Town of Blackfalds
2015 Transportation Master Plan

Prepared for:
Town of Blackfalds

Prepared by:
Stantec Consulting Ltd.

May 8, 2015

Sign-off Sheet

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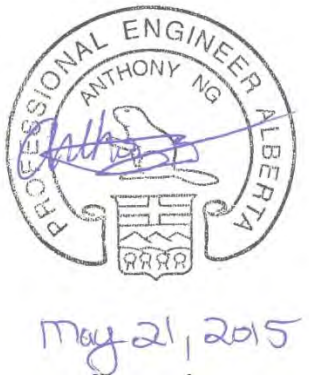

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APEGA Permit to Practice P0258

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Table of Contents

List of Appendices

1.0 INTRODUCTION

The Transportation Master Plan (TMP) for Blackfalds is a framework for meeting the Town's transportation needs. Blackfalds has recently experienced strong population and employment growth. In cooperation with the Municipal Development Plan, the TMP will guide continued development in Blackfalds.

The Blackfalds TMP outlines the transportation requirements of the Town over the next decades. In contrast to localized studies for specific developments, the TMP is a higher level study that considers the Town holistically in its central Alberta context.

Stantec completed the Town's previous Transportation Study in 2003, which analyzed a long term population horizon of 12,000. Additional analysis was completed in 2007 in support of an annexation application by the Town. A new transportation plan is needed for the Town due to the many changes that have occurred over the last decade, including the newly annexed lands and rapid population growth from 4,571 in 2006 to 7,858 in 2014. This has resulted in significant increases in development east of Highway 2A and higher traffic volumes on Highway 2A and crossing Highway 2A.

This study will update the previously completed transportation plans. The objectives for this study included:

- Completing traffic counts to understand existing travel patterns within the Town.
- Negotiating long term access onto Highway 2A with Alberta Transportation.
- Conceptual design of the long term transportation network for the entire Town.
- Projecting future traffic at the 12,000 (12K), 16,500 (16.5K), and 22,500 (22.5K) population horizons and recommending a suitable roadway network at those horizons.
- Completing an implementation plan for the recommended improvements including an opinion of probable cost. Considering the accommodation of pedestrians, cyclists, and transit users.
- Presenting the proposed plan to local residents and stakeholders and soliciting their feedback.

2.0 EXISTING CONDITIONS

2.1 LAND USE CONTEXT

The Town of Blackfalds has experienced rapid growth in recent years, with the population doubling to just under 8,000 between 2003 to 2014. The majority of the Town consists of low density residential developments. Other developments of note include:

- The downtown commercial core west of Highway 2A centered on Broadway Avenue and Park Street.
- Highway oriented commercial developments located east of Highway 2A along Parkwood Road.
- Planned and proposed industrial developments on the south and west of the Town adjacent to Highway 597 and Highway 2.

The Municipal Development Plan (MDP) anticipates that future industrial development will occur on the south, west, and northwest of the Town. Commercial developments will be located at the northwest corner of Highway 2A – Highway 597 and along the northern boundary of the Town. The MDP's transportation objectives include developing "a roadway network which is efficient, safe and supports orderly land use development." The TMP will help the Town achieve this objective with a transportation plan that addresses current operational issues and accommodates future development.

2.2 TRANSPORTATION NETWORK

2.2.1 Road Network

The two main functions of a roadway are to provide mobility and land access. These two functions typically compete with each other, and a hierarchical functional classification for roadways is often used for planning and design purposes.

The following functional classifications, as defined in the Transportation Association of Canada's (TAC) *Geometric Design Guide for Canadian Roads*, are most commonly used to describe roadway infrastructure:

- Highway / Expressway;
- Arterial Roadway;
- Collector Roadway; and
- Local Roadway.

Figure 2.1 illustrates the existing roadway network and classification and the following provides a brief description of the function and typical characteristics of these roadway classifications within the context of Blackfalds. This TMP is a high level study that encompasses the entire Town and focuses on existing arterial and major collector roadways. Planning for future local roads and minor collector roads will occur as traffic impact studies are completed for future developments. The four primary road classifications are described as follows:

Highway / Expressway

A highway or expressway's primary function is to provide for high-speed "through" traffic movement and to accommodate longer distance trips. Few access points are permitted to an expressway and often these are only provided at grade-separated interchanges. No direct access is usually permitted to individual developments unless they are of sufficient scale to require an interchange. There are no highways under the Town's jurisdiction, but Highway 2 adjacent to the Town is a provincial highway.

Arterial Roadway

An arterial roadway provides for traffic movement and connects the main areas of traffic generation in a community. Ideally, only other arterial or collector roadways should intersect with an arterial. Intersections on an arterial are typically located at a minimum spacing of 400 m; direct access to adjacent developments and on-street parking are generally not permitted. Vista Trail is currently the only arterial within the Town. Highway 2A and Highway 597 are both arterial roads under provincial jurisdiction.

Collector Roadway

Collector roadways give equal emphasis to mobility and land access. In general, collector roadways provide a link for traffic to travel from a local road to the nearest arterial roadway. They are intended to accommodate most of the traffic movements within a neighbourhood and often serve as bus routes. Parking is usually permitted on collector roadways.

Local Roadway

A local roadway's primary function is to provide direct access to adjacent land uses. Speeds and volumes are generally low. Parking is usually permitted on local roadways.

Signalized Intersections

There are currently two fully signalized intersections on Highway 2A at Park Street and Gregg Street. A pedestrian actuated half signal was also recently installed at Highway 2A – Cottonwood Drive.

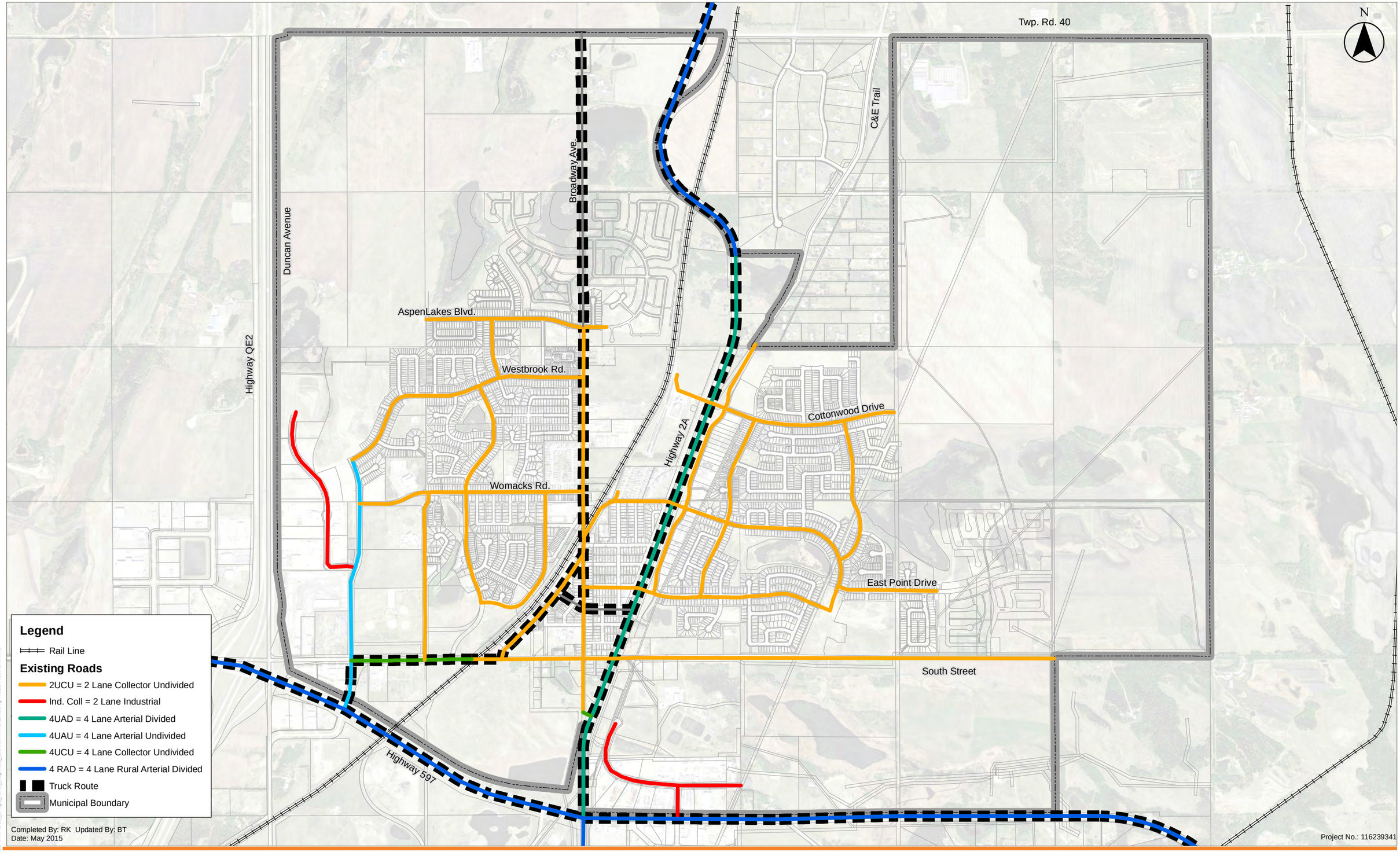


Figure 2.1: Existing Road Network

2.2.2 Transit

BOLT Transit, a regional transit service connecting the Town to Lacombe and Red Deer, started operation in August 2014. During the morning and evening peaks, the service operates as an express route with one northbound and one southbound stop in Blackfalds. During weekday off-peak periods and Saturdays, additional stops within Blackfalds are serviced.

2.2.3 Active Modes Network

Active Mode transportation is defined as any mode of transportation that is human powered (ex. walking, cycling, rollerblading, skateboarding, etc.). The Town of Blackfalds places Active Mode transportation as an important component of the Town's transportation network.

There is currently an extensive trail and sidewalk system across the Town and it includes the TransCanada Trail, which connects to Broadway Avenue on the north side of Town and to Highway 597 at Vista Trail on the south side of Town. The network is instrumental in actively connecting people from where they live to their key destinations, some of which include:

- Abbey Centre
- Spray Park
- Green Spaces and Playgrounds
- Skateboard Park
- Schools
- All Star Park
- Downtown
- Arena
- Commercial Shopping Districts
- Town Hall / Library

Please refer to *Section 6.0 - Active Modes Transportation* for a detailed overview on the Town's vision for the Active Modes network and recommendations to build upon and improve it.

2.2.4 Truck Routes

The Town of Blackfalds' Traffic Bylaw designates several roads within the Town as truck routes in addition to Highway 2A and Highway 597. The Town's existing truck route map is shown in Figure 2.1 and provides access to industrial areas.

2.3 EXISTING TRAFFIC VOLUMES

A traffic count program was conducted in 2013 and 2014 in support of the TMP. The raw count data is included in Appendix A. Daily traffic volumes on major roads throughout Blackfalds were estimated by multiplying the sum of AM peak hour and PM peak hour volumes by 5 as summarized in Figure 2.4. Some daily volumes on highways were derived from counts completed by Alberta Transportation.

2.4 TRAFFIC CHARACTERISTICS

2.4.1 Highway 2A

In addition to forming part of the Town's arterial road network, Highway 2A is also being used by traffic generated by Lacombe to the north, and Red Deer to the South. Alberta Transportation maintains a permanent automatic traffic recorder south of Blackfalds and historical turning movement counts are available to the north. This data indicates that traffic volumes on Highway 2A north of Cottonwood Drive have decreased in recent years as shown in Figure 2.2. Traffic volumes south of Blackfalds have fluctuated unevenly with an average annual growth rate of 1.4% since 2002 as shown in Figure 2.3.

Figure 2.2 – Historical Traffic Volumes on Highway 2A north of Cottonwood Drive

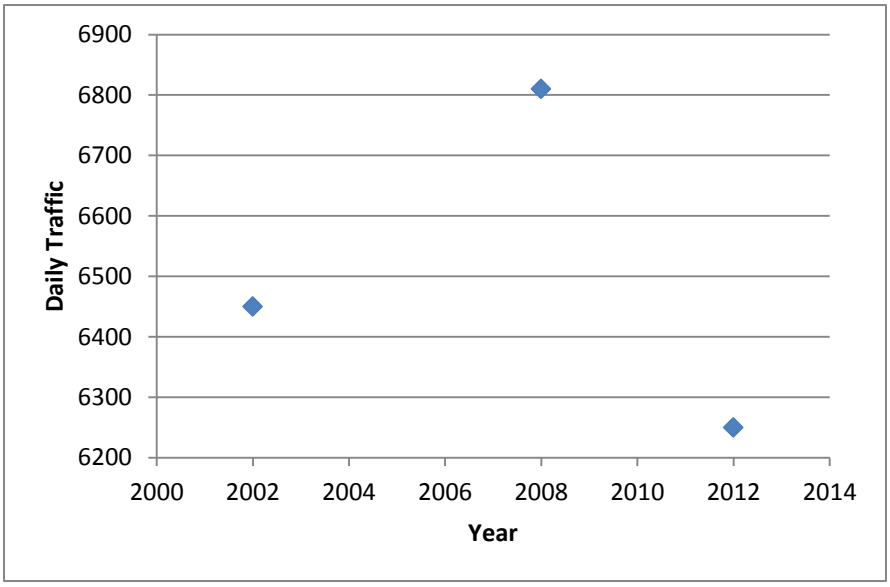
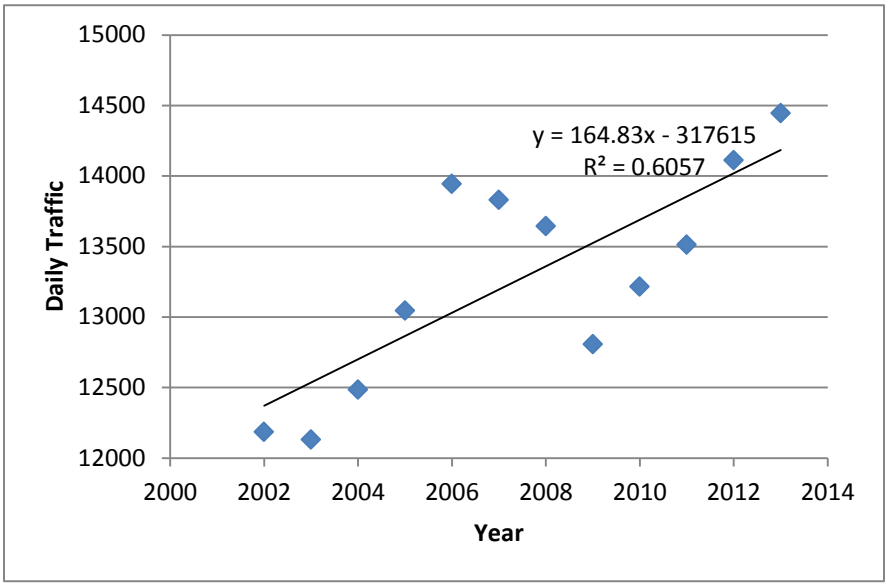


Figure 2.3 - Historical Traffic Volumes on Highway 2A south of Township Road 391.



2.4.2 24-hour Traffic Counts

Conventional sources of trip generation rates such as the Institute of Transportation Engineers' (ITE) *Trip Generation Manual* tend to be based on surveys of large urban centres and may not be representative of Blackfalds. To examine typical traffic patterns over a 24-hour period, automated traffic recorder (ATR) counts were also conducted at commercial and residential developments in Blackfalds.

N

Twp. Rd. 40

Duncan Avenue

Broadway Ave.

C&E Trail

Highway QE2

Highway 2A

AspenLakes Blvd.

Westbrook Rd.

Womacks Rd.

