-	-	-	404	-
Stage 2	-	-	-	701	-
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	588	-	-	327	581
Mov Cap-2 Maneuver	-	-	-	327	-
Stage 1	-	-	-	373	-
Stage 2	-	-	-	701	-

Approach	EB	WB	SB
HCM Control Delay, s	1.1	0	14.9
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	588	-	-	-	-	581
HCM Lane V/C Ratio	0.077	-	-	-	-	0.376
HCM Control Delay (s)	11.6	-	-	-	0	14.9
HCM Lane LOS	B	-	-	-	A	B
HCM 95th %tile Q(veh)	0.2	-	-	-	-	1.7

HCM 6th TWSC
3: Banning Lewis Parkway & Dublin

Short Term Total
AM Peak Hour

Intersection												
Int Delay, s/veh	9.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗	↖	↖	↗	↖	↖	↗	↖	↖	↗	↖
Traffic Vol, veh/h	24	45	217	6	55	0	259	39	0	0	99	60
Future Vol, veh/h	24	45	217	6	55	0	259	39	0	0	99	60
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	Free	-	-	Free	-	-	None
Storage Length	350	-	350	350	-	-	350	-	350	350	-	350
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	26	49	236	7	60	0	282	42	0	0	108	65

Major/Minor	Major1		Major2		Minor1		Minor2					
Conflicting Flow All	60	0	0	285	0	0	262	175	-	314	411	60
Stage 1	-	-	-	-	-	-	101	101	-	74	74	-
Stage 2	-	-	-	-	-	-	161	74	-	240	337	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	-	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	-	3.518	4.018	3.318
Pot Cap-1 Maneuver	1544	-	-	1277	-	0	691	718	0	639	531	1005
Stage 1	-	-	-	-	-	0	905	811	0	935	833	-
Stage 2	-	-	-	-	-	0	841	833	0	763	641	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1544	-	-	1277	-	-	534	702	-	599	519	1005
Mov Cap-2 Maneuver	-	-	-	-	-	-	534	702	-	599	519	-
Stage 1	-	-	-	-	-	-	890	797	-	919	829	-
Stage 2	-	-	-	-	-	-	681	829	-	710	630	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	0.6		0.8		17.9		11.9	
HCM LOS					C		B	

Minor Lane/Major Mvmt	NBLn1	NBLn2	NBLn3	EBL	EBT	EBR	WBL	WBT	SBLn1	SBLn2	SBLn3
Capacity (veh/h)	534	702	-	1544	-	-	1277	-	-	519	1005
HCM Lane V/C Ratio	0.527	0.06	-	0.017	-	-	0.005	-	-	0.207	0.065
HCM Control Delay (s)	19	10.5	0	7.4	-	-	7.8	-	0	13.7	8.8
HCM Lane LOS	C	B	A	A	-	-	A	-	A	B	A
HCM 95th %tile Q(veh)	3	0.2	-	0.1	-	-	0	-	-	0.8	0.2

Intersection						
Int Delay, s/veh	4.2					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↘	↗	↕↕	↗	↘	
Traffic Vol, veh/h	50	165	1229	30	90	0
Future Vol, veh/h	50	165	1229	30	90	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	-	325	-	-
Veh in Median Storage, #	0	-	0	-	-	16979
Grade, %	0	-	0	-	-	0
Peak Hour Factor	88	88	90	90	91	91
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	57	188	1366	33	99	0

Major/Minor	Minor1	Major1		
Conflicting Flow All	1366	683	0	0
Stage 1	1366	-	-	-
Stage 2	0	-	-	-
Critical Hdwy	6.84	6.94	-	-
Critical Hdwy Stg 1	5.84	-	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-
Pot Cap-1 Maneuver	138	392	-	-
Stage 1	202	-	-	-
Stage 2	-	-	-	-
Platoon blocked, %			-	-
Mov Cap-1 Maneuver	138	392	-	-
Mov Cap-2 Maneuver	138	-	-	-
Stage 1	202	-	-	-
Stage 2	-	-	-	-

Approach	WB	NB
HCM Control Delay, s	28.3	0
HCM LOS	D	

Minor Lane/Major Mvmt	NBT	NBRWBLn1	WBLn2
Capacity (veh/h)	-	-	138 392
HCM Lane V/C Ratio	-	-	0.412 0.478
HCM Control Delay (s)	-	-	48.2 22.3
HCM Lane LOS	-	-	E C
HCM 95th %tile Q(veh)	-	-	1.8 2.5

HCM 6th TWSC
8: Banning Lewis Parkway & North Access

Short Term Total
AM Peak Hour

Intersection												
Int Delay, s/veh	7.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗		↖	↑↑	↖	↖	↑↑	↖
Traffic Vol, veh/h	0	0	65	94	0	0	30	3	30	0	0	0
Future Vol, veh/h	0	0	65	94	0	0	30	3	30	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	150	-	-	150	-	-	150	-	150	150	-	150
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	71	102	0	0	33	3	33	0	0	0

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	69	103	1	70	70	2	1	0	0	36	0	0
Stage 1	1	1	-	69	69	-	-	-	-	-	-	-
Stage 2	68	102	-	1	1	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	915	786	1083	914	820	1081	1620	-	-	1573	-	-
Stage 1	1021	895	-	933	837	-	-	-	-	-	-	-
Stage 2	934	810	-	1021	895	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	900	770	1083	841	804	1081	1620	-	-	1573	-	-
Mov Cap-2 Maneuver	900	770	-	841	804	-	-	-	-	-	-	-
Stage 1	1001	895	-	914	820	-	-	-	-	-	-	-
Stage 2	915	794	-	954	895	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	8.6		9.9		3.5		0	
HCM LOS	A		A					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1620	-	-	-	1083	841	-	1573	-	-
HCM Lane V/C Ratio	0.02	-	-	-	0.065	0.121	-	-	-	-
HCM Control Delay (s)	7.3	-	-	0	8.6	9.9	0	0	-	-
HCM Lane LOS	A	-	-	A	A	A	A	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	-	0.2	0.4	-	0	-	-

HCM 6th TWSC
 22: Banning Lewis Parkway & Access

Short Term Total
 AM Peak Hour

Intersection												
Int Delay, s/veh	8.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗		↖	↑	↗	↖	↑	↗
Traffic Vol, veh/h	10	45	0	25	20	179	0	118	60	273	44	5
Future Vol, veh/h	10	45	0	25	20	179	0	118	60	273	44	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	150	-	-	150	-	-	150	-	150	150	-	150
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	11	49	0	27	22	195	0	128	65	297	48	5

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	911	835	48	797	775	128	53	0	0	193	0	0
Stage 1	642	642	-	128	128	-	-	-	-	-	-	-
Stage 2	269	193	-	669	647	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	255	304	1021	305	329	922	1553	-	-	1380	-	-
Stage 1	463	469	-	876	790	-	-	-	-	-	-	-
Stage 2	737	741	-	447	467	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	157	239	1021	216	258	922	1553	-	-	1380	-	-
Mov Cap-2 Maneuver	157	239	-	216	258	-	-	-	-	-	-	-
Stage 1	463	368	-	876	790	-	-	-	-	-	-	-
Stage 2	565	741	-	304	367	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	24.9		13.4		0		7.1	
HCM LOS	C		B					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1553	-	-	157	239	216	733	1380	-	-
HCM Lane V/C Ratio	-	-	-	0.069	0.205	0.126	0.295	0.215	-	-
HCM Control Delay (s)	0	-	-	29.6	23.9	24.1	12	8.3	-	-
HCM Lane LOS	A	-	-	D	C	C	B	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.2	0.7	0.4	1.2	0.8	-	-