Cottonwood Drive

East Point Drive

South Street

Highway 597

33600
1000
2600
3300
6330
1300
1500
2600
7100
3550
3800
1600
8900
5000
1600
2100
1700
2300
2650
6200
2300
2300
150
4700
2000
14200
40250
5050
18450
12150
6300

Legend

- Rail Line
- Existing Roads
- Municipal Boundary

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BLACKFALDS ALBERTA

Figure 2.4: Daily Traffic Volumes 7,200 Population (Existing)

Transportation Master Plan

Commercial Trips

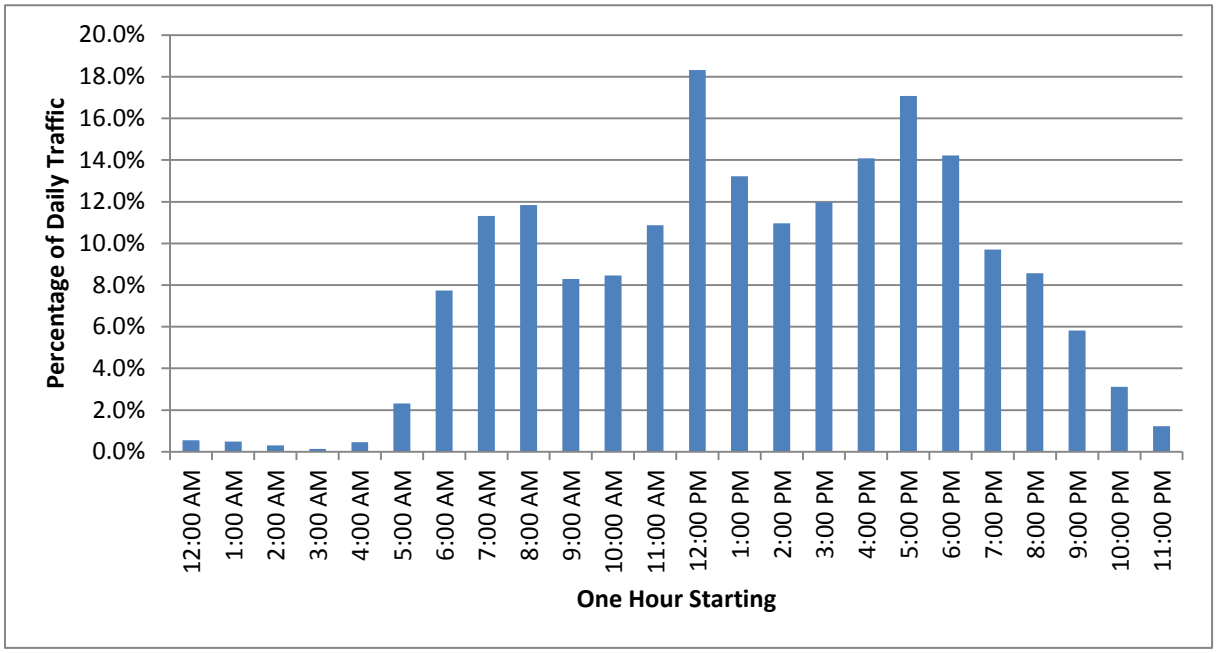
Automated traffic recorders were placed along Parkwood Road to examine the traffic patterns for commercial developments adjacent to Highway 2A at the following locations:

- South of Cottonwood Drive;
- North of Panorama Drive;
- South of Panorma Drive; and
- North of Park Street.

As shown in the following Figure 2.5, traffic on Parkwood Road exhibits a noon peak hour that is similar to the PM peak hour from 5:00 PM to 6:00 PM. This noon peak is characteristic of commercial areas in smaller communities. It should be noted while trip generation for commercial developments may peak at noon, the PM peak hour was analyzed because residential developments tend to peak in the afternoon and the peak hour for all traffic typically follows the residential peak as discussed below.

Traffic volumes generated by commercial developments adjacent to Parkwood Road between Park Street and Panorama Drive indicate that the peak hour trips rates are about 4.5 trips/1000ft^2 in the AM, and 8.6 trips/1000 ft^2 in the PM. This is higher than typical trip generation rates for a shopping centre from the Institute of Transportation Engineers' (ITE) *Trip Generational Manual* (0.96 trips/1000 ft^2 in the AM, and 3.71 trips/1000 ft^2 in the PM) and indicates that the highway commercial in Blackfalds has different trip characteristics.

Figure 2.5 – Parkwood Road Commercial Hourly Traffic Distribution



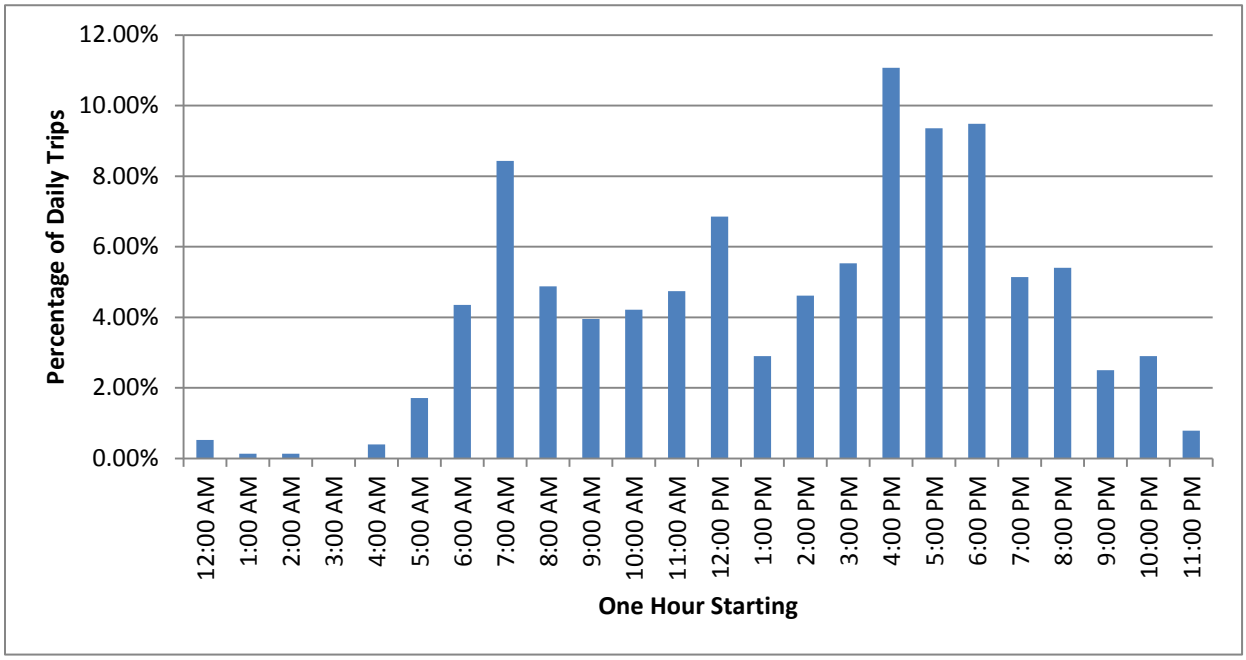
Residential Trips

Automated traffic recorders were placed at both ends of Westgate Crescent to sample peak hour and daily traffic volumes from this residential subdivision. The subdivision consisted of single family detached housing and Townhouses (duplex/triplex). As shown in the following Table 2.1, observed trip generation was similar to that calculated from the Institute of Transportation Engineers' (ITE) *Trip Generational Manual* rates so that the *Manual* appear to be applicable to Blackfalds. Daily traffic variation is shown in Figure 2.6 and shows a small noon peak that is dwarfed by the AM and PM peak hour peaks.

Table 2.1 – Westgate Crescent Trip Generation

Dwelling Type	D.U.	ITE Land Use Code	ITE Trip Rates			Expected Trips		
			AM	PM	DAILY	AM	PM	DAILY
Condo/Townhouse	30	230	0.44	0.52	5.81	13	16	174
Single Family Detached	63	210	0.75	1	9.52	47	63	600
					Total (Estimated)	60	79	774
					Total (Actual)	69	89	769
					Variance	**14%**	**13%**	**-1%**

Figure 2.6 – Westgate Crescent Residential Hourly Traffic Distribution



2.5 GEOGRAPHIC AND INFRASTRUCTURE CONSTRAINTS

There are several natural and manmade constraints within the Town that were considered for the long term transportation plan.

The Town of Blackfalds has grown around Highway 2A as its primary transportation corridor. Highway 2A is under provincial jurisdiction and the provincial highway network is intended to facilitate north/south mobility between different Towns and cities throughout the province. While Highway 2A allows residents of the Town to travel to Red Deer, Lacombe, and further afield, the highway can also act as a barrier to east/west trips within the Town. The Province and the Town may also have differing objectives with respect to access, intersections, and traffic control systems for Highway 2A.

Parkwood Road is designated as a service road for Highway 2A that parallels the highway. This road provides access to several existing and proposed commercial developments adjacent to Highway 2A. Unfortunately, the intersections of Parkwood Road are located very close to Highway 2A and the Town has begun to receive complaints from residents regarding the operations of these intersections.

Highway 2 forms the western boundary of Blackfalds. As part of the National Highway System in Alberta, no signals will be allowed on Highway 2 and new access is generally not permitted except at interchanges. Highway 597 is also under provincial jurisdiction and forms the southern

boundary of the Town; the intersection of Vista Trail and Highway 597 has been signalized and a roundabout is planned for the intersection of Highway 2A – Highway 597.

A north-south railroad operated by Canadian Pacific Railway (CP) is located west of Highway 2A and generally parallels this highway. There are two at-grade crossings of the railroad within the Town at Broadway Avenue and South Street. CP has agreed in principle that the existing crossing at Broadway Avenue can be closed and replaced with a new east-west crossing connecting Gregg Street and Womacks Road located north of the existing crossing. The Railroad acts as a barrier to east/west movement through the Town and future crossings will need to be negotiated with CP as needed. Highway 597 forms an underpass with the railroad on the southern boundary of the Town.

There are several large wetlands located within the Town's boundary. Most wetlands can be integrated into future neighbourhoods as demonstrated by existing development. The proposed road network should minimize impacts on natural areas wherever possible.

2.5.1 Highway 2A Microsimulation

Alberta Transportation's approved concept plan for Highway 2A completed by Castleglenn Consultants in 2007 recommended the closure of existing accesses at Broadway Avenue, South Street, and Indiana Street. To support development within the Town, it was proposed to AT that these accesses remain open with Indiana Street operating as a right-in/right-out intersection. AT expressed some concern with the traffic operations of these closely spaced intersections on Highway 2A including their impact on the proposed roundabout intersection to the south at Highway 597.

A separate analysis was completed using Vissim to model these intersections so that a detailed simulation could be completed for Alberta Transportation. Vissim is a microsimulation tool that simulates the movement of individual vehicles through the road network. Vehicles are typically modeled at increments of less than a second. Microsimulation is especially suitable for modeling corridors and the effect of closely spaced intersections on traffic operations. Unlike software based on the HCM such as Synchro, Vissim results are not calculated using an analytical equation.

The analysis indicated that maintaining the existing accesses at Broadway Avenue and South Street should not result in any major operational issues. Subsequent to the analysis, Alberta Transportation agreed to allow the Town to keep and signalize the two accesses on Highway 2A at Broadway Avenue and South Street. Further details regarding the analysis are included in Appendix B.

2.6 REVIEW OF 2003/2007 STUDY RECOMMENDATIONS

Stantec completed a Transportation Master Plan for the Town in 2003. Additional high level transportation planning was also completed in 2007 in support of the now completed annexation areas.

The 2003 *Town of Blackfalds Transportation Study* analyzed three population horizons at 4,000, 8,000 and 12,000. The Town's population has now reached approximately 8,000. The following Table 2.2 summarizes the status of the 4,000 short-range (SR) and 8,000 long-range (MR) population horizon recommendations from this report. Both of these studies assumed that access onto Highway 2A at Broadway Avenue and South Street would be closed. As AT has now agreed that these accesses can remain open, several recommendations are no longer applicable.

Table 2.2 – 2003 Transportation Study Recommendations

List	Recommendation	Status
SR-1	1. West Arterial Construction Womacks Road Extension	Complete
SR-2	1. Gregg Street Realignment 2. Broadway Avenue Realignment 3. New Railway Crossing [Womacks / Gregg Realignment] 4. Land Acquisition	Not Complete, design expected to begin in 2015.
SR-3	1. Park Street – Highway 2A Improvements 2. Parkwood Road Construction 3. Signalization of Park Street – Highway 2A 4. Signalization of Gregg Street – Highway 2A 5. Other Highway Intersection Improvements	1. Signals installed on Highway 2A 2. Preferred road network constructed 3. Signals installed on Highway 2A 4. Signals installed on Highway 2A 5. Not applicable as access to Highway 2A has changed.
MR-1	1. Twin Highway 2A	Highway 2A twinned from Cottonwood Drive to Panorama Drive.
MR-2	1. Extend West Arterial [Vista Trail] to Westbrooke Road 2. Widen South Street to 4 Lanes 3. Reconstruct West Arterial [Vista Trail] Access to Highway 597	Complete.
MR-3	1. Construct Broadway Avenue Extension	Construction from Westbrooke Road to Township Road 400 proceeding with development.
MR-4	1. Construct Stage 1 of East Collector [Cottonwood Drive] 2. Realign C&E Trail	Complete.
MR-5	1. Construct Industrial Collector from Parkwood Road to Highway 597	Connection should still be considered; however, land acquisition is expected to be challenging.

MR-6	1. Construct Collector from South Street to Industrial Collector (MR-5)	Connection should still be considered; however, land acquisition is expected to be challenging.

The 2007 *Blackfalds Master Plan Update for Annexation Application* analyzed transportation requirements at three phases. Most of the recommendations for phase 1 (5,000 to 11,600 population) were already included in the 2003 study and discussed above. Some recommendations are no longer applicable due to changes in access onto Highway 2A. The recommendation to upgrade East Railway Street and South Street (west of East Railway Street) to a four lane collector has not been completed, South Street has only been upgraded west of the railroad.

3.0 TRAFFIC MODELLING

The private automobile is the primary means of transportation for residents of Blackfalds. A traffic model was created to estimate future traffic volumes at three horizons representing populations of 12,000 (12K), 16,500 (16.5K) and 22,500 (22.5K). Knowing the future travel patterns will allow the Town to plan infrastructure and proactive budget and acquire right-of-way to facilitate the implementation of capital projects.

Using the MDP as a guideline, the modeled land use for each horizon is shown in Figure 3.1. As shown, the 22.5K horizon does not represent full build out of the Town's current boundaries, but we decided to only model up to the 22.5K population horizon as this already represents a tripling of the Town's existing population and modeling beyond this horizon would be highly speculative. The road network used for modeling was determined based on the geographic and infrastructure constraints, existing land use plans, and consultation with the Town and is discussed in Section 4.0

The transportation model for the Town of Blackfalds combines the existing traffic generated by current developments with future traffic generated by expected developments. Additional details for the modeling procedure are included in Appendix C. The traffic volume forecasts are shown in the following figures:

- Figure 3.2 – 12K Population Horizon Traffic Volumes
- Figure 3.3 – 16.5K Population Horizon Traffic Volumes
- Figure 3.4 – 22.5K Population Horizon Traffic Volumes

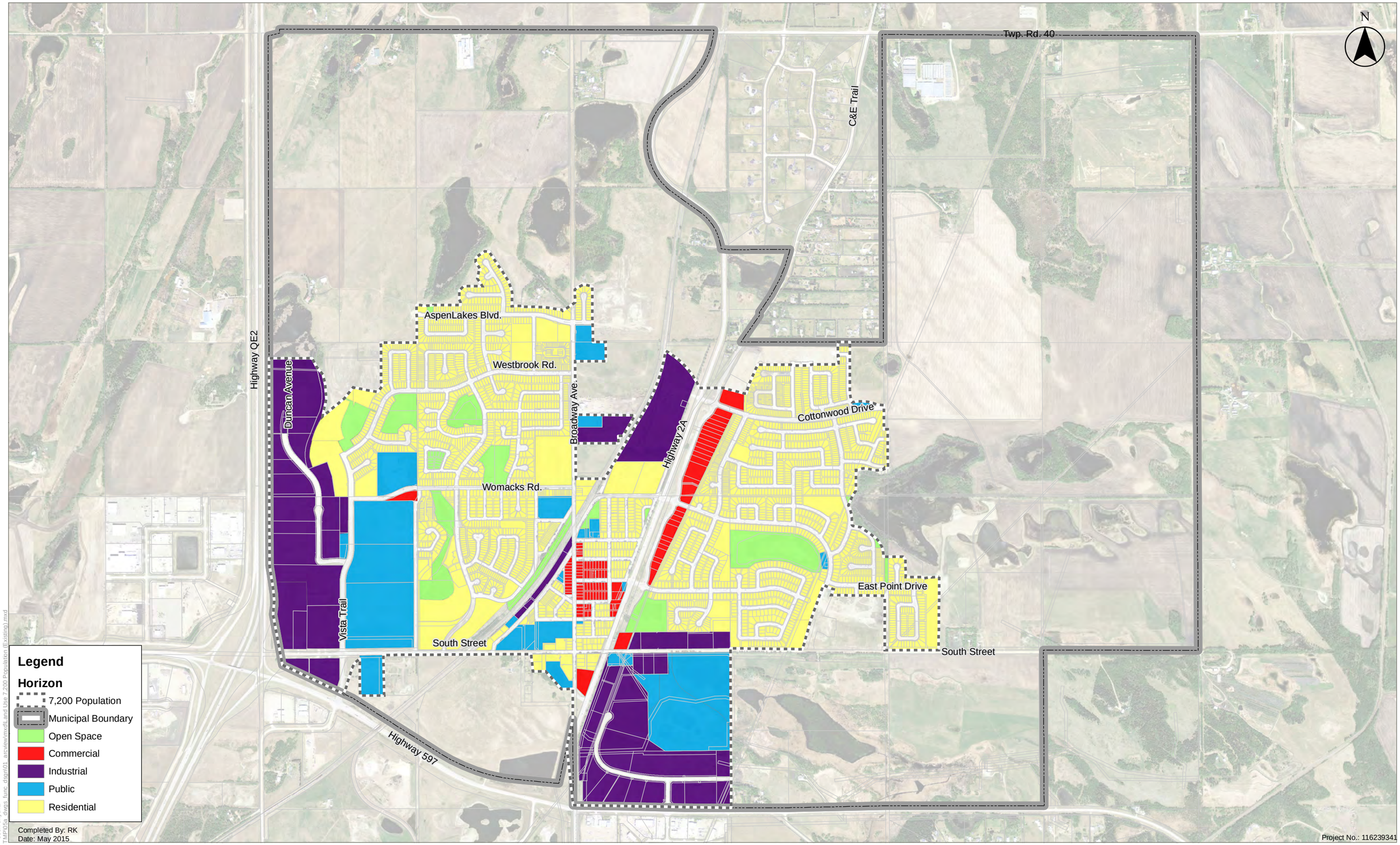


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Figure 3.1a - Existing Land Use (7,200 Population)

Transportation Master Plan

N

Twp. Rd. 40

C&E Trail

Highway QE2

AspenLakes Blvd.

Westbrook Rd.

Duncan Avenue

Broadway Ave.

Highway 2A

Cottonwood Drive

Womacks Rd.

East Point Drive

Vista Trail

South Street

South Street

Highway 597

Legend

Previous Horizons	New Horizon
	Open Space
	Commercial
	Industrial
	Public
	Residential
	7,200 Population
	12,000 Horizon
	Municipal Boundary

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Figure 3.1b - Future Land Use (12,000 Population Horizon)

Transportation Master Plan

N

Twp. Rd. 40

C&E Trail

Highway QE2

AspenLakes Blvd.

Westbrook Rd.

Duncan Avenue

Broadway Ave.

Highway 2A

Cottonwood Drive

Womacks Rd.

East Point Drive

Vista Trail

South Street

South Street

Highway 597

Legend

Previous Horizons	New Horizon
	Open Space
	Commercial
	Industrial
	Public
	Residential
	7,200 Population
	12,000 Horizon
	16,500 Horizon
	Municipal Boundary

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Figure 3.1c - Future Land Use (16,500 Population Horizon)

Transportation Master Plan

N

Twp. Rd. 40

C&E Trail

Highway QE2

Duncan Avenue

AspenLakes Blvd.

Westbrook Rd.

Broadway Ave.

Highway 2A

Cottonwood Drive

Womacks Rd.

East Point Drive

Vista Trail

South Street

South Street

Highway 597

Legend

Previous Horizons	New Horizon
	Open Space
	Commercial
	Industrial
	Public
	Residential
	7,200 Population
	12,000 Horizon
	16,500 Horizon
	22,500 Horizon
	Municipal Boundary

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Figure 3.1d - Future Land Use (22,500 Population Horizon)

Transportation Master Plan

Westbrook Rd.
Highway QE2
Duncan Avenue
Vista Trail
Leung Road
Westridge Drive
Broadway Avenue
Womacks Rd.
Gregg Street
Highway 2A
Parkwood Road
Cottonwood Drive
Panorama Drive
Park Street
East Point Drive
South Street
Highway 597
N

Legend

Turning Movements (vehicles/hour)

Primary Road Network

Municipal Boundary

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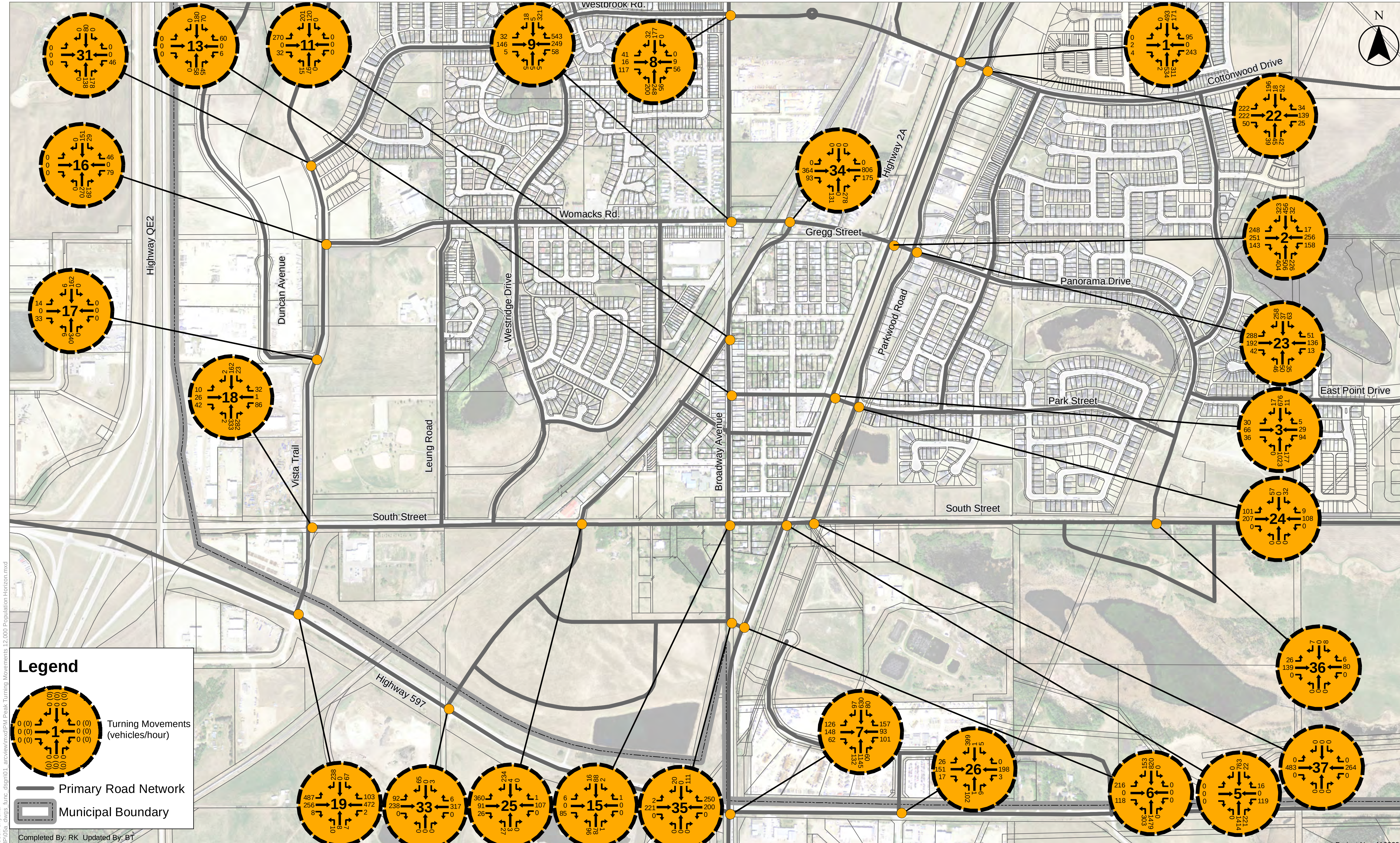
Figure 3.2a-AM Peak Turning Movements 12,000 Population Horizon

Transportation Master Plan


Westbrook Rd.
Cottonwood Drive
Womacks Rd.
Gregg Street
Highway 2A
Highway QE2
Duncan Avenue
Westridge Drive
Panorama Drive
Parkwood Road
East Point Drive
Park Street
Leung Road
Vista Trail
Broadway Avenue
South Street
Highway 597
N
Legend
Turning Movements (vehicles/hour)
Primary Road Network
Municipal Boundary
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Project No.: 116239341

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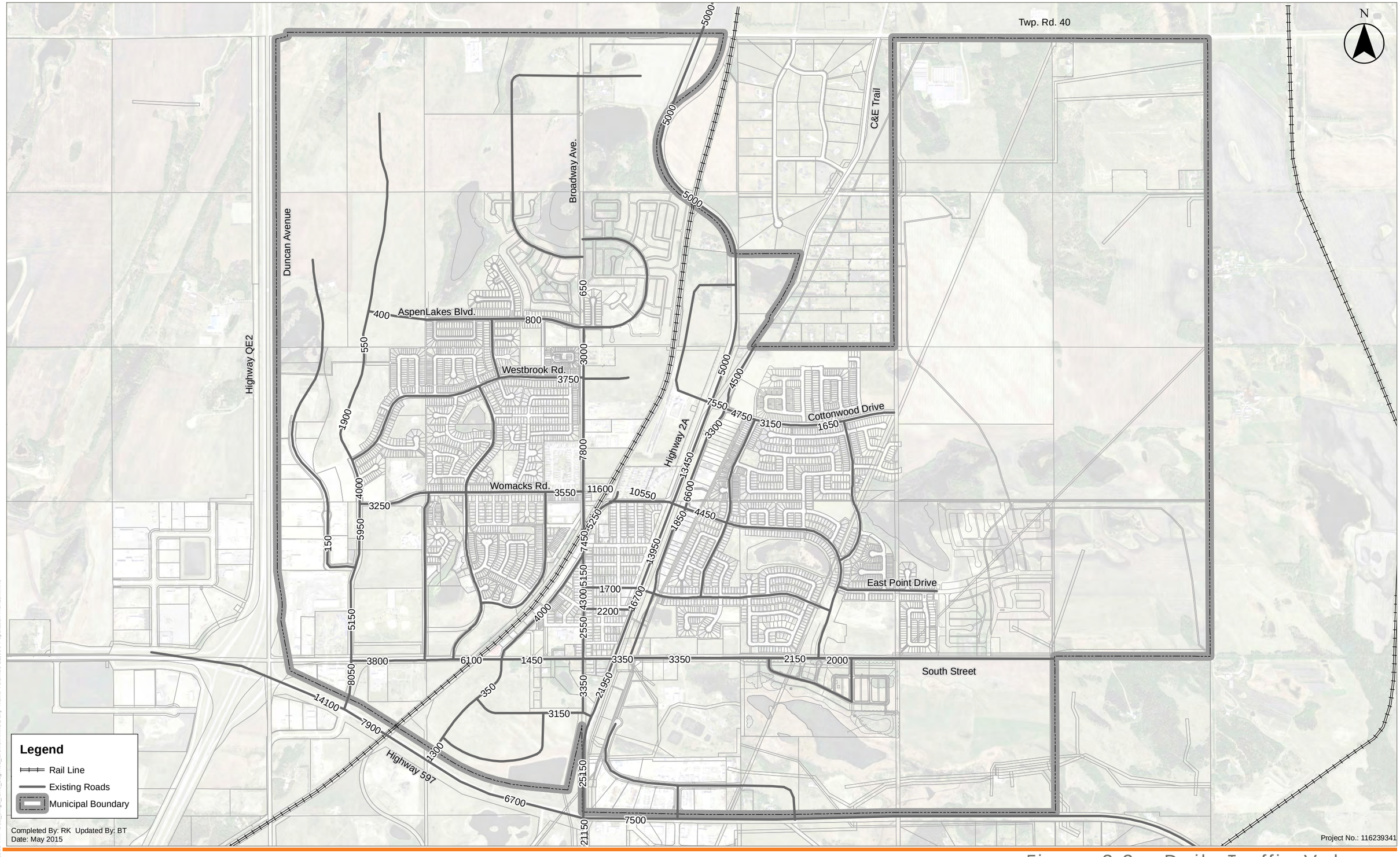
Figure 3.2b-PM Peak Turning Movements
12,000 Population Horizon
Transportation Master Plan



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BLACKFALDS ALBERTA

Figure 3.2c: Daily Traffic Volumes 12.000 Population Horizon

Transportation Master Plan

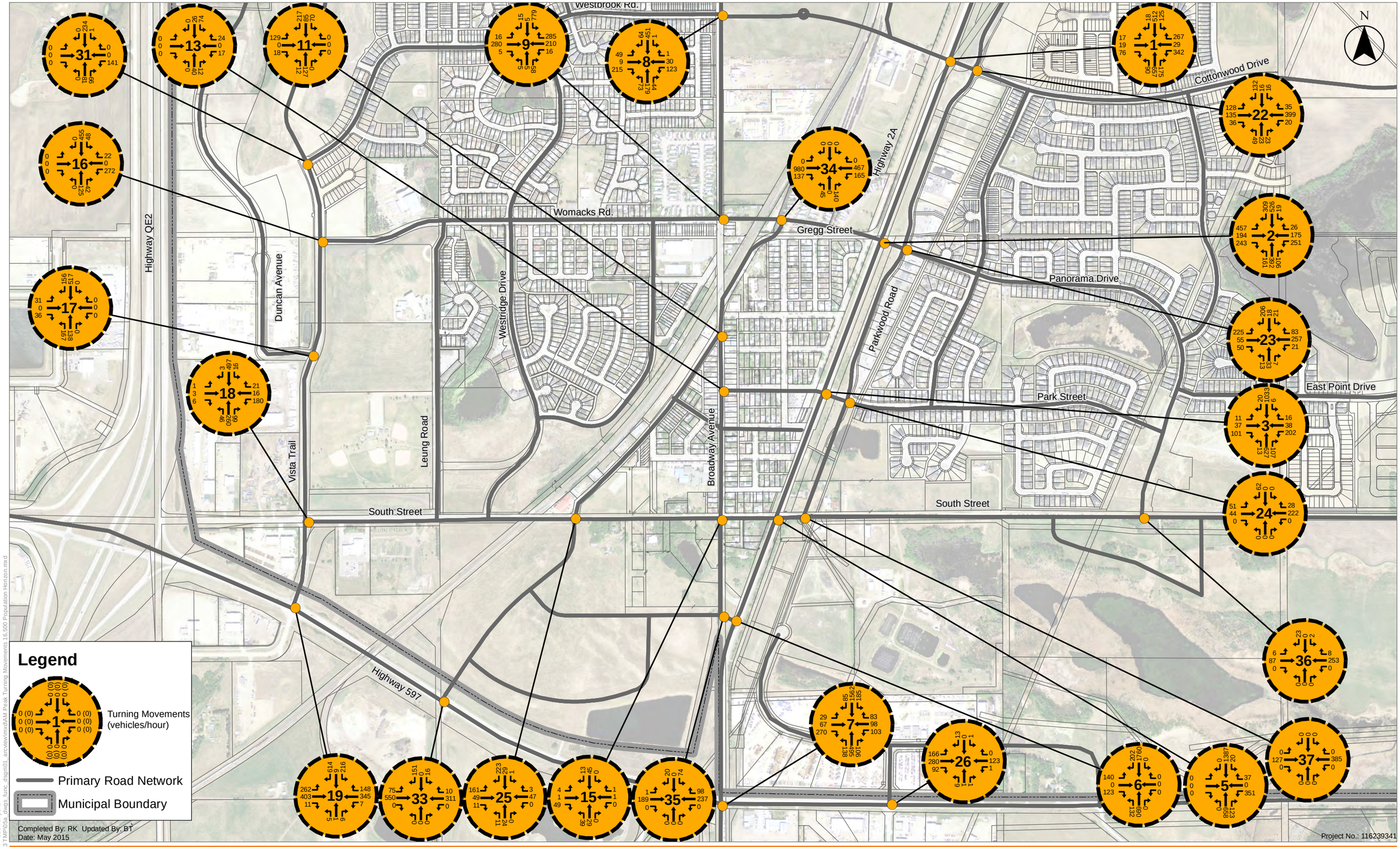

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Figure 3.3a-AM Peak Turning Movements
16,500 Population Horizon
Transportation Master Plan

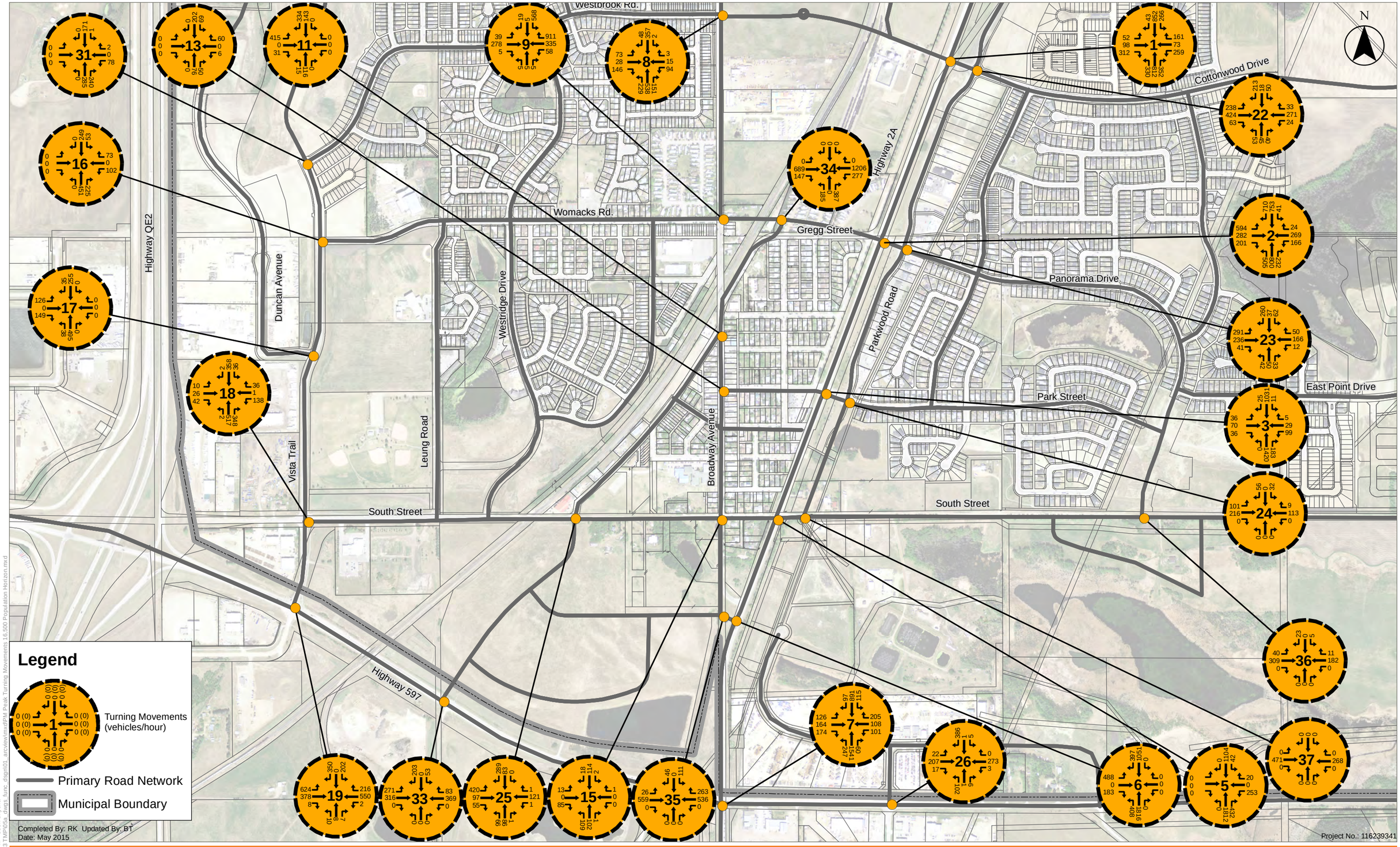

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Figure 3.3b-PM Peak Turning Movements
16,500 Population Horizon
Transportation Master Plan