HCM 6th TWSC
 23: Banning Lewis Parkway & South Access

Short Term Total
 AM Peak Hour

Intersection												
Int Delay, s/veh	0											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↶	↷		↶	↷		↶	↷	↶	↷	↶	↷
Traffic Vol, veh/h	65	0	0	0	0	113	0	0	0	39	0	30
Future Vol, veh/h	65	0	0	0	0	113	0	0	0	39	0	30
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	150	-	-	150	-	-	150	-	150	150	-	150
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	71	0	0	0	0	123	0	0	0	42	0	33

Major/Minor	Minor2		Minor1			Major1		Major2				
Conflicting Flow All	146	84	0	101	117	0	33	0	0	0	0	0
Stage 1	84	84	-	0	0	-	-	-	-	-	-	-
Stage 2	62	0	-	101	117	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	823	806	-	880	773	-	1579	-	-	-	-	-
Stage 1	924	825	-	-	-	-	-	-	-	-	-	-
Stage 2	949	-	-	905	799	-	-	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	806	-	-	773	-	1579	-	-	-	-	-
Mov Cap-2 Maneuver	-	806	-	-	773	-	-	-	-	-	-	-
Stage 1	924	825	-	-	-	-	-	-	-	-	-	-
Stage 2	949	-	-	905	799	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0			
HCM LOS	-			

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1579	-	-	-	-	-	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-	-	-	-	-	-
HCM Control Delay (s)	0	-	-	-	0	0	-	-	-	-
HCM Lane LOS	A	-	-	-	A	A	-	-	-	-
HCM 95th %tile Q(veh)	0	-	-	-	-	-	-	-	-	-

HCM 6th TWSC
 25: Banning Lewis Parkway & Commercial RIRO

Short Term Total
 AM Peak Hour

Intersection						
Int Delay, s/veh	0					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↗	↗	↗		↗
Traffic Vol, veh/h	0	3	295	12	0	322
Future Vol, veh/h	0	3	295	12	0	322
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	150	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	3	321	13	0	350

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	-	321	0	0	-
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-
Critical Hdwy	-	6.22	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-
Follow-up Hdwy	-	3.318	-	-	-
Pot Cap-1 Maneuver	0	720	-	-	0
Stage 1	0	-	-	-	0
Stage 2	0	-	-	-	0
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	-	720	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-

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

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBT
Capacity (veh/h)	-	-	720
HCM Lane V/C Ratio	-	-	0.005
HCM Control Delay (s)	-	-	10
HCM Lane LOS	-	-	B
HCM 95th %tile Q(veh)	-	-	0

Lanes, Volumes, Timings
1: Marksheffel & Dublin

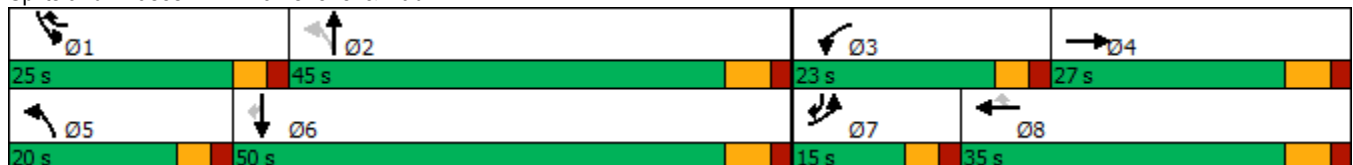
Short Term Total
PM Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	210	461	105	430	343	278	195	885	635	500	790	140
Future Volume (vph)	210	461	105	430	343	278	195	885	635	500	790	140
Satd. Flow (prot)	3433	3440	0	3433	1863	1583	1770	3539	1583	3433	3539	1583
Flt Permitted	0.950			0.950			0.234			0.950		
Satd. Flow (perm)	3433	3440	0	3433	1863	1583	436	3539	1583	3433	3539	1583
Satd. Flow (RTOR)		20				73			450			152
Peak Hour Factor	0.92	0.92	0.92	0.90	0.90	0.90	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	228	615	0	478	381	309	212	962	690	543	859	152
Turn Type	Prot	NA		Prot	NA	pm+ov	pm+pt	NA	Free	Prot	NA	pm+ov
Protected Phases	7	4		3	8	1	5	2		1	6	7
Permitted Phases						8	2		Free			6
Total Split (s)	15.0	27.0		23.0	35.0	25.0	20.0	45.0		25.0	50.0	15.0
Total Lost Time (s)	5.0	6.0		5.0	6.0	5.0	5.0	6.0		5.0	6.0	5.0
Act Effect Green (s)	10.0	21.0		18.0	29.0	55.0	52.6	39.0	120.0	20.0	46.4	62.4
Actuated g/C Ratio	0.08	0.18		0.15	0.24	0.46	0.44	0.32	1.00	0.17	0.39	0.52
v/c Ratio	0.80	1.00		0.93	0.85	0.40	0.64	0.84	0.44	0.95	0.63	0.17
Control Delay	74.6	83.1		76.3	61.7	18.0	25.0	45.3	0.9	76.8	32.7	2.9
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	74.6	83.1		76.3	61.7	18.0	25.0	45.3	0.9	76.8	32.7	2.9
LOS	E	F		E	E	B	C	D	A	E	C	A
Approach Delay		80.8			56.1			26.5			45.2	
Approach LOS		F			E			C			D	

Intersection Summary

Cycle Length: 120	
Actuated Cycle Length: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.00	
Intersection Signal Delay: 46.7	Intersection LOS: D
Intersection Capacity Utilization 85.4%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 1: Marksheffel & Dublin



Lanes, Volumes, Timings
6: Marksheffel & Woodmen

Short Term Total
PM Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	200	1475	948	541	1035	200	654	303	511	200	276	100
Future Volume (vph)	200	1475	948	541	1035	200	654	303	511	200	276	100
Satd. Flow (prot)	3433	3539	1583	3433	3539	1583	3433	3539	1583	1770	3539	1583
Flt Permitted	0.950			0.950			0.950			0.553		
Satd. Flow (perm)	3433	3539	1583	3433	3539	1583	3433	3539	1583	1030	3539	1583
Satd. Flow (RTOR)			473			227			258			227
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.90	0.90	0.90
Shared Lane Traffic (%)												
Lane Group Flow (vph)	217	1603	1030	588	1125	217	711	329	555	222	307	111
Turn Type	Prot	NA	Perm	Prot	NA	Free	Prot	NA	Free	pm+pt	NA	Free
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			Free			Free	4		Free
Total Split (s)	18.0	58.0	58.0	22.0	62.0		26.0	22.0		18.0	14.0	
Total Lost Time (s)	5.0	7.0	7.0	5.0	7.0		5.0	6.0		5.0	6.0	
Act Effect Green (s)	11.9	51.0	51.0	17.0	56.1	120.0	21.0	16.0	120.0	22.0	8.0	120.0
Actuated g/C Ratio	0.10	0.42	0.42	0.14	0.47	1.00	0.18	0.13	1.00	0.18	0.07	1.00
v/c Ratio	0.64	1.07	1.09	1.21	0.68	0.14	1.19	0.70	0.35	0.83	1.31	0.07
Control Delay	60.7	76.9	76.6	156.2	27.8	0.2	142.5	58.3	0.6	62.0	208.7	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	60.7	76.9	76.6	156.2	27.8	0.2	142.5	58.3	0.6	62.0	208.7	0.1
LOS	E	E	E	F	C	A	F	E	A	E	F	A
Approach Delay		75.6			63.8			75.8			121.6	
Approach LOS		E			E			E			F	

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 120
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 1.31
 Intersection Signal Delay: 76.6
 Intersection LOS: E
 Intersection Capacity Utilization 101.7%
 ICU Level of Service G
 Analysis Period (min) 15

Splits and Phases: 6: Marksheffel & Woodmen



Intersection						
Int Delay, s/veh	3.3					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↘	↑↑↑	↑↑↑	↗	↘	↗
Traffic Vol, veh/h	218	608	441	1	3	142
Future Vol, veh/h	218	608	441	1	3	142
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	240	-	-	245	245	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	90	90	86	86
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	237	661	490	1	3	165

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	491	0	-	0	1228 245
Stage 1	-	-	-	-	490 -
Stage 2	-	-	-	-	738 -
Critical Hdwy	5.34	-	-	-	5.74 7.14
Critical Hdwy Stg 1	-	-	-	-	6.64 -
Critical Hdwy Stg 2	-	-	-	-	6.04 -
Follow-up Hdwy	3.12	-	-	-	3.82 3.92
Pot Cap-1 Maneuver	684	-	-	-	238 644
Stage 1	-	-	-	-	490 -
Stage 2	-	-	-	-	394 -
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	684	-	-	-	156 644
Mov Cap-2 Maneuver	-	-	-	-	156 -
Stage 1	-	-	-	-	320 -
Stage 2	-	-	-	-	394 -

Approach	EB	WB	SB
HCM Control Delay, s	3.4	0	12.8
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	684	-	-	-	156	644
HCM Lane V/C Ratio	0.346	-	-	-	0.022	0.256
HCM Control Delay (s)	13	-	-	-	28.6	12.5
HCM Lane LOS	B	-	-	-	D	B
HCM 95th %tile Q(veh)	1.5	-	-	-	0.1	1

HCM 6th TWSC
3: Banning Lewis Parkway & Dublin

Short Term Total
PM Peak Hour

Intersection												
Int Delay, s/veh	10.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗	↖	↖	↗	↖	↖	↗	↖	↖	↗	↖
Traffic Vol, veh/h	68	69	259	21	39	0	256	105	0	0	66	40
Future Vol, veh/h	68	69	259	21	39	0	256	105	0	0	66	40
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	Free	-	-	Free	-	-	None
Storage Length	350	-	350	350	-	-	350	-	350	350	-	350
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	74	75	282	23	42	0	278	114	0	0	72	43

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	42	0	0	357	0	0	369	311	-	509	593	42
Stage 1	-	-	-	-	-	-	223	223	-	88	88	-
Stage 2	-	-	-	-	-	-	146	88	-	421	505	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	-	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	-	3.518	4.018	3.318
Pot Cap-1 Maneuver	1567	-	-	1202	-	0	588	604	0	475	418	1029
Stage 1	-	-	-	-	-	0	780	719	0	920	822	-
Stage 2	-	-	-	-	-	0	857	822	0	610	540	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1567	-	-	1202	-	-	460	565	-	382	391	1029
Mov Cap-2 Maneuver	-	-	-	-	-	-	460	565	-	382	391	-
Stage 1	-	-	-	-	-	-	743	685	-	877	806	-
Stage 2	-	-	-	-	-	-	733	806	-	484	515	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	1.3			2.8			20.9			13.4		
HCM LOS							C			B		

Minor Lane/Major Mvmt	NBLn1	NBLn2	NBLn3	EBL	EBT	EBR	WBL	WBT	SBLn1	SBLn2	SBLn3
Capacity (veh/h)	460	565	-	1567	-	-	1202	-	-	391	1029
HCM Lane V/C Ratio	0.605	0.202	-	0.047	-	-	0.019	-	-	0.183	0.042
HCM Control Delay (s)	24.1	13	0	7.4	-	-	8.1	-	0	16.3	8.7
HCM Lane LOS	C	B	A	A	-	-	A	-	A	C	A
HCM 95th %tile Q(veh)	3.9	0.7	-	0.1	-	-	0.1	-	-	0.7	0.1

Intersection						
Int Delay, s/veh	3.5					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↘	↗	↕	↗	↘	
Traffic Vol, veh/h	40	150	1318	70	220	0
Future Vol, veh/h	40	150	1318	70	220	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	-	325	-	-
Veh in Median Storage, #	0	-	0	-	-	16979
Grade, %	0	-	0	-	-	0
Peak Hour Factor	89	89	92	92	91	91
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	45	169	1433	76	242	0

Major/Minor	Minor1	Major1		
Conflicting Flow All	1433	717	0	0
Stage 1	1433	-	-	-
Stage 2	0	-	-	-
Critical Hdwy	6.84	6.94	-	-
Critical Hdwy Stg 1	5.84	-	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-
Pot Cap-1 Maneuver	125	372	-	-
Stage 1	186	-	-	-
Stage 2	-	-	-	-
Platoon blocked, %			-	-
Mov Cap-1 Maneuver	125	372	-	-
Mov Cap-2 Maneuver	125	-	-	-
Stage 1	186	-	-	-
Stage 2	-	-	-	-

Approach	WB	NB
HCM Control Delay, s	28	0
HCM LOS	D	

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2
Capacity (veh/h)	-	-	125	372
HCM Lane V/C Ratio	-	-	0.36	0.453
HCM Control Delay (s)	-	-	49.2	22.4
HCM Lane LOS	-	-	E	C
HCM 95th %tile Q(veh)	-	-	1.5	2.3

HCM 6th TWSC
 8: Banning Lewis Parkway & North Access

Short Term Total
 PM Peak Hour

Intersection												
Int Delay, s/veh	5.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↵	↵		↵	↵		↵	↑↑	↵	↵	↑↑	↵
Traffic Vol, veh/h	0	0	45	61	0	0	65	11	97	0	0	0
Future Vol, veh/h	0	0	45	61	0	0	65	11	97	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	150	-	-	150	-	-	150	-	150	150	-	150
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	49	66	0	0	71	12	105	0	0	0

Major/Minor	Minor2		Minor1			Major1			Major2			
Conflicting Flow All	149	260	1	155	155	6	1	0	0	117	0	0
Stage 1	1	1	-	154	154	-	-	-	-	-	-	-
Stage 2	148	259	-	1	1	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	804	643	1083	797	736	1075	1620	-	-	1469	-	-
Stage 1	1021	895	-	833	769	-	-	-	-	-	-	-
Stage 2	840	692	-	1021	895	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	777	615	1083	736	704	1075	1620	-	-	1469	-	-
Mov Cap-2 Maneuver	777	615	-	736	704	-	-	-	-	-	-	-
Stage 1	976	895	-	796	735	-	-	-	-	-	-	-
Stage 2	803	662	-	975	895	-	-	-	-	-	-	-