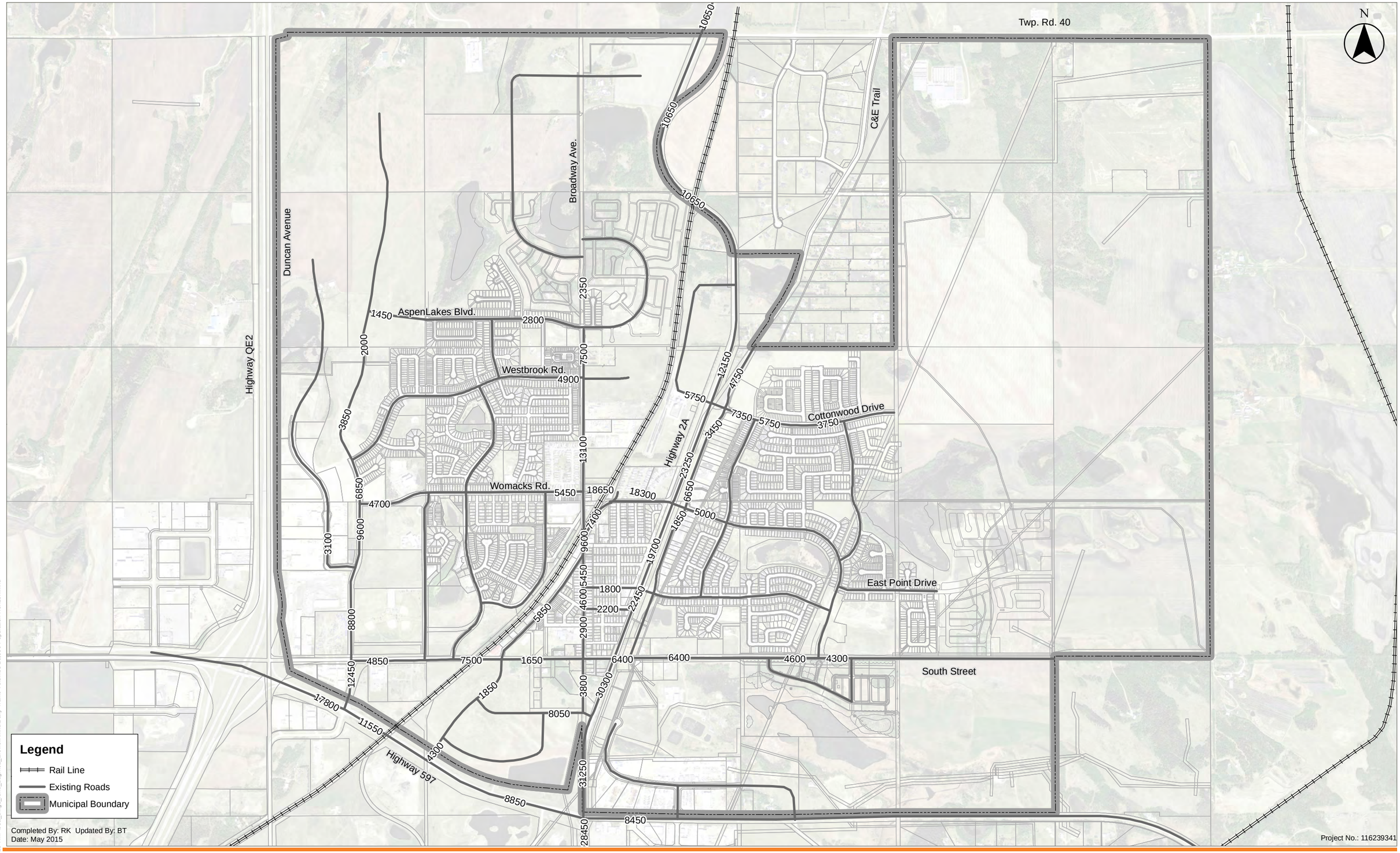

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Figure 3.3c: Daily Traffic Volumes
16,500 Population Horizon

Transportation Master Plan

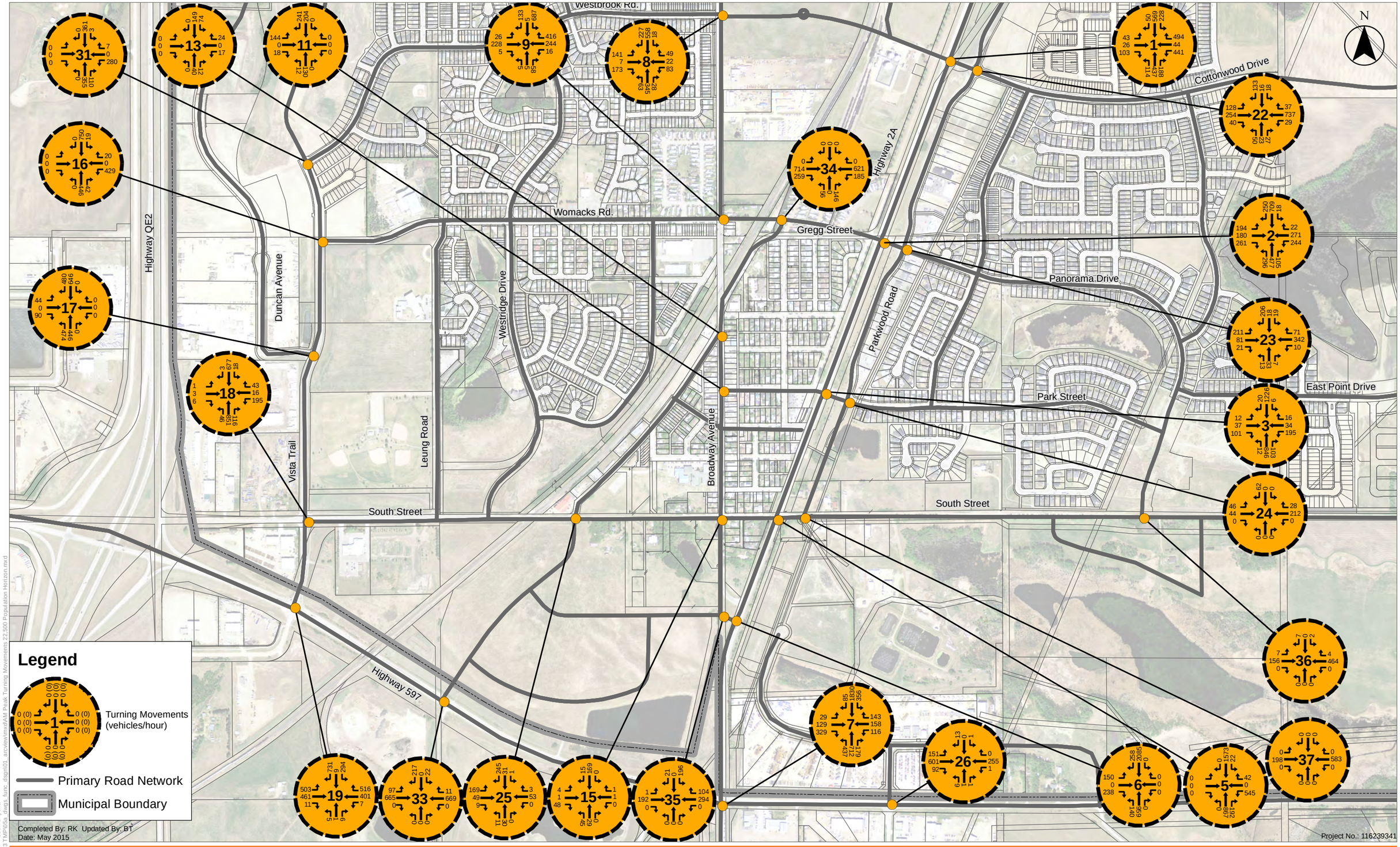

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Figure 3.4a-AM Peak Turning Movements
22,500 Population Horizon
Transportation Master Plan

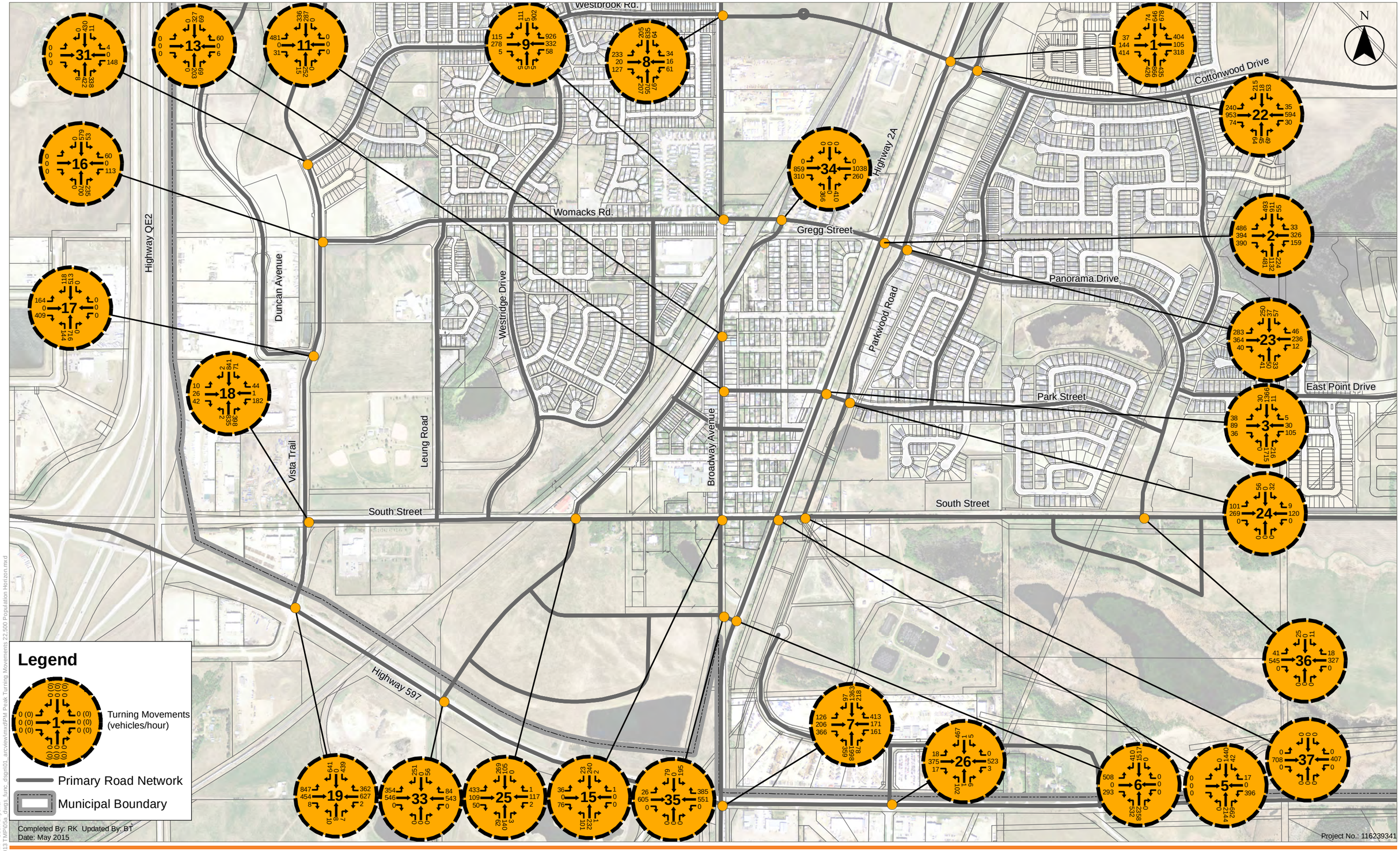

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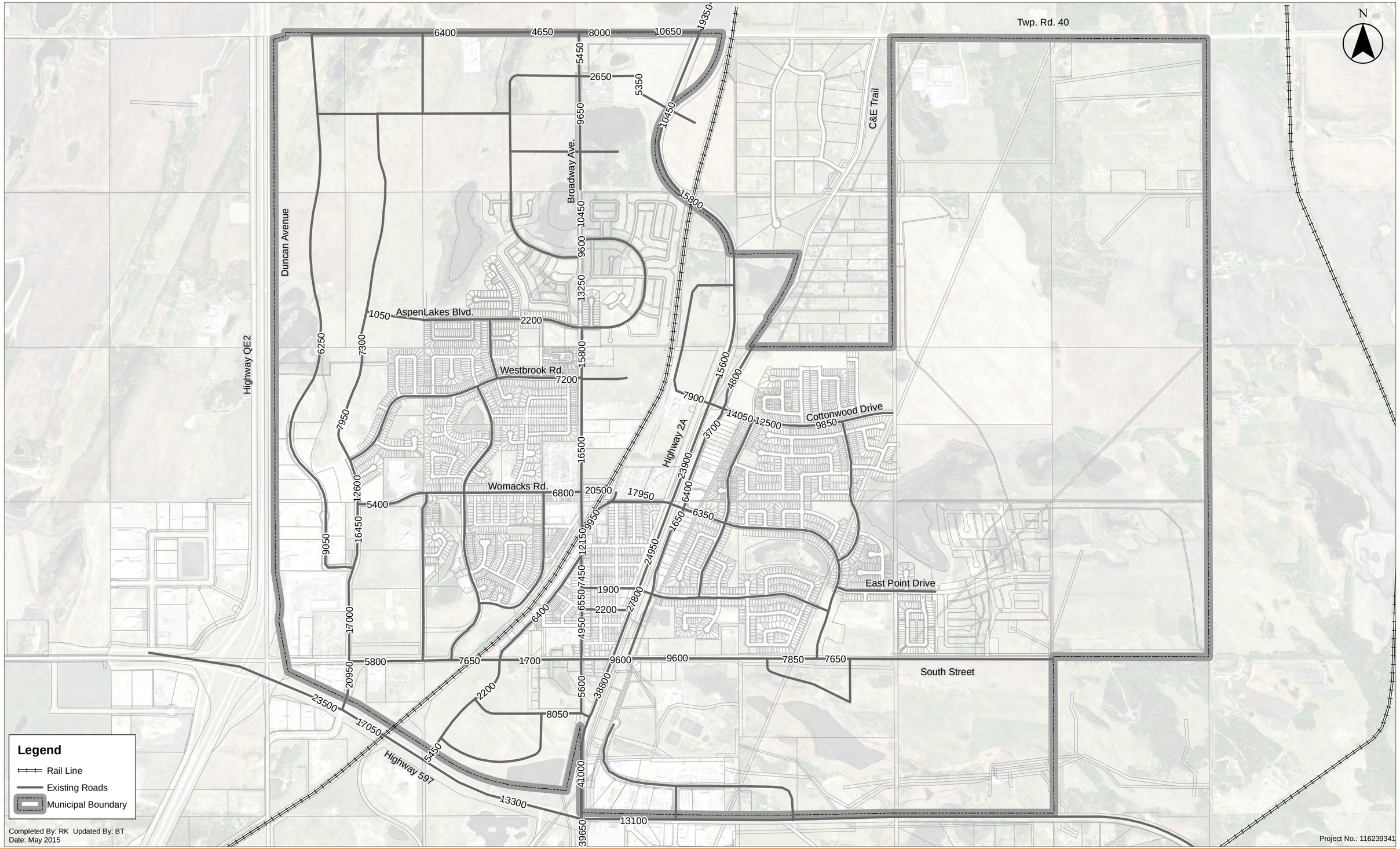
Figure 3.4b-PM Peak Turning Movements
22,500 Population Horizon
Transportation Master Plan



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BLACKFALDS ALBERTA

Figure 3.4c: Daily Traffic Volumes 22,500 Population Horizon

Transportation Master Plan

4.0 LONG TERM ROAD NETWORK

The recommended transportation plan consists of a long term road network and the staging of the network. The long term road network is intended to provide a structure for the Town's transportation system that is sufficient to accommodate future traffic volumes. Establishing the long term road network also allows the Town to reserve right-of-way for infrastructure and provides direction for future development. In some areas, development plans have been approved without considering the long term road network and proposed roadway alignments had to be shifted to accommodate these plans. Having an approved long term road network will allow the Town to ensure that future development plans include the necessary supporting transportation infrastructure. Having a long term road network in place will also assist the Town in negotiating access and crossings with Alberta Transportation and CP Rail.