Approach	EB		WB			NB			SB		
HCM Control Delay, s	8.5		10.4			2.8			0		
HCM LOS	A		B								

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1620	-	-	-	1083	736	-	1469	-	-
HCM Lane V/C Ratio	0.044	-	-	-	0.045	0.09	-	-	-	-
HCM Control Delay (s)	7.3	-	-	0	8.5	10.4	0	0	-	-
HCM Lane LOS	A	-	-	A	A	B	A	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	-	0.1	0.3	-	0	-	-

HCM 6th TWSC
22: Banning Lewis Parkway & Access

Short Term Total
PM Peak Hour

Intersection												
Int Delay, s/veh	9.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗		↖	↗	↖	↗	↖	↗
Traffic Vol, veh/h	10	30	0	60	45	291	0	74	40	223	119	5
Future Vol, veh/h	10	30	0	60	45	291	0	74	40	223	119	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	150	-	-	150	-	-	150	-	150	150	-	150
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	11	33	0	65	49	316	0	80	43	242	129	5

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	897	736	129	712	698	80	134	0	0	123	0	0
Stage 1	613	613	-	80	80	-	-	-	-	-	-	-
Stage 2	284	123	-	632	618	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	261	346	921	347	364	980	1451	-	-	1464	-	-
Stage 1	480	483	-	929	828	-	-	-	-	-	-	-
Stage 2	723	794	-	468	481	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	136	289	921	278	304	980	1451	-	-	1464	-	-
Mov Cap-2 Maneuver	136	289	-	278	304	-	-	-	-	-	-	-
Stage 1	480	403	-	929	828	-	-	-	-	-	-	-
Stage 2	461	794	-	359	402	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	22.7	15.4	0	5.1
HCM LOS	C	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1451	-	-	136	289	278	755	1464	-	-
HCM Lane V/C Ratio	-	-	-	0.08	0.113	0.235	0.484	0.166	-	-
HCM Control Delay (s)	0	-	-	33.8	19	21.9	14.2	7.9	-	-
HCM Lane LOS	A	-	-	D	C	C	B	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.3	0.4	0.9	2.7	0.6	-	-

HCM 6th TWSC
 23: Banning Lewis Parkway & South Access

Short Term Total
 PM Peak Hour

Intersection												
Int Delay, s/veh	0											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗		↖	↑	↗	↖	↑	↗
Traffic Vol, veh/h	45	0	0	0	0	69	0	0	0	114	0	65
Future Vol, veh/h	45	0	0	0	0	69	0	0	0	114	0	65
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	150	-	-	150	-	-	150	-	150	150	-	150
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	49	0	0	0	0	75	0	0	0	124	0	71

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	286	248	0	284	319	0	71	0	0	0	0	0
Stage 1	248	248	-	0	0	-	-	-	-	-	-	-
Stage 2	38	0	-	284	319	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	666	655	-	668	598	-	1529	-	-	-	-	-
Stage 1	756	701	-	-	-	-	-	-	-	-	-	-
Stage 2	977	-	-	723	653	-	-	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	655	-	-	598	-	1529	-	-	-	-	-
Mov Cap-2 Maneuver	-	655	-	-	598	-	-	-	-	-	-	-
Stage 1	756	701	-	-	-	-	-	-	-	-	-	-
Stage 2	977	-	-	723	653	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0			
HCM LOS	-			

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1529	-	-	-	-	-	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-	-	-	-	-	-
HCM Control Delay (s)	0	-	-	-	0	0	-	-	-	-
HCM Lane LOS	A	-	-	-	A	A	-	-	-	-
HCM 95th %tile Q(veh)	0	-	-	-	-	-	-	-	-	-

HCM 6th TWSC
 25: Banning Lewis Parkway & Commercial RIRO

Short Term Total
 PM Peak Hour

Intersection						
Int Delay, s/veh	0.2					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↗	↗	↗		↗
Traffic Vol, veh/h	0	12	350	25	0	346
Future Vol, veh/h	0	12	350	25	0	346
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	150	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	13	380	27	0	376

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	-	380	0	0	-
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-
Critical Hdwy	-	6.22	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-
Follow-up Hdwy	-	3.318	-	-	-
Pot Cap-1 Maneuver	0	667	-	-	0
Stage 1	0	-	-	-	0
Stage 2	0	-	-	-	0
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	-	667	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.5	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBT
Capacity (veh/h)	-	-	667
HCM Lane V/C Ratio	-	-	0.02
HCM Control Delay (s)	-	-	10.5
HCM Lane LOS	-	-	B
HCM 95th %tile Q(veh)	-	-	0.1

Lanes, Volumes, Timings
1: Marksheffel & Dublin

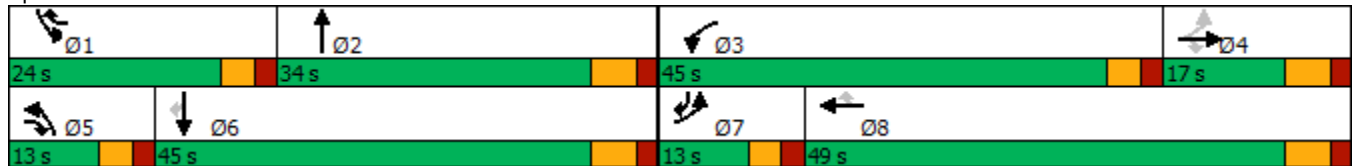
Long Term Total
AM Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	175	348	350	1105	530	508	175	590	784	312	1085	215
Future Volume (vph)	175	348	350	1105	530	508	175	590	784	312	1085	215
Satd. Flow (prot)	3433	3539	1583	3433	3539	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.435			0.950			0.950			0.950		
Satd. Flow (perm)	1572	3539	1583	3433	3539	1583	3433	3539	1583	3433	3539	1583
Satd. Flow (RTOR)			164			73			794			125
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	190	378	380	1201	576	552	190	641	852	339	1179	234
Turn Type	pm+pt	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	Free	Prot	NA	pm+ov
Protected Phases	7	4	5	3	8	1	5	2		1	6	7
Permitted Phases	4		4			8			Free			6
Total Split (s)	13.0	17.0	13.0	45.0	49.0	24.0	13.0	34.0		24.0	45.0	13.0
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
Act Effect Green (s)	21.8	13.0	26.0	41.0	45.2	67.1	9.0	32.1	120.0	17.9	41.0	53.8
Actuated g/C Ratio	0.18	0.11	0.22	0.34	0.38	0.56	0.08	0.27	1.00	0.15	0.34	0.45
v/c Ratio	0.45	0.99	0.81	1.02	0.43	0.60	0.74	0.68	0.54	0.66	0.98	0.30
Control Delay	26.8	96.5	39.4	72.0	29.2	18.0	72.0	44.1	1.3	54.5	59.9	10.5
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	26.8	96.5	39.4	72.0	29.2	18.0	72.0	44.1	1.3	54.5	59.9	10.5
LOS	C	F	D	E	C	B	E	D	A	D	E	B
Approach Delay		59.6			48.6			25.6			52.3	
Approach LOS		E			D			C			D	

Intersection Summary

Cycle Length: 120	
Actuated Cycle Length: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.02	
Intersection Signal Delay: 45.3	Intersection LOS: D
Intersection Capacity Utilization 93.2%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 1: Marksheffel & Dublin



Lanes, Volumes, Timings
3: Banning Lewis Parkway & Dublin

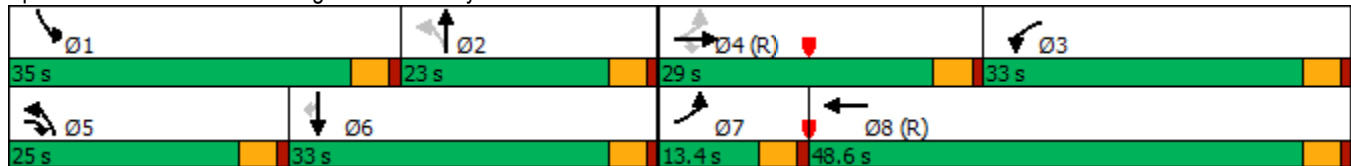
Long Term Total
AM Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	79	431	263	551	610	567	292	423	338	417	313	114
Future Volume (vph)	79	431	263	551	610	567	292	423	338	417	313	114
Satd. Flow (prot)	1770	3539	1583	3433	3539	1583	1770	3539	1583	3433	3539	1583
Flt Permitted	0.171			0.950			0.422			0.950		
Satd. Flow (perm)	319	3539	1583	3433	3539	1583	786	3539	1583	3433	3539	1583
Satd. Flow (RTOR)			100			582			367			136
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	86	468	286	599	663	616	317	460	367	453	340	124
Turn Type	pm+pt	NA	pm+ov	Prot	NA	Free	pm+pt	NA	Free	Prot	NA	Perm
Protected Phases	7	4	5	3	8		5	2		1	6	
Permitted Phases	4		4			Free	2		Free			6
Total Split (s)	13.4	29.0	25.0	33.0	48.6		25.0	23.0		35.0	33.0	33.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	4.0
Act Effect Green (s)	32.4	32.4	52.1	29.0	54.2	120.0	40.8	21.0	120.0	21.6	22.9	22.9
Actuated g/C Ratio	0.27	0.27	0.43	0.24	0.45	1.00	0.34	0.18	1.00	0.18	0.19	0.19
v/c Ratio	0.43	0.49	0.38	0.72	0.42	0.39	0.74	0.74	0.23	0.73	0.50	0.30
Control Delay	43.5	40.4	9.4	29.2	11.8	0.9	38.1	54.5	0.3	53.6	45.4	6.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	43.5	40.4	9.4	29.2	11.8	0.9	38.1	54.5	0.3	53.6	45.4	6.9
LOS	D	D	A	C	B	A	D	D	A	D	D	A
Approach Delay		30.2			13.8			32.6			44.3	
Approach LOS		C			B			C			D	

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 80 (67%), Referenced to phase 4:EBTL and 8:WBT, Start of Green
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.74
 Intersection Signal Delay: 27.0
 Intersection LOS: C
 Intersection Capacity Utilization 65.8%
 ICU Level of Service C
 Analysis Period (min) 15

Splits and Phases: 3: Banning Lewis Parkway & Dublin



Lanes, Volumes, Timings
4: West Access & Dublin

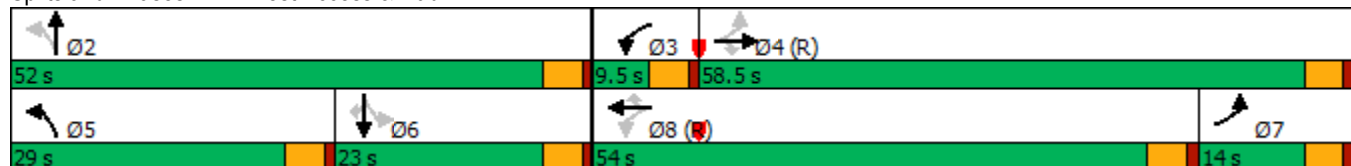
Long Term Total
AM Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	120	623	259	0	995	0	365	5	0	0	5	236
Future Volume (vph)	120	623	259	0	995	0	365	5	0	0	5	236
Satd. Flow (prot)	1770	3539	1583	1863	3539	1863	1770	1863	0	1863	1863	1583
Flt Permitted	0.125						0.632					
Satd. Flow (perm)	233	3539	1583	1863	3539	1863	1177	1863	0	1863	1863	1583
Satd. Flow (RTOR)			282									222
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	130	677	282	0	1082	0	397	5	0	0	5	257
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA		Perm	NA	Perm
Protected Phases	7	4		3	8		5	2			6	
Permitted Phases	4		4	8		8	2			6		6
Total Split (s)	14.0	58.5	58.5	9.5	54.0	54.0	29.0	52.0		23.0	23.0	23.0
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
Act Effect Green (s)	64.0	64.0	64.0		50.0		48.0	48.0			20.7	20.7
Actuated g/C Ratio	0.53	0.53	0.53		0.42		0.40	0.40			0.17	0.17
v/c Ratio	0.52	0.36	0.29		0.73		0.68	0.01			0.02	0.56
Control Delay	30.5	15.1	5.6		29.4		34.8	21.8			43.0	14.5
Queue Delay	0.0	0.0	0.0		0.0		0.0	0.0			0.0	0.0
Total Delay	30.5	15.1	5.6		29.4		34.8	21.8			43.0	14.5
LOS	C	B	A		C		C	C			D	B
Approach Delay		14.5			29.4			34.6			15.0	
Approach LOS		B			C			C			B	

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 40 (33%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.73
 Intersection Signal Delay: 23.1
 Intersection LOS: C
 Intersection Capacity Utilization 72.3%
 ICU Level of Service C
 Analysis Period (min) 15

Splits and Phases: 4: West Access & Dublin



Lanes, Volumes, Timings
6: Marksheffel & Woodmen

Long Term Total
AM Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	175	1402	540	335	2728	435	330	810	385	425	737	250
Future Volume (vph)	175	1402	540	335	2728	435	330	810	385	425	737	250
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Satd. Flow (RTOR)			473			227			352			227
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	190	1524	587	364	2965	473	359	880	418	462	801	272
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
Total Split (s)	9.0	53.0		19.0	63.0		17.0	30.0		18.0	31.0	
Total Lost Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Act Effect Green (s)	5.0	49.0	120.0	15.0	59.0	120.0	13.0	26.0	120.0	14.0	27.0	120.0
Actuated g/C Ratio	0.04	0.41	1.00	0.12	0.49	1.00	0.11	0.22	1.00	0.12	0.22	1.00
v/c Ratio	1.33	0.73	0.37	0.85	1.19	0.30	0.97	1.15	0.26	1.16	1.01	0.17
Control Delay	231.7	32.6	0.7	70.2	117.7	0.5	92.8	124.2	0.4	141.2	79.9	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	231.7	32.6	0.7	70.2	117.7	0.5	92.8	124.2	0.4	141.2	79.9	0.2
LOS	F	C	A	E	F	A	F	F	A	F	E	A
Approach Delay		40.9			98.5			86.2			84.3	
Approach LOS		D			F			F			F	