The recommended long term road network is shown in Figure 4.1 and was established based on the Town's existing road network, future land use and transportation plans, and local preferences. The staging of this network will be discussed in subsequent sections. Important features of the proposed network are discussed below:

East Road Network: With continued growth to the east, it is recommended that Cottonwood Drive be extended to the east as a four lane arterial. A new north/south four lane arterial is also proposed that would connect South Street to Township Road 400.

Outer Ring Road: To support full build out of lands within the Town boundary and future growth beyond Township Road 400 and Range Road 270, an outer ring road consisting of a four lane divided arterial is proposed. The alignment of this ring road will need to be finalized as development proceeds, but it is currently shown on the Town's north and east boundaries. The existing Highway 597 forms the southern piece of the ring road.

Dangerous Goods Route: The Town's existing dangerous goods route currently uses East Railway Street and Broadway Avenue through downtown in addition to the provincial roadways of Highway 597 and Highway 2A. Dangerous goods will shift to Duncan Avenue once it has been constructed to Township Road 400 and will no longer enter the downtown.

South Street: South Street currently does not connect to Highway 2A from the west. Making South Street – Highway 2A a four-legged intersection would improve connectivity in the Town. This connection can be considered in the future, but the effect of additional traffic for residents fronting onto South Street will also need to be addressed. Further, the construction of this connection would require extensive land acquisition, relocation of major high pressure gas pipelines, and considerable grading to accommodate the vertical geometrics required for arterial roadways.

Highway 2A Operations: Several intersections on Parkwood Road are close to Highway 2A. Because they serve a commercial area, these closely spaced intersections will carry enough traffic to potentially cause operational issues with Highway 2A. Signals on Highway 2A and on Parkwood Road will need to be coordinated to reduce queuing between intersections. The speed limit on Highway 2A should be reduced to 60 km/h within the Town.

In addition to Township Road 540, the long term road network also proposes an additional access onto Highway 2A north of Cottonwood Drive. Providing an additional access point onto Highway 2A will help disperse traffic volumes from Gregg Street. Approval from Alberta Transportation will be required prior to construction of this access.

4.1 ROADWAY CROSS-SECTIONS

The Town's Design Standards currently include the following cross-sections shown in Table 4.1Pedestrian facilities are required on both sides of all local, collector, and arterial streets, except rural arterials, where sidewalks are only required on one side of the street, and roads in industrial areas, where no sidewalks are required. In addition to the cross-sections shown below, the Town also has cross-sections for divided collectors and locals.

Table 4.1 – Blackfalds Standard Cross-Sections

Design Standard	Design Standard
4-lane Arterial Undivided	15.8 m c/w[1], 30.0 m ROW[2]. No parking.
4-lane Collector Undivided	14.5 m c/w, 26.5 m ROW. No parking.
2-lane Collector Undivided	12 m c/w, 22 m ROW. Parking on both sides.
2-lane Industrial Collector	13.25 m c/w, 22 m ROW. Parking on both sides.

Should there be property constraints to implementing the proposed road network, it should be noted that three lane roadways, with one through lane in each direction and left turn bays in the middle, require less ROW and can carry similar traffic volumes while operating with improved safety. A three lane road can typically carry up to 20,000 vehicles/day.[3].

To encourage pedestrian travel, it is recommended that the rural arterial cross-section be updated to include sidewalks on both sides of the street and that sidewalks be required on at least one side of the street in industrial areas.

[1] c/w: carriageway (curb face to curb face)
[2] ROW: right-of-way
[3] See the US Federal Highway Administration's *Road Diet Informational Guide* (Nov. 2014).

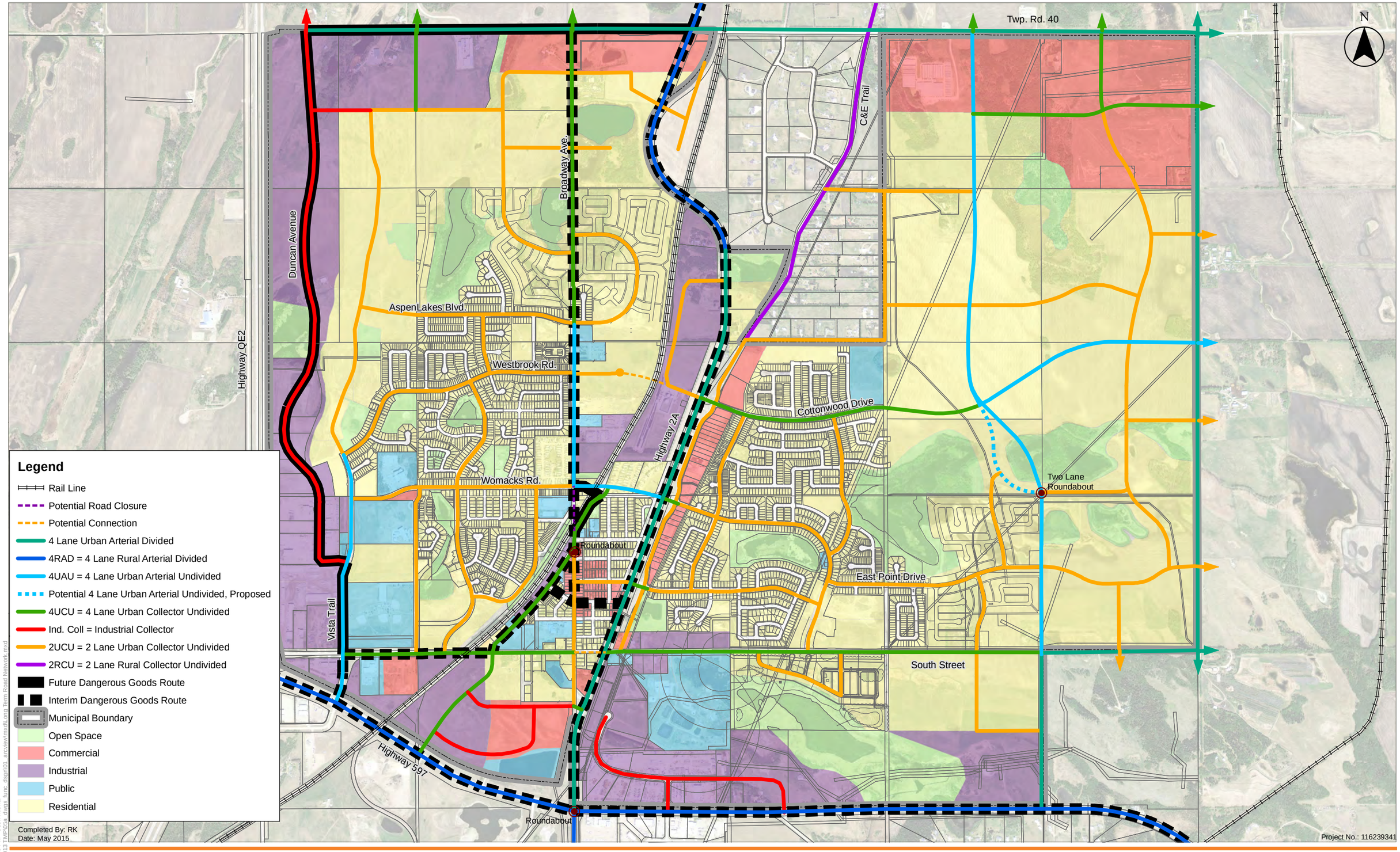

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Figure 4.1: Overall Long Term Road Network

Transportation Master Plan

5.0 TRANSPORTATION ANALYSIS

In addition to the long term transportation network, capacity analysis was completed at important intersections to determine the need for upgrades at 12K, 16.5K, and 22.5K population horizons. The analysis focuses on existing intersections and roadways. It is assumed that future roadways will constructed in tandem with future developments and traffic impact assessments will be completed for those developments to detail transportation requirements.

In general, the following considerations were used to guide the recommended improvements:

- Delay: improvements should reduce delay for vehicular traffic while not impeding other modes. The delays primarily based on the capacity analysis results. Prior to recommending signalization, the Transportation Association of Canada's Traffic Signal Warrant was also reviewed where appropriate.
- Cost: improvements should be limited to the minimum required to improve intersection performance. Usage of the existing pavement structure should be maximized, for example, by reconfiguring lane markings, prior to recommending improvements.
- Right-of-way: improvements should minimize the impact to existing developments in the Town.
- Network cohesion: improvements at one intersection should be consistent with adjacent intersections and the long term road network. For example, a road should not alternate between four and two lane sections even if four lanes are only required at some intersections.

5.1 CAPACITY ANALYSIS CRITERIA

Intersection capacity analysis was completed using Synchro software, which is based on the Highway Capacity Manual (HCM). The HCM methodology uses the existing (or projected) traffic volumes and intersection lane configuration, and outputs an average delay and volume to capacity (v/c) ratio.

The average delay is the estimated delay in seconds for all vehicles passing through the intersection. The delay includes such things as waiting at a red light, or waiting for gap in conflicting traffic or pedestrians while making a left or right turn. The delay is commonly summarized as a level of service (LOS), which ranks delays based on the following criteria from the HCM shown in Table 5.1.

The v/c ratio is calculated by dividing the expected traffic volumes by the capacity of the roadway. Vehicle capacity is the maximum number of vehicles that can pass a given point and is affected by the intersection geometry (number of lanes), traffic controls (for example, stop, yield, or signal) and conflicting traffic volumes.

Table 5.1 – Level of Service Criteria

Level of Service	Control Delay (seconds per vehicle)	
	Signalized Intersection	Unsignalized Intersection
A	10.0 or less	10.0 or less
B	10.1 to 20.0	10.1 to 15
C	20.1 to 35.0	15.1 to 25.0
D	35.1 to 55.0	25.1 to 35.0
E	55.1 to 80.0	35.1 to 50.0
F	More than 80.0	More than 50.0

LOS D and v/c < 0.90 have been chosen for this analysis as the performance targets for the Town of Blackfalds. If the expected intersection performance is worse than the targets, then mitigation measures will be considered. As is typical for Alberta Towns, most intersections in Blackfalds currently meet these targets. However, as Blackfalds reaches the population requirements for incorporating as a city (in number only), increasing traffic volumes and congestion are expected to make it progressively more difficult to meet these performance targets with a reasonable transportation expenditure. Thus, most cities are willing to tolerate reduced performance at the busiest intersections during the peak travel times.

The analysis focuses on the peak 15 minutes in the morning and afternoon, performance during off-peak times will be better. The traffic modeling criteria used for the Synchro analysis is shown in the following Table 5.2.

Table 5.2 – Traffic Modeling Criteria

Peak Hour Factor	Existing: 0.83 (AM), 0.89 (PM); Future: 0.92 (reflects future congestion).
Minimum Green Time	Main Street: 20 s Side Street: 10 s Left turn: 8 s
Intergreen Time	Amber: 4 s Red: 1 s
Saturation Flow	1900 vehicles per hour per lane
Pedestrian Crossing Times	All signalized intersections timed to accommodate pedestrians.

5.2 12K POPULATION HORIZON

Using the recommended long term road network as a foundation, the 12K horizon traffic volumes were analyzed to identify recommended improvements. The detailed capacity analysis for the 12K horizon is included in Appendix D. The recommended improvements are shown in Figure 5.1 and described below. Proposed improvements on Alberta Transportation's provincial highway network are denoted with an "A", improvements entirely under the Town's jurisdiction are denoted with a "B".

5.2.1 Gregg-Womacks Rail Crossing (B1.1)

Replacing the existing 35-degree rail crossing with a 90-degree crossing will improve safety across the rail and allow traffic to cross the rail without going through the downtown or past the school. With the new crossing and additional development north of Womacks Road more traffic is expected on Gregg Street now that it is the primary accesses for the northeast are of Blackfalds onto Highway 2A. Gregg Street will need to be widened to four lanes to accommodate the new traffic along with improvements to intersections on both sides of the rail. The design for Gregg Street is being finalized separately but will likely require:

- Additional right-of-way from the trailer park on the north side of Gregg Street.
- Negotiate design of new rail crossing at Gregg/Womacks with CP and construct crossing.
- Close existing Broadway Avenue Crossing.
- Signalize Womacks Road – Broadway Avenue.
- Widen Gregg Street to four lanes.
- Construct new intersection of Gregg Street – Broadway Avenue.

5.2.2 Parkwood Road – Panorama Drive (B1.2)

With build out of the highway commercial adjacent to Highway 2A this intersection will require signalization to increase its capacity. No additional pavement is proposed as the roads are already fairly wide, but turn bays should be explicitly delineated with pavement markings. This signal will need to be coordinated with the closely spaced adjacent signal on Highway 2A.

- Install traffic signals.
- Use pavement markings to delineate turn bays.

5.2.3 East Railway Street Extension to Highway 597 (B1.3)

Construct extension of East Railway Street south to Highway 597 as part of development in the northwest quadrant of Highway 2A – Highway 597. This road is shown in the long term road network as a four lane road; although traffic volumes do not warrant a four-lane cross-section,

this road may serve as an alternate route for traffic on Highway 2A with the potential to relieve congestion on the highway.

- Extend East Railway Street to Highway 597.

5.2.4 East Railway Street – South Street (B1.4)

With increasing development in south Blackfalds and the addition of a south leg at this intersection, an additional EBL turn bay is recommended to reduce delays. East Railway Street approaches South Street at a skew and should be realigned.

- Construct dedicated EBL turn bay and realign the north approach to improve intersection geometry.

5.2.5 Vista Trail – Westbrook Road (B1.5)

Development to the north will increase traffic on Vista Trail. An additional NBR turn bay is recommended to reduce delays for northbound traffic.

- Construct dedicated NBR turn bay.

5.2.6 Broadway Avenue – New Collector Intersection (B1.6)

Construct new collector intersection at the south end of Broadway Avenue to support development in the northwest quadrant of Highway 2A – Highway 597. This intersection is currently shown very close to Highway 2A, but should be located as far west as possible to provide additional space between the intersection and Highway 2A. The location of this intersection will be finalized as part of the development planning process.

- Construct new intersection.

5.2.7 Highway 2A Widening (A1.1)

Traffic volumes on Highway 2A north of Highway 597 are already close to 20,000 vehicles per day, with additional growth in Blackfalds, daily traffic is expected to increase to over 25,000 vehicles per day. A four lane cross-section will be warranted on all of Highway 2A within the Town.

- Widen all of Highway 2A north of Highway 597 to a four lane cross-section.
- With increasing urbanization of the corridor, the 60km/h speed zone should include all of Highway 2A within the Town.

5.2.8 Highway 2A – Cottonwood Drive (A1.2)

Build out of the highway commercial east of Highway 2A is expected to increase traffic volumes on this intersection, which will need to be upgraded to full signals with separate WBR and WBL turn bays.

- Install traffic signals.
- Construct dedicated WBR turn bay.

5.2.9 Highway 2A – Panorama Drive (A1.3)

Construction of the Gregg-Womacks crossing is expected to divert significant existing traffic as well as new traffic to west leg of this intersection. In addition, build out of the highway commercial east of Highway 2A will also generate increased traffic on the east leg. This intersection is expected to be the busiest intersection in the Town and significant improvements will be required to accommodate the new volumes. Expanding this intersection will also require the closure of the intersection of Highway Avenue and Gregg Street.

- Widen west approach to two EBT lanes.
- Construct dual NBL turn bays, and dedicated SBL, SBR, EBL, and WBL turn bays.
- Close Highway Avenue at Gregg Street.

5.2.10 Highway 2A – South Street (A1.4)

Additional residential development on South Street will increase traffic volumes a Highway 2A. Traffic signals and dedicated WBL and WBR turn bays are recommended to reduce delays for traffic on South Street.

- Install traffic signals.
- Construct dedicated WBR turn bay.

5.2.11 Highway 2A – Broadway Avenue (A1.5)

With commercial development in the northwest quadrant of Highway 2A – Highway 597 traffic volumes at the south end of Broadway Avenue are expected to increase and the following improvements are recommended to reduce delays at the intersections.

- Install traffic signals.
- Construct dedicated EBL and NBL turn bays.

5.2.12 Highway 597 – East Railway Street (A1.6)

With commercial development in the northwest quadrant of Highway 2A – Highway 597, this intersection will provide connectivity to the new developments from the south.