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 120
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 1.33
 Intersection Signal Delay: 79.7
 Intersection Capacity Utilization 105.5%
 Analysis Period (min) 15
 Intersection LOS: E
 ICU Level of Service G

Splits and Phases: 6: Marksheffel & Woodmen



Intersection						
Int Delay, s/veh	14.9					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↘	↗	↕	↗	↘	
Traffic Vol, veh/h	90	315	1210	60	175	0
Future Vol, veh/h	90	315	1210	60	175	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	-	325	-	-
Veh in Median Storage, #	0	-	0	-	-	16979
Grade, %	0	-	0	-	-	0
Peak Hour Factor	88	88	90	90	91	91
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	102	358	1344	67	192	0

Major/Minor	Minor1	Major1		
Conflicting Flow All	1344	672	0	0
Stage 1	1344	-	-	-
Stage 2	0	-	-	-
Critical Hdwy	6.84	6.94	-	-
Critical Hdwy Stg 1	5.84	-	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-
Pot Cap-1 Maneuver	143	398	-	-
Stage 1	208	-	-	-
Stage 2	-	-	-	-
Platoon blocked, %			-	-
Mov Cap-1 Maneuver	143	398	-	-
Mov Cap-2 Maneuver	143	-	-	-
Stage 1	208	-	-	-
Stage 2	-	-	-	-

Approach	WB	NB
HCM Control Delay, s	60.6	0
HCM LOS	F	

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2
Capacity (veh/h)	-	-	143	398
HCM Lane V/C Ratio	-	-	0.715	0.899
HCM Control Delay (s)	-	-	76.6	56
HCM Lane LOS	-	-	F	F
HCM 95th %tile Q(veh)	-	-	4.2	9.3

Intersection						
Int Delay, s/veh	0.1					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↗	↕	↗		↕
Traffic Vol, veh/h	0	14	1039	40	0	1127
Future Vol, veh/h	0	14	1039	40	0	1127
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	150	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	15	1129	43	0	1225

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	-	565	0	0	-
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-
Critical Hdwy	-	6.94	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-
Follow-up Hdwy	-	3.32	-	-	-
Pot Cap-1 Maneuver	0	468	-	-	0
Stage 1	0	-	-	-	0
Stage 2	0	-	-	-	0
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	-	468	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-

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

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBT
Capacity (veh/h)	-	-	468
HCM Lane V/C Ratio	-	-	0.033
HCM Control Delay (s)	-	-	13
HCM Lane LOS	-	-	B
HCM 95th %tile Q(veh)	-	-	0.1

Intersection						
Int Delay, s/veh	0.1					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↗	↕	↗		↕
Traffic Vol, veh/h	0	10	1258	7	0	780
Future Vol, veh/h	0	10	1258	7	0	780
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	150	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	11	1367	8	0	848

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	-	684	0	0	-
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-
Critical Hdwy	-	6.94	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-
Follow-up Hdwy	-	3.32	-	-	-
Pot Cap-1 Maneuver	0	391	-	-	0
Stage 1	0	-	-	-	0
Stage 2	0	-	-	-	0
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	-	391	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	14.5	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBT
Capacity (veh/h)	-	-	391
HCM Lane V/C Ratio	-	-	0.028
HCM Control Delay (s)	-	-	14.5
HCM Lane LOS	-	-	B
HCM 95th %tile Q(veh)	-	-	0.1

Lanes, Volumes, Timings
1: Marksheffel & Dublin

Long Term Total
PM Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	225	467	435	704	250	301	350	995	744	495	915	100
Future Volume (vph)	225	467	435	704	250	301	350	995	744	495	915	100
Satd. Flow (prot)	3433	3539	1583	3433	3539	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.584			0.950			0.950			0.950		
Satd. Flow (perm)	2110	3539	1583	3433	3539	1583	3433	3539	1583	3433	3539	1583
Satd. Flow (RTOR)			118			73			469			118
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	245	508	473	765	272	327	380	1082	809	538	995	109
Turn Type	pm+pt	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	Free	Prot	NA	pm+ov
Protected Phases	7	4	5	3	8	1	5	2		1	6	7
Permitted Phases	4		4			8			Free			6
Total Split (s)	11.0	22.0	22.0	31.0	42.0	23.0	22.0	44.0		23.0	45.0	11.0
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
Act Effect Green (s)	25.0	18.0	39.4	27.0	38.0	61.0	17.4	40.0	120.0	19.0	41.6	52.6
Actuated g/C Ratio	0.21	0.15	0.33	0.22	0.32	0.51	0.14	0.33	1.00	0.16	0.35	0.44
v/c Ratio	0.47	0.96	0.79	0.99	0.24	0.39	0.77	0.92	0.51	0.99	0.81	0.14
Control Delay	29.4	80.9	37.8	76.9	31.1	15.3	60.3	51.5	1.2	87.0	42.1	3.5
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	29.4	80.9	37.8	76.9	31.1	15.3	60.3	51.5	1.2	87.0	42.1	3.5
LOS	C	F	D	E	C	B	E	D	A	F	D	A
Approach Delay		54.0			53.0			35.1			54.2	
Approach LOS		D			D			D			D	

Intersection Summary

Cycle Length: 120	
Actuated Cycle Length: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.99	
Intersection Signal Delay: 47.2	Intersection LOS: D
Intersection Capacity Utilization 88.0%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 1: Marksheffel & Dublin



Lanes, Volumes, Timings
2: Dublin & Vista del Pico

Long Term Total
PM Peak Hour

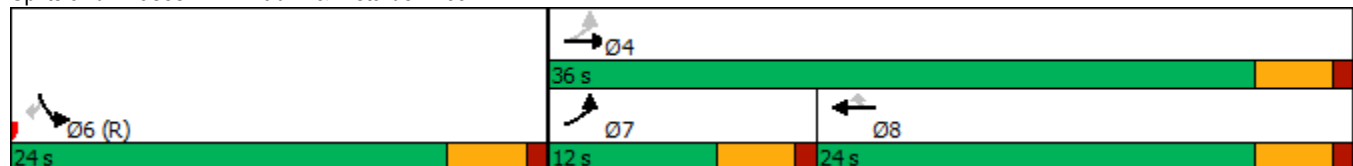


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↶	↑↑↑	↑↑↑	↷	↶	↷
Traffic Volume (vph)	155	1550	1070	25	0	185
Future Volume (vph)	155	1550	1070	25	0	185
Satd. Flow (prot)	1770	5085	5085	1583	1863	1583
Flt Permitted	0.157					
Satd. Flow (perm)	292	5085	5085	1583	1863	1583
Satd. Flow (RTOR)				28		308
Peak Hour Factor	0.92	0.92	0.90	0.90	0.86	0.86
Shared Lane Traffic (%)						
Lane Group Flow (vph)	168	1685	1189	28	0	215
Turn Type	pm+pt	NA	NA	Perm	Prot	Perm
Protected Phases	7	4	8		6	
Permitted Phases	4			8		6
Total Split (s)	12.0	36.0	24.0	24.0	24.0	24.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Act Effect Green (s)	30.5	30.5	20.9	20.9		20.5
Actuated g/C Ratio	0.51	0.51	0.35	0.35		0.34
v/c Ratio	0.51	0.65	0.67	0.05		0.29
Control Delay	13.6	12.2	19.4	6.6		1.7
Queue Delay	0.0	0.0	0.0	0.0		0.0
Total Delay	13.6	12.2	19.4	6.6		1.7
LOS	B	B	B	A		A
Approach Delay		12.3	19.1		1.7	
Approach LOS		B	B		A	