- Construct new intersection on Highway 597.

5.2.13 Highway 597 – Industrial Way (A1.7)

To increase capacity at this intersection it is recommended that pavement markings be added to explicitly delineate turn bays on Industrial Way. While drivers may already informally understand that the road is wide enough to allow two vehicles to approach the stop line, additional pavement markings will ensure there is sufficient capacity to meet forecasted traffic volumes.

- Use pavement markings to delineate turn bays on Industrial Way.

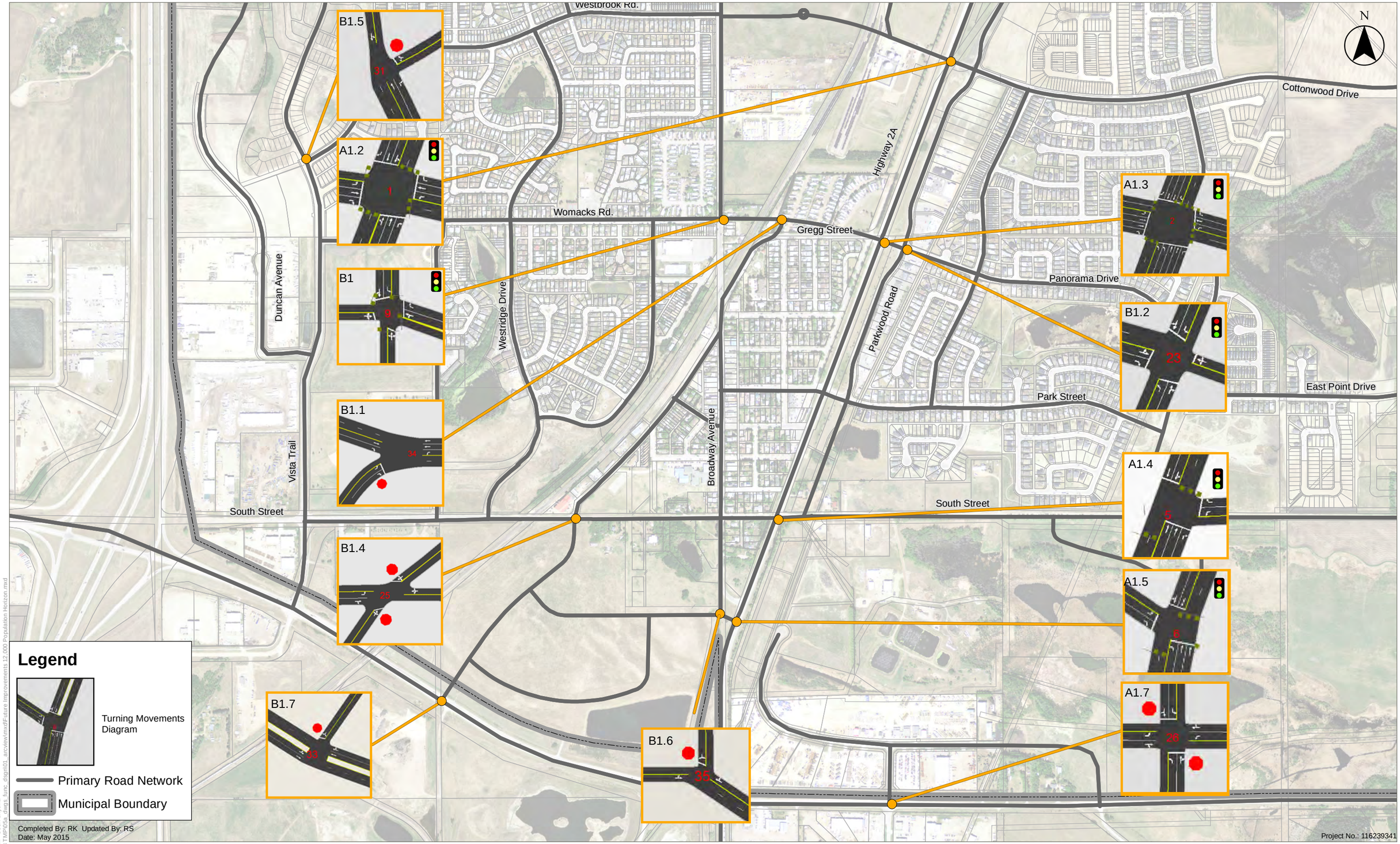

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Figure 5.1 - Future Improvements
12,000 Population Horizon

Transportation Master Plan

5.3 16.5K POPULATION HORIZON

Using the recommended short term road network as a foundation, the 16.5K horizon traffic volumes were analyzed to identify recommended improvements. The detailed capacity analysis for the 16.5K horizon is included in Appendix E. The recommended improvements are shown in Figure 5.2 and described below.

5.3.1 Gregg Street – Broadway Avenue (B2.1)

Continued development in northwest Blackfalds will increase traffic on Gregg Street and Womacks Road as the primary connection to Highway 2A. Traffic signals are recommended to reduce delays for traffic turning from Broadway Avenue.

- Install traffic signals.

5.3.2 Womacks Road – Broadway Avenue (B2.2)

Continued development in northwest Blackfalds will increase traffic turning to and from the east to access Highway 2A. The following intersection improvements are recommended to reduce delays for these movements, the NBL slot turn bay is required to balance the dual SBL turn bay. Signal timings at Womacks Road and Gregg Street will need to be coordinated with each other and to improve operations and facilitate a safe rail preemption sequence.

- Construct channelized WBR turn bay, dual SBL turn bay, and dedicated NBL turn bay.

5.3.3 Cottonwood Drive – Parkwood Road (B2.3)

Continued development in east Blackfalds will increase traffic volumes on Cottonwood Drive and the difficulty of making turns from Parkwood Road. A traffic signal is recommended to reduce delays for traffic accessing the highway commercial. This signal will need to be coordinated with the closely spaced adjacent signal on Highway 2A.

- Install traffic signals.

5.3.4 Broadway Avenue – Westbrooke Road (B2.4)

Traffic volumes on the north, east, and south legs of this intersection are expected to increase with nearby development and a signal is recommended to reduce delays.

- Install traffic signals.

5.3.5 Broadway Avenue North Extension (B2.5)

With increasing development in north Blackfalds, traffic volumes on Broadway Avenue north of Womacks Road will increase to over 13,000 vehicles per day. Widening to a four lane cross-section on Broadway Avenue is recommended at this horizon to accommodate the increased traffic. As previously noted, while the Town prefers a four lane cross-section, a three lane cross-section may also be sufficient to accommodate traffic should right-of-way be an issue.

- Widen Broadway Avenue to a four lane cross-section from Womacks Road to north of Westbrooke Road.

5.3.6 Vista Trail – South Street (B2.6)

The existing shared through and right turn lane is expected to experience higher delays at this horizon and a separate right turn bay is recommended.

- Construct dedicated NBR turn bay.

5.3.7 Broadway Avenue – New Collector Intersection (B2.7)

This intersection will serve new commercial and industrial developments and the following improvements are recommended to serve the increased traffic volumes:

- Install traffic signals.
- Construct EBL and WBR turn bays

5.3.8 Highway 2A – Cottonwood Drive (A2.1)

With increasing development in east Blackfalds and on the west side of Highway 2A traffic volumes on this intersection will increase significantly. The following improvements are recommended to reduce delays:

- Construct dedicated EBR, NBL, SBR, and SBL turn bays.

5.3.9 Highway 2A – Panorama Drive (A2.2)

This intersection will remain the primary access to Highway 2A for new developments in northwest Blackfalds and traffic volumes are expected to increase due to development.

- Construct dual EBL turn bay and channelized SBR turn bay. Widen east approach to two WBT lanes.

5.3.10 Highway 2A – Park Street (A2.3)

With increasing traffic on Highway 2A, reconfiguring the side street is recommended to improve efficiency at this intersection so that more green time can be given to highway traffic. The proposed configuration does not require additional pavement.

- Reconfigure Park Street approaches to provide a dedicated left turn and shared through/right lane using pavement marking and signage changes.

5.3.11 Highway 2A – South Street (A2.4)

With ongoing development in east Blackfalds, upgrading to a dual WBL turn is recommended to reduce delays on the side street.

- Construct dual WBL turn bay.

5.3.12 Highway 2A – Broadway Avenue (A2.5)

Additional commercial development in the northwest quadrant of Highway 2A – Highway 597 will increase traffic volumes at this intersection. The following improvements are recommended to reduce delays:

- Construct dual EBL turn bay, dedicated SBR turn bay.

5.3.13 Highway 597 – Industrial Way (A2.6)

Increasing traffic on Highway 597 will make it more difficult to turn onto the highway from Industrial Way. A dedicated SBR turn bay is recommended to reduce delays.

- Widen north leg to provide a dedicated SBR turn bay.

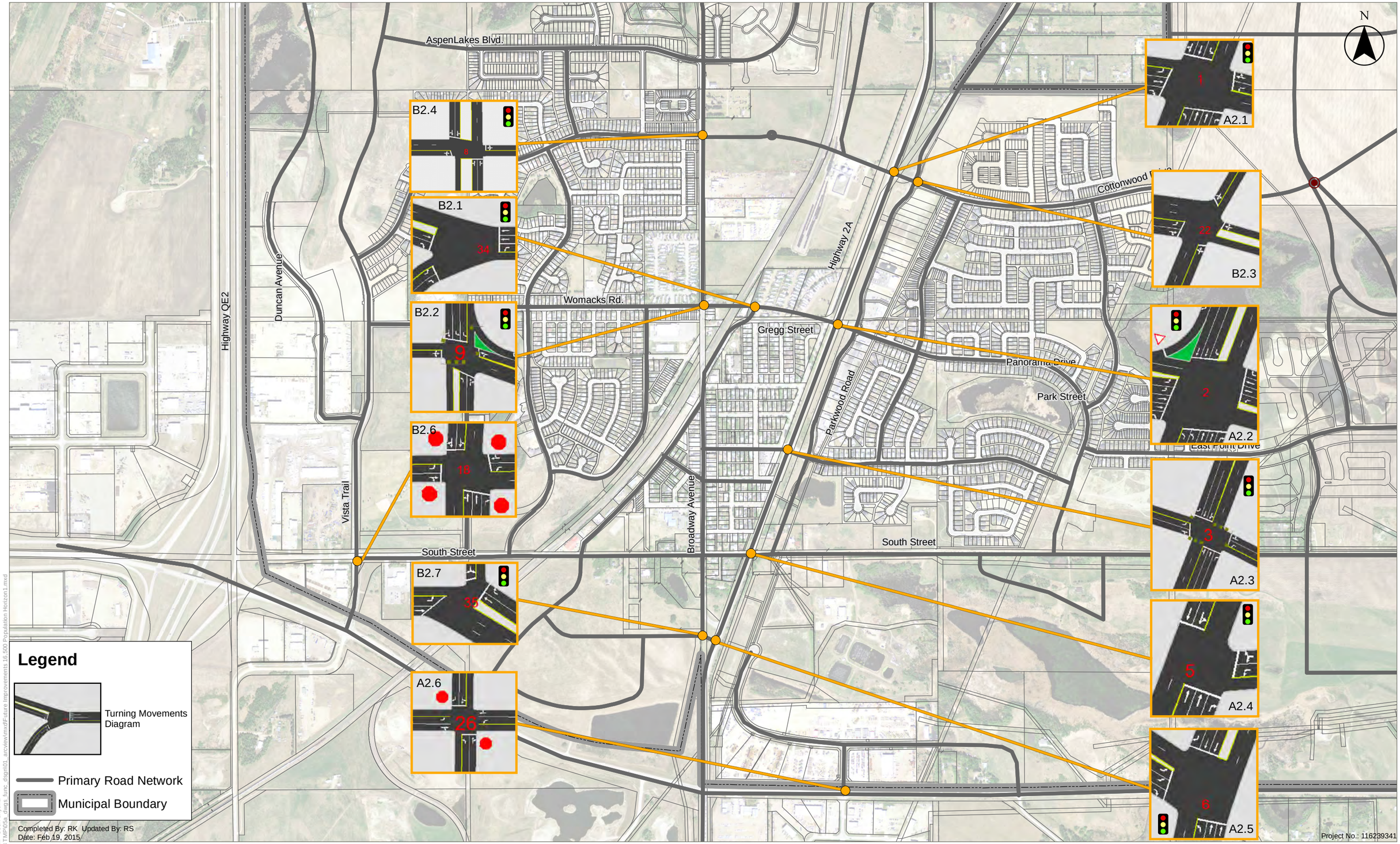

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Figure 5.2- Future Improvements
16,500 Population Horizon
Transportation Master Plan

5.4 22.5K ROADWAY NETWORK

Using the recommended medium term road network as a foundation, the 22.5K horizon traffic volumes were analyzed to identify the medium term recommended improvements. The detailed capacity analysis for the 22.5K horizon is included in Appendix F. The recommended improvements are shown in Figure 5.3 and described below.

5.4.1 Womacks Road – Broadway Avenue (B3.1)

The existing shared eastbound left/through/right lane is expected to experience high delays at this horizon. Separating left turning traffic will reduce delays for eastbound traffic.

- Construct dedicated EBL turn bay.

5.4.2 Vista Trail – Duncan Avenue (B3.2)

The existing all-way stop control configuration is expected to experience high delays due to increasing traffic on Vista Trail and industrial development on Duncan Avenue. The following improvements are recommended to reduce delays.

- Install traffic signals.
- Construct dedicated EBR turn bay.

5.4.3 Vista Trail – Womacks Road (B3.3)

Increasing volumes on Vista Trail will make it difficult for traffic on Womacks Road to turn onto Vista Trail. A traffic signal is recommended to reduce delays.

- Install traffic signals.

5.4.4 Vista Trail – South Street (B3.4)

Increasing volumes on Vista Trail will make it difficult for traffic on South Street to turn onto Vista Trail. A traffic signal is recommended to reduce delays.

- Install traffic signals.

5.4.5 East Railway Street and South Street (B3.5)

Delays on the East Railway Street will warrant a signal to facilitate movements onto and across South Street. The need for railway preemption at this signal should also be considered.

- Install traffic signals

5.4.6 Broadway Avenue – Westbrooke Road (B3.6)

With increasing development in northwest Blackfalds, signalization is recommended at this intersection.

- Install traffic signals.

5.4.7 East Railway Street – Broadway Avenue (B3.7)

Increasing growth in the Town is expected to draw more traffic to the downtown. Improvements are recommended at this intersection to reduce delays. The existing intersection is heavily skewed and while capacity improvements may not be required at the 22.5K horizon, improvements can be considered at early horizons to improve safety. Stantec has completed a conceptual design for a roundabout at this intersection that would address both capacity and safety issues, though this design would require additional right-of-way

- Improve intersection, preferably with a roundabout. Install traffic signals if roundabout deemed unfeasible.

5.4.8 Highway 2A - Cottonwood Drive (A3.1)

Continued development in east Blackfalds will increase traffic volumes at this intersection. The following improvements are recommended to reduce delays.

- Construct dual SBL and WBL turn bays.

5.4.9 Highway 2A – Park Street (A3.2)

The existing shared northbound through and left turn lane is expected to experience significant delays at this horizon. Construction a dedicated left turn bay is recommended to separate turning traffic.

- Construct dedicated NBL turn bay.

5.4.10 Highway 2A Widening at Broadway Avenue (A3.3)

Daily traffic volumes of 41,000 vehicles per day are expected on the south end of Highway 2A in Blackfalds. The capacity analysis indicates that even with the northbound through widened to three lanes, congestion is expected at Broadway Avenue. Widening of the Highway 2A corridor to six lanes through the Town should be considered. The need and extents of the six-lane cross-section should be confirmed through a corridor study and will depend on the future traffic characteristics, including the attractiveness of Red Deer as a destination for residents as the Town grows and more local employment and recreation opportunities are available, and acceptable levels of congestion.

- Potential widening may need to be considered along the Highway 2A corridor, particularly at Broadway Street.

5.4.11 Vista Trail – Highway 597 (A3.4)

- Construct channelized SBR turn bay, dual SBL turn bay, and EBL turn bay.

5.4.12 Highway 597 – Industrial Way (A3.5)

Increasing volumes on Highway 597 will make it difficult for traffic on Industrial Way to turn onto the highway. A traffic signal is recommended to reduce delays.

- Install traffic signals.

5.4.13 Highway 597 – East Railway Street (A3.6)

Increasing traffic volumes on Highway 597 make it difficult for traffic on East Railway Street to turn onto the highway. A traffic signal is recommended to reduce delays.

- Install traffic signals.
- Construct dedicated SBR turn bay to separate SBR and SBL traffic.

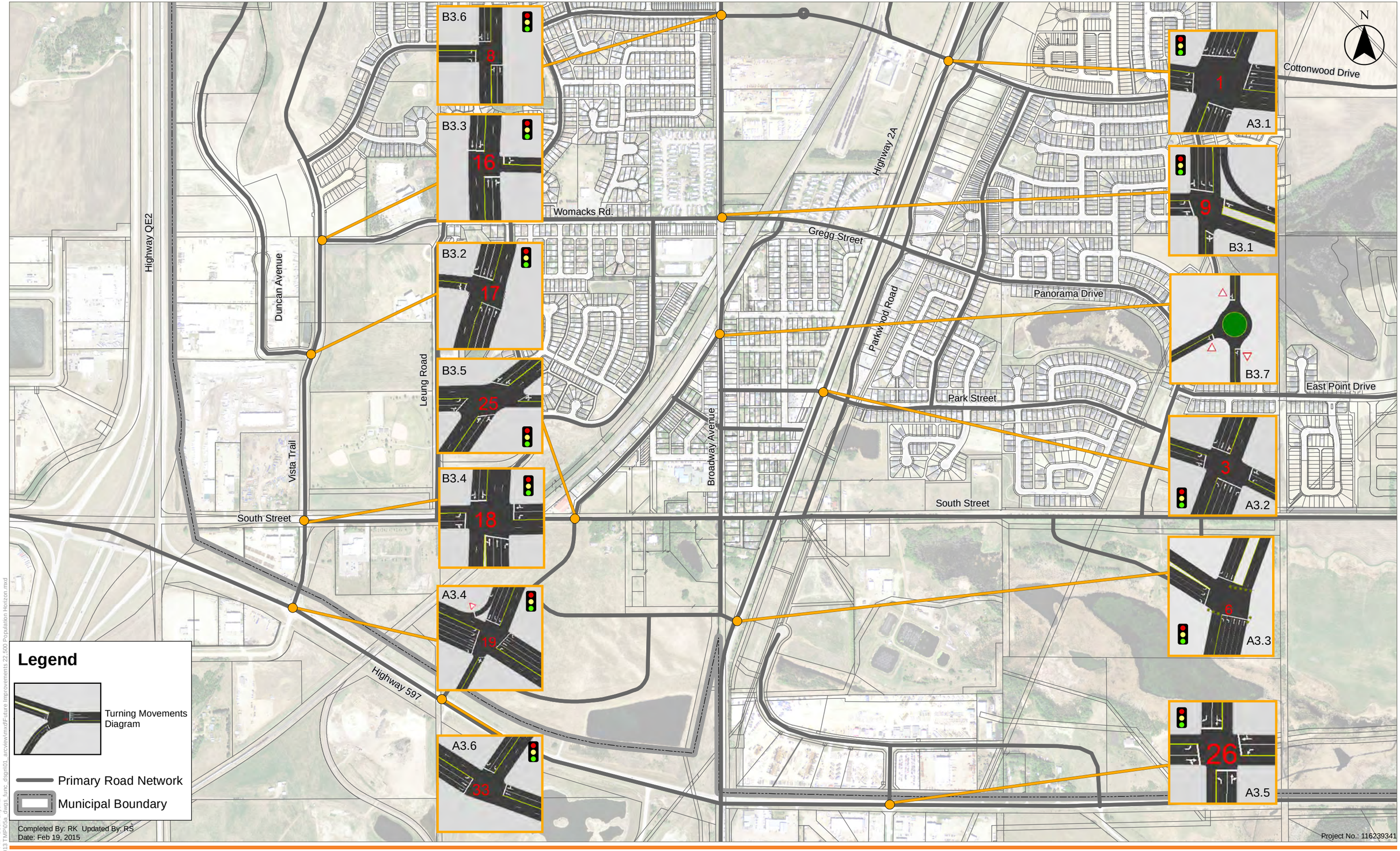

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Figure 5.3- Future Improvements
22,500 Population Horizon

Transportation Master Plan

5.5 RAIL CROSSINGS

A north-south railroad operated by CP runs through the middle of the Town. The railroad has traditionally been an impediment to east-west travel in the Town with traffic forced to funnel through two crossings: one at South Street and the other at Broadway Avenue. With additional development west of the railroad, safe and efficient rail crossings will continue to be a priority for the Town. As previously discussed, the proposed replacement of the Broadway Avenue crossing with the new Gregg-Womacks connection will help improve rail safety within the Town.

Transport Canada's *Grade Crossings Standards* require a gated crossing when the cross-product of the Average Annual Daily Traffic (AADT) and the number of trains per day exceeds 50,000. A grade-separated crossing is commonly considered when the cross-product exceeds 200,000. The two existing railroad crossings within the Town at South Street and Broadway Avenue are already gated.

Rail traffic currently averages about 15 trains per day and may increase to 20 trains per day in the foreseeable future. Once the Gregg-Womacks connection is constructed, daily traffic volumes across the rail are expected to be about 6,300 in the short term so that the cross-product of 94,500 warrants a gated crossing.

Projected daily traffic volumes on South Street across the rail are expected to be 7,650 in the 22.5K horizon, so that the cross product of 153,000 does not warrant grade separation.

Projected daily traffic volumes across the Gregg-Womacks connection are expected to increase from 11,600 in the 12K horizon to 20,500 in the 22.5K horizon. Depending on the volume of future rail traffic, the cross-product is expected to exceed 200,000 sometime between these two horizons and grade separation should be considered. However, the ROW requirements for grade separation, including the need to change the vertical alignments of Broadway Avenue on both sides of the railroad, make grade separation prohibitively expensive.

Traffic and train volumes at the future Gregg-Womacks connection should be monitored. As there are several alternate rail crossings, including South Street and Highway 597 via Vista Trail, as well as future accesses to Highway 2A, alternate routes are available if there is significant congestion at the crossing. Furthermore, if the industrial site on the southwest quadrant of Highway 2A – Cottonwood Drive redevelops, there may be an opportunity to remove the rail spur and connect Westbrooke Road to Highway 2A to provide another rail crossing.

Railway preemption will likely be required at the proposed traffic signals on both sides of the Gregg-Womacks crossing. The need for preemption at South Street – East Railway Street should also be considered when that intersection is signalized.

6.0 ACTIVE MODES TRANSPORTATION

The Public Health Association of Canada describes Active Transportation as follows:

> *"Active transportation refers to any form of human-powered transportation – walking, cycling, using a wheelchair, in-line skating or skateboarding. There are many ways to engage in active transportation, whether it is walking to the bus stop, or cycling to school/work.*
>
> *Active transportation includes many active modes and methods of travel such as:*
>
> - *walking/jogging/running;*
> - *cycling;*
> - *in-line skating;*
> - *skateboarding;*
> - *non-mechanized wheelchairing; and*
> - *snowshoeing/skiing.*
>
> *There are numerous benefits from active transportation:*
>
> - *Health – Active transportation provides an opportunity to be physically active on a regular basis.*
> - *Social – Active transportation is accessible to Canadians and increases social interactions.*
> - *Transportation – Active transportation reduces road congestion.*
> - *Environmental – Active transportation is environmentally-friendly and can contribute to reductions in greenhouse gas emissions.*
> - *Economic – Active transportation saves money on gas and parking.*

The Public Health Association of Canada also notes that "*communities that endorse active transportation:*

- *have dedicated bicycle lanes and routes;*
- *advocate for sharing the road with cyclists;*
- *undertake specific measures to ensure the safe integration of pedestrians, cyclists and other active users among motorized vehicle traffic;*
- *regularly maintain and upgrade pedestrian and cycling facilities;*
- *provide storage for bicycles throughout the community;*
- *have an integrated network of pedestrian and cycling paths that are designed for efficient transportation as well as recreation;*

- *favour urban design that reduces the distances that people have to travel to get to work, retail areas, schools and recreational/leisure pursuits;*
- *encourage the retail and service sectors to support customers who use active modes of transportation;*
- *plan streetscapes to be visually-pleasing and inviting to pedestrians;*
- *have a network of greenspaces throughout the urban and suburban areas;*
- *make access to public transit easily integrated with pedestrian and cycling facilities;*
- *encourage driver education about sharing the road with others; and*
- *encourage feedback from citizens, pedestrian and cycling advocacy groups."*

In general, the Town's Design Guidelines and urban planning documents are prepared to ensure that new development addresses the above noted active modes endorsements. For existing development, the following typical improvements are recommended to be included as part of all roadway and walkway improvement projects:

Table 6.1 – Recommended Active Modes Improvements

Recommended Active Modes Improvements	
Recommendation: Improve connectivity and safety of crossings at Highway 2A **Example:** Disconnectivity and unclear crossing identification. Additional signage and concrete delineation would be beneficial.	
Recommendation: Improve connectivity across CPR Tracks **Example:** South Street CPR crossing has no crosswalk, which will be important when future development is completed in southwest area of Blackfalds.	

Recommended Active Modes Improvements

Recommendation: Ensure pararamps are implemented at all crossings to accommodate all users for wheelchairs, rollerblades, bikes, etc. **Example:** Crosswalk with no pararamp.	
Recommendation: Apply Town's bright yellow crosswalk signs at all key crosswalks. **Example:** Womacks Road and Polar Avenue crosswalk.	
Recommendation: Continue to enhance aesthetics to attract active mode users. **Example:** Downtown Streetscaping theme includes decorative landscaping, benches, bike racks, bulbs, and bollards.	
Recommendation: Ensure all commercial businesses have pedestrian access. **Example:** Construction of sidewalks on Parkwood Road.	

Recommended Active Modes Improvements

Recommendation: Improve bicycling connectivity by integrating bike lanes into the Town's cross-section.

Example: Bike lane with parking in commercial land use.

7.0 PUBLIC ENGAGEMENT

An Open House was facilitated on February 26, 2015 at the Abbey Centre to present the Transportation Master Plan to the general public. Stantec and the Town presented displays showing peak A.M. and P.M. turning movements, recommended intersection improvements, future land use, and the long term road network. Alberta Transportation also participated in the Open House with a display board to present the most current proposed roundabout configuration of the Highway 2A and Highway 597 intersection and discuss their plans.

In general, the Open House was well attended and received by the general public. An attendance list was filled out and everyone was encouraged to provide formal feedback by utilizing the feedback forms provided and submitting them at or following the Open House. Transport Canada roundabout operational brochures were provided by Alberta Transportation for public interest.

For confidentiality reasons, the feedback and attendance forms are not included in this document, but can be requested from the Town by contacting the Town Office.

FEEDBACK FORM

Stantec

Public Open House
Town of Blackfalds – Transportation Master Plan
February 26, 2015

BLACKFALDS

Please take a moment to answer the following question and provide any additional comments in regards to the Transportation Master Plan following today's discussions.

The information you provide will be reviewed and taken into consideration in further discussions on this matter.

COMMENTS

What are your primary comments/concerns regarding the current and proposed transportation network (vehicle, cyclist, pedestrian) in the Town of Blackfalds?

Additional Comments:

Contact Information (optional)

Personal information is collected under the authority of Section 33 (c) of the *Alberta Freedom of Information and Protection of Privacy Act* (FOIP) and will be protected under Part 2 of the FOIP Act. Personal information collected on this form will be used for the sole purpose of the Town of Blackfalds "Transportation Master Plan". Questions regarding this collection of personal information may be directed to the Town of Blackfalds FOIP Coordinator at 403-885-6248.

The personal information contained on this form is collected to solely be used for the purpose(s) of identifying issues from the various stakeholders and the public for the planning of the Town of Blackfalds - Transportation Master Plan.

Name: Company/Organization:

Phone: Email:

Thank you for attending the Open House and for providing us with your valuable feedback. Please leave your completed form with an Open House facilitator today, or return via fax or email by no later than March 12, 2015 to:

Attn: Preston Weran | Town of Blackfalds
Tel: (403) 885-4677 | Fax: (403) 885-4610
Email: *info@blackfalds.com*

8.0 CONCLUSION

This Transportation Master Plan was prepared with the most up to date information available. However, the analysis considers a 22.5K population horizon, which represents almost a tripling of the Town's current population, and land development and traffic patterns will likely evolve in unpredictable ways in the years leading up to the 22.5K horizon.

The need for updating this plan will depend on the extent to which future development matches the assumptions in the plan and the rate at which the Town grows. It has been more than a decade since the previous transportation study was completed, which is probably too long a gap between studies for a Town growing as quickly as Blackfalds. An update should be considered once the Town reaches the short term 12K population analysis horizon. Assuming the Town continues to grow at 8%, this plan should be reviewed in 5-6 years.

The following Table 8.1 and Table 8.2 summarizes the recommended improvements at the 12K and 16.5K / 22.5K population horizons, respectively.

Table 8.1 – 12K Horizon Recommended Improvements

Horizon	Improvement	Description
12K Population	B1.1	Gregg-Womacks Rail Crossing
	B1.2	Parkwood Road – Panorama Drive
	B1.3	Highway 597 – Industrial Way
	B1.4	East Railway Street
	B1.5	East Railway Street – South Street
	B1.6	Vista Trail – Westbrook Road
	B1.7	Broadway Avenue – New Collector Intersection
	A1.1	Highway 2A Widening
	A1.2	Highway 2A – Cottonwood Drive
	A1.3	Highway 2A – Panorama Drive
	A1.4	Highway 2A – South Street
	A1.5	Highway 2A – Broadway Avenue
	A1.6	Highway 597 – East Railway Street

Table 8.2 – 16.5K / 22.5K Recommended Improvements

Horizon	Improvement	Description
16.5K Population	B2.1	Gregg Street – Broadway Avenue
	B2.2	Womacks Road – Broadway Avenue
	B2.3	Highway 597 – Industrial Way
	B2.4	Cottonwood Drive – Parkwood Road
	B2.5	Broadway Avenue – Westbrooke Road
	B2.6	Broadway Avenue
	B2.7	Vista Trail – South Street
	A2.1	Highway 2A – Cottonwood Drive
	A2.2	Highway 2A – Panorama Drive
	A2.3	Highway 2A – Park Street
	A2.4	Highway 2A – South Street
	A2.5	Highway 2A – Broadway Avenue
22.5K Population	B3.1	Womacks Road – Broadway Avenue
	B3.2	Highway 597 – Industrial Way
	B3.3	Vista Trail – Duncan Avenue
	B3.4	Vista Trail – Womacks Road
	B3.5	Vista Trail – South Street
	B3.6	East Railway Street and South Street
	A3.1	Highway 2A - Cottonwood Drive
	A3.2	Highway 2A – Park Street
	A3.3	Highway 2A Widening
	A3.4	Vista Trail – Highway 597

APPENDIX A TRAFFIC COUNT PROGRAM

Town of Blackfalds 2013 / 2014 Transportation Master Plan – Traffic Count Program

Prepared for:
Town of Blackfalds

Prepared by:
Stantec Consulting Ltd.
1100 – 4900 50th Street
Red Deer, AB T4N 1X7

March 5, 2014

TOWN OF BLACKFALDS
2013 / 2014 TRANSPORTATION MASTER PLAN – TRAFFIC COUNT PROGRAM

March 5, 2014

2013 Traffic Count Program

The Town of Blackfalds (Town) retained Stantec Consulting Ltd. (Stantec) to complete the 2013 / 2014 Transportation Master Plan (TMP). As part of the process, a traffic count program was completed in June 2013 which included:

- 20 AM and PM peak hour intersection turning movement counts; and
- 6 24-hour automated traffic recorder (ATR) counts.

The 2013 traffic count program was completed by ME2 Transportation Data Corporation. In addition to the program, the following sources of traffic data were also used for the TMP:

- Intersection turning movement counts at the intersections of Vista Trail / Womacks Road and Broadway Avenue / Womacks Road to determine the impact of opening the Vista Trail connection to Westbrooke Road, north of Womacks Road (*forthcoming*); and
- 2012 traffic data from Alberta Transportation's website.

Figure 1.0 illustrates the locations of the intersections included in the 2013 traffic count program and those intersections with traffic data from Alberta Transportation.