Intersection Summary

Cycle Length: 60
 Actuated Cycle Length: 60
 Offset: 0 (0%), Referenced to phase 2: and 6:SBL, Start of Green
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.67
 Intersection Signal Delay: 14.1
 Intersection LOS: B
 Intersection Capacity Utilization 39.6%
 ICU Level of Service A
 Analysis Period (min) 15

Splits and Phases: 2: Dublin & Vista del Pico



Lanes, Volumes, Timings
4: West Access & Dublin

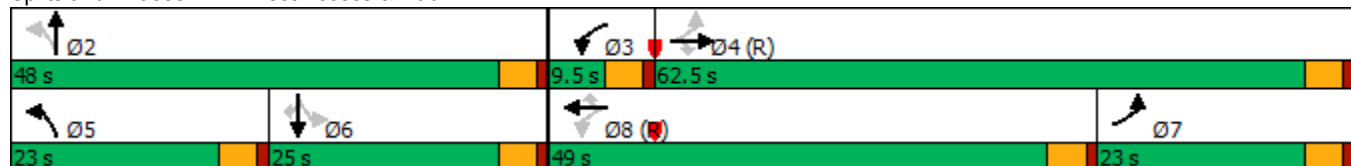
Long Term Total
PM Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	220	995	345	0	601	0	215	5	0	0	5	136
Future Volume (vph)	220	995	345	0	601	0	215	5	0	0	5	136
Satd. Flow (prot)	1770	3539	1583	1863	3539	1863	1770	1863	0	1863	1863	1583
Flt Permitted	0.291						0.645					
Satd. Flow (perm)	542	3539	1583	1863	3539	1863	1201	1863	0	1863	1863	1583
Satd. Flow (RTOR)			375									148
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	239	1082	375	0	653	0	234	5	0	0	5	148
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA		Perm	NA	Perm
Protected Phases	7	4		3	8		5	2			6	
Permitted Phases	4		4	8		8	2			6		6
Total Split (s)	23.0	62.5	62.5	9.5	49.0	49.0	23.0	48.0		25.0	25.0	25.0
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
Act Effect Green (s)	68.0	68.0	68.0		45.0		44.0	44.0			23.5	23.5
Actuated g/C Ratio	0.57	0.57	0.57		0.38		0.37	0.37			0.20	0.20
v/c Ratio	0.48	0.54	0.35		0.49		0.45	0.01			0.01	0.34
Control Delay	18.5	14.6	4.0		26.5		31.0	24.2			41.0	9.2
Queue Delay	0.0	0.0	0.0		0.0		0.0	0.0			0.0	0.0
Total Delay	18.5	14.6	4.0		26.5		31.0	24.2			41.0	9.2
LOS	B	B	A		C		C	C			D	A
Approach Delay		12.8			26.5			30.9			10.2	
Approach LOS		B			C			C			B	

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 40 (33%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.54
 Intersection Signal Delay: 17.5
 Intersection LOS: B
 Intersection Capacity Utilization 60.2%
 ICU Level of Service B
 Analysis Period (min) 15

Splits and Phases: 4: West Access & Dublin



Lanes, Volumes, Timings
6: Marksheffel & Woodmen

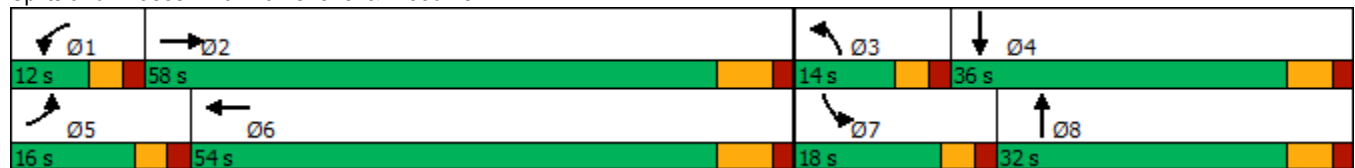
Long Term Total
PM Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	250	2556	595	310	1524	386	270	921	425	460	855	125
Future Volume (vph)	250	2556	595	310	1524	386	270	921	425	460	855	125
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Satd. Flow (RTOR)			286			291			342			182
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	272	2778	647	337	1657	420	293	1001	462	500	929	136
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
Total Split (s)	16.0	58.0		12.0	54.0		14.0	32.0		18.0	36.0	
Total Lost Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Act Effect Green (s)	12.0	54.0	120.0	8.0	50.0	120.0	10.0	28.0	120.0	14.0	32.0	120.0
Actuated g/C Ratio	0.10	0.45	1.00	0.07	0.42	1.00	0.08	0.23	1.00	0.12	0.27	1.00
v/c Ratio	0.79	1.21	0.41	1.48	0.78	0.27	1.02	1.21	0.29	1.25	0.99	0.09
Control Delay	70.1	131.7	0.8	276.0	33.5	0.4	113.6	147.0	0.5	175.2	70.0	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	70.1	131.7	0.8	276.0	33.5	0.4	113.6	147.0	0.5	175.2	70.0	0.1
LOS	E	F	A	F	C	A	F	F	A	F	E	A
Approach Delay		104.3			61.6			102.9			97.5	
Approach LOS		F			E			F			F	

Intersection Summary

Cycle Length: 120	
Actuated Cycle Length: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.48	
Intersection Signal Delay: 92.0	Intersection LOS: F
Intersection Capacity Utilization 110.1%	ICU Level of Service H
Analysis Period (min) 15	

Splits and Phases: 6: Marksheffel & Woodmen



Lanes, Volumes, Timings
 12: Banning Lewis Parkway & Woodmen

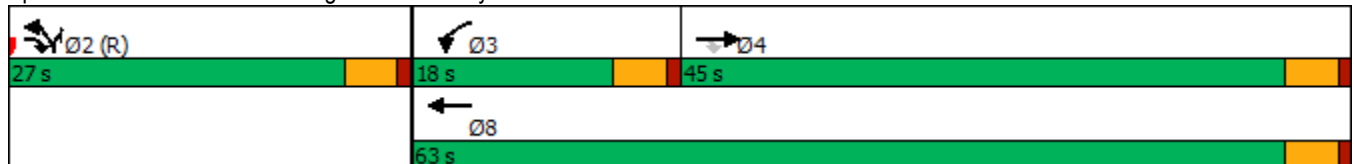
Long Term Total
 PM Peak Hour

	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑	↑	↘	↑↑↑	↘↘	↘
Traffic Volume (vph)	2230	1211	170	1475	744	103
Future Volume (vph)	2230	1211	170	1475	744	103
Satd. Flow (prot)	5085	1583	1770	5085	3433	1583
Flt Permitted			0.950		0.950	
Satd. Flow (perm)	5085	1583	1770	5085	3433	1583
Satd. Flow (RTOR)		231				112
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Lane Group Flow (vph)	2424	1316	185	1603	809	112
Turn Type	NA	pm+ov	Prot	NA	Prot	Prot
Protected Phases	4	2	3	8	2	2
Permitted Phases		4				2
Total Split (s)	45.0	27.0	18.0	63.0	27.0	27.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Act Effect Green (s)	42.0	69.0	13.0	59.0	23.0	23.0
Actuated g/C Ratio	0.47	0.77	0.14	0.66	0.26	0.26
v/c Ratio	1.02	1.04	0.73	0.48	0.92	0.23
Control Delay	49.5	47.8	53.7	8.4	46.4	11.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	49.5	47.8	53.7	8.4	46.4	11.1
LOS	D	D	D	A	D	B
Approach Delay	48.9			13.1	42.1	
Approach LOS	D			B	D	

Intersection Summary

Cycle Length: 90
 Actuated Cycle Length: 90
 Offset: 0 (0%), Referenced to phase 2:NBL and 6:, Start of Green
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.04
 Intersection Signal Delay: 38.0
 Intersection LOS: D
 Intersection Capacity Utilization 91.1%
 ICU Level of Service F
 Analysis Period (min) 15

Splits and Phases: 12: Banning Lewis Parkway & Woodmen



Lanes, Volumes, Timings
21: Commercial Access & Dublin

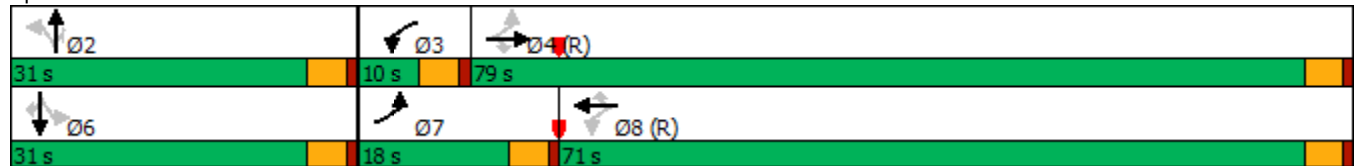
Long Term Total
PM Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	206	1451	238	39	883	29	195	0	63	46	0	163
Future Volume (vph)	206	1451	238	39	883	29	195	0	63	46	0	163
Satd. Flow (prot)	1770	5085	1583	1770	5085	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.239			0.127			0.757			0.757		
Satd. Flow (perm)	445	5085	1583	237	5085	1583	1410	1863	1583	1410	1863	1583
Satd. Flow (RTOR)			259			95			113			229
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	224	1577	259	42	960	32	212	0	68	50	0	177
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm		Perm	Perm		Perm
Protected Phases	7	4		3	8			2				6
Permitted Phases	4		4	8		8	2		2	6		6
Total Split (s)	18.0	79.0	79.0	10.0	71.0	71.0	31.0	31.0	31.0	31.0	31.0	31.0
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	4.0
Act Effect Green (s)	85.0	77.0	77.0	75.9	69.9	69.9	27.0		27.0	27.0		27.0
Actuated g/C Ratio	0.71	0.64	0.64	0.63	0.58	0.58	0.22		0.22	0.22		0.22
v/c Ratio	0.51	0.48	0.23	0.19	0.32	0.03	0.67		0.15	0.16		0.33
Control Delay	8.3	7.8	1.0	4.6	7.6	0.1	54.1		2.1	39.1		3.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0
Total Delay	8.3	7.8	1.0	4.6	7.6	0.1	54.1		2.1	39.1		3.4
LOS	A	A	A	A	A	A	D		A	D		A
Approach Delay		7.0			7.2			41.4				11.3
Approach LOS		A			A			D				B

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 49 (41%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.67
 Intersection Signal Delay: 10.0
 Intersection LOS: B
 Intersection Capacity Utilization 59.7%
 ICU Level of Service B
 Analysis Period (min) 15

Splits and Phases: 21: Commercial Access & Dublin



Intersection						
Int Delay, s/veh	6.5					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↘	↗	↕	↗	↘	
Traffic Vol, veh/h	55	205	1411	110	305	0
Future Vol, veh/h	55	205	1411	110	305	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	-	325	-	-
Veh in Median Storage, #	0	-	0	-	-	16979
Grade, %	0	-	0	-	-	0
Peak Hour Factor	89	89	92	92	91	91
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	62	230	1534	120	335	0

Major/Minor	Minor1	Major1		
Conflicting Flow All	1534	767	0	0
Stage 1	1534	-	-	-
Stage 2	0	-	-	-
Critical Hdwy	6.84	6.94	-	-
Critical Hdwy Stg 1	5.84	-	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-
Pot Cap-1 Maneuver	107	345	-	-
Stage 1	164	-	-	-
Stage 2	-	-	-	-
Platoon blocked, %			-	-
Mov Cap-1 Maneuver	107	345	-	-
Mov Cap-2 Maneuver	107	-	-	-
Stage 1	164	-	-	-
Stage 2	-	-	-	-

Approach	WB	NB
HCM Control Delay, s	43.2	0
HCM LOS	E	

Minor Lane/Major Mvmt	NBT	NBRWBLn1	WBLn2
Capacity (veh/h)	-	-	107 345
HCM Lane V/C Ratio	-	-	0.578 0.668
HCM Control Delay (s)	-	-	76.9 34.1
HCM Lane LOS	-	-	F D
HCM 95th %tile Q(veh)	-	-	2.8 4.6

HCM 6th TWSC
 25: Banning Lewis Parkway & Commercial RIRO

Long Term Total
 PM Peak Hour

Intersection						
Int Delay, s/veh	0.3					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↗	↕↕	↗		↕↕
Traffic Vol, veh/h	0	54	1148	86	0	1024
Future Vol, veh/h	0	54	1148	86	0	1024
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	150	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	59	1248	93	0	1113

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	-	624	0	0	-
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-
Critical Hdwy	-	6.94	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-
Follow-up Hdwy	-	3.32	-	-	-
Pot Cap-1 Maneuver	0	428	-	-	0
Stage 1	0	-	-	-	0
Stage 2	0	-	-	-	0
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	-	428	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	14.7	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBT
Capacity (veh/h)	-	-	428
HCM Lane V/C Ratio	-	-	0.137
HCM Control Delay (s)	-	-	14.7
HCM Lane LOS	-	-	B
HCM 95th %tile Q(veh)	-	-	0.5

HCM 6th TWSC
 26: Banning Lewis Parkway & RIRO Access

Long Term Total
 PM Peak Hour

Intersection						
Int Delay, s/veh	0					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↗	↗↗	↗		↗↗
Traffic Vol, veh/h	0	6	842	22	0	1381
Future Vol, veh/h	0	6	842	22	0	1381
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	150	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	7	915	24	0	1501

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	-	458	0	0	-
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-
Critical Hdwy	-	6.94	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-
Follow-up Hdwy	-	3.32	-	-	-
Pot Cap-1 Maneuver	0	550	-	-	0
Stage 1	0	-	-	-	0
Stage 2	0	-	-	-	0
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	-	550	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-

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

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBT
Capacity (veh/h)	-	-	550
HCM Lane V/C Ratio	-	-	0.012
HCM Control Delay (s)	-	-	11.6
HCM Lane LOS	-	-	B
HCM 95th %tile Q(veh)	-	-	0