The traffic count program's data for the 2013 / 2014 TMP is contained in the attached appendices, as listed below:

Appendix A: 2013 Traffic Count Program – Turning Movement Summaries

Appendix B: ME2 Transportation Data – Traffic Flow Analysis Reports

Appendix C: ME2 Transportation Data – 24-Hour ATR Counts

Appendix D: Alberta Transportation – Turning Movements

N

Legend

- 2013 Traffic Count Program
- AT Intersection Traffic Count Data

Completed By: DMH
Date: Jany 15, 2014

Project No.: 116239341

SaveDate: 04/03/2014 4:30:54 PM User: rkentz
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Stantec

Figure 1.0: 2013 Traffic Count Program

Transportation Master Plan

Appendix A 2013 Traffic Count Program – Turning Movement Summaries

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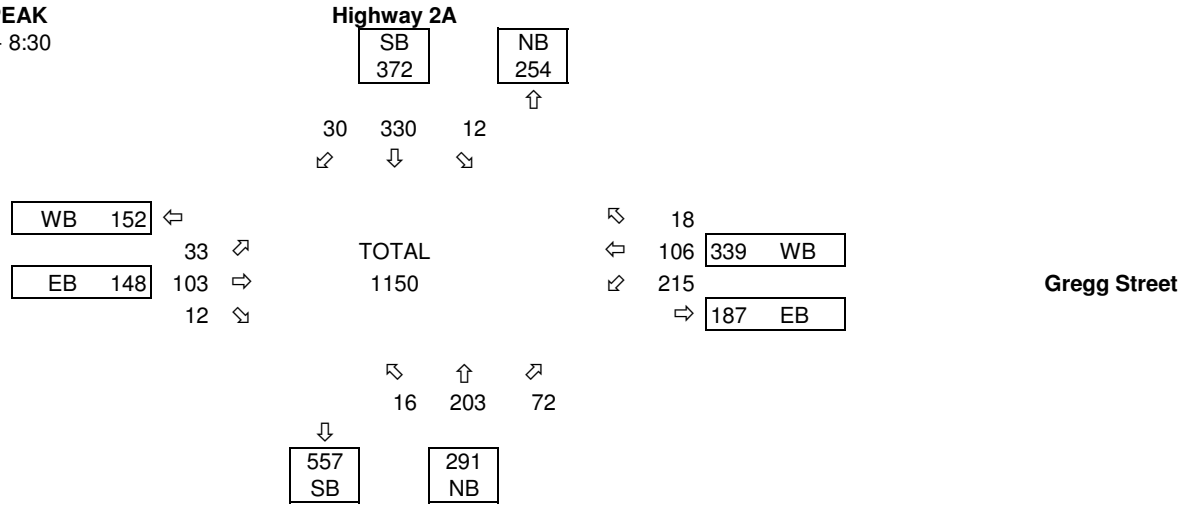

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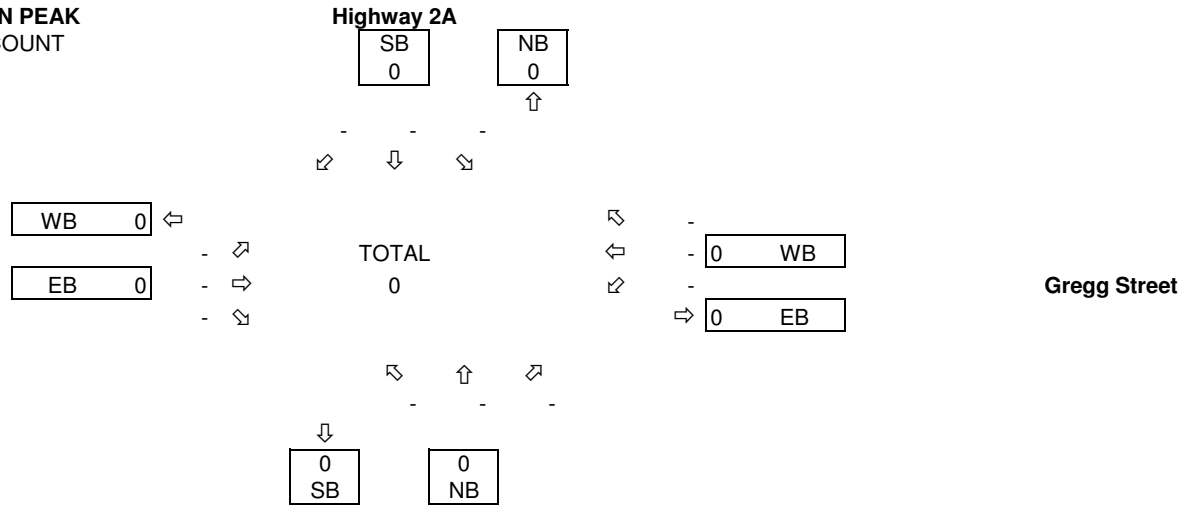

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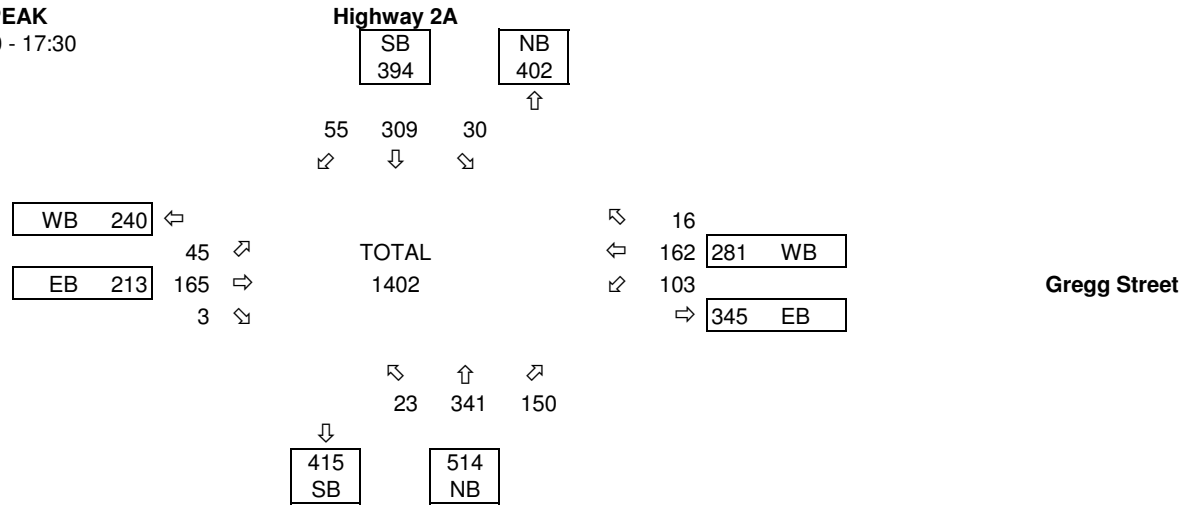

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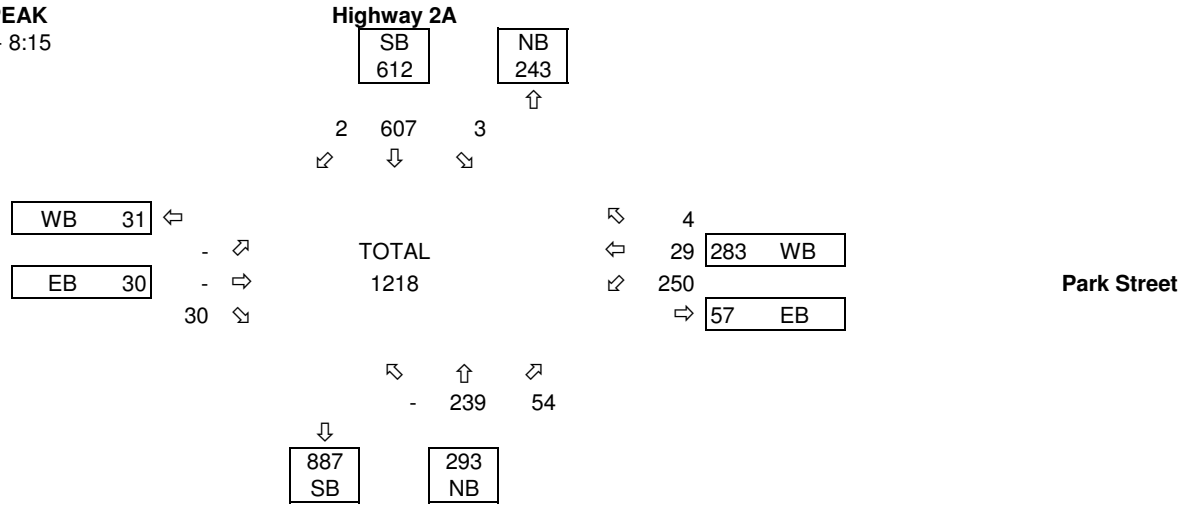

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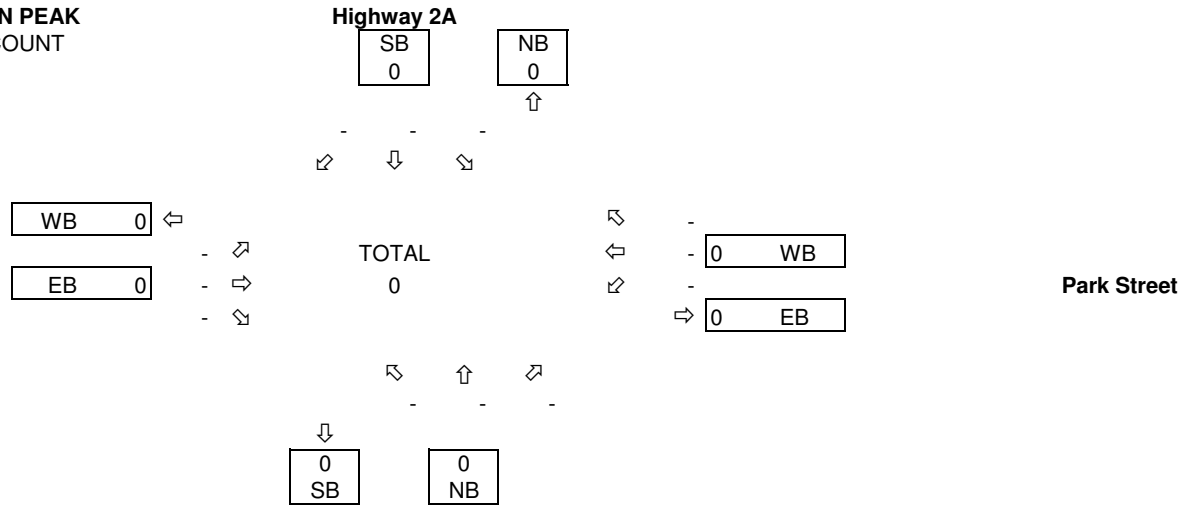

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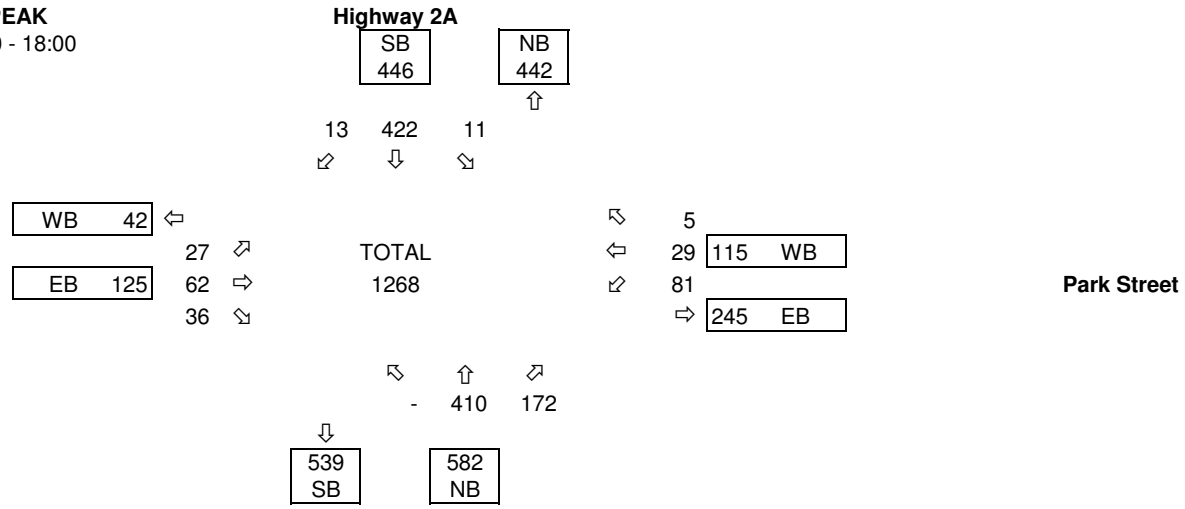

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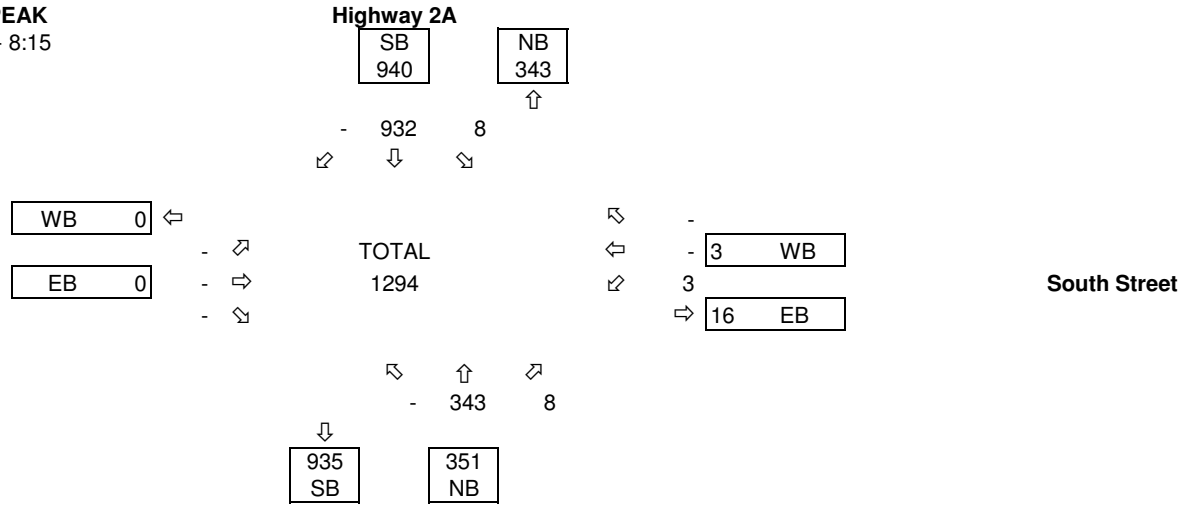

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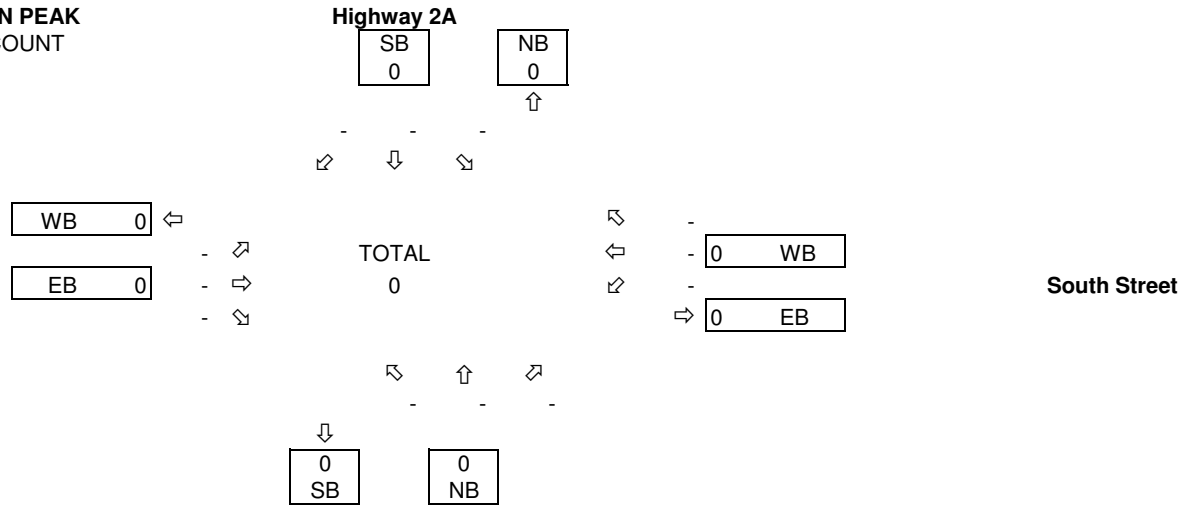

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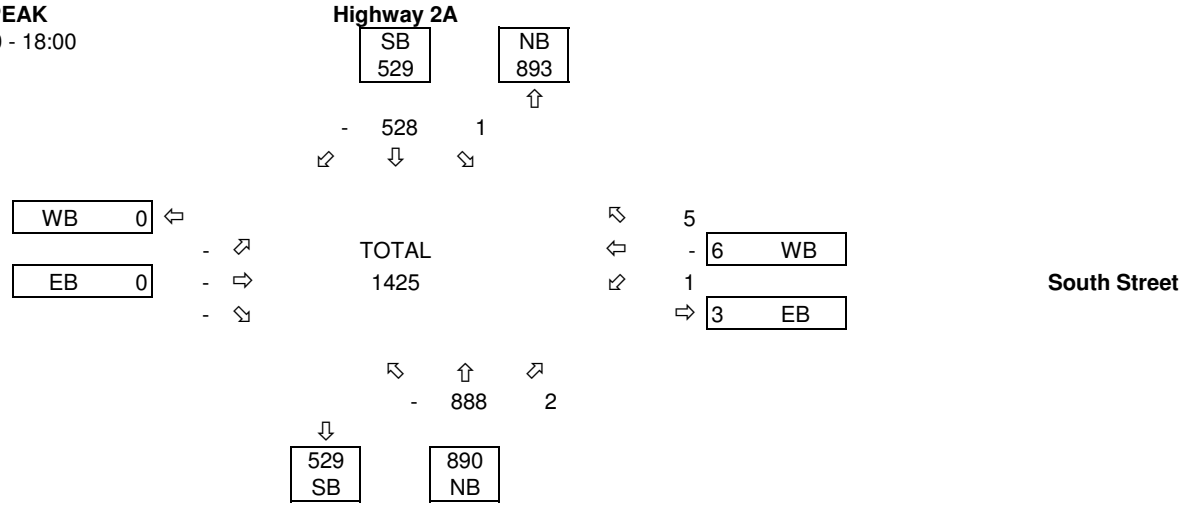

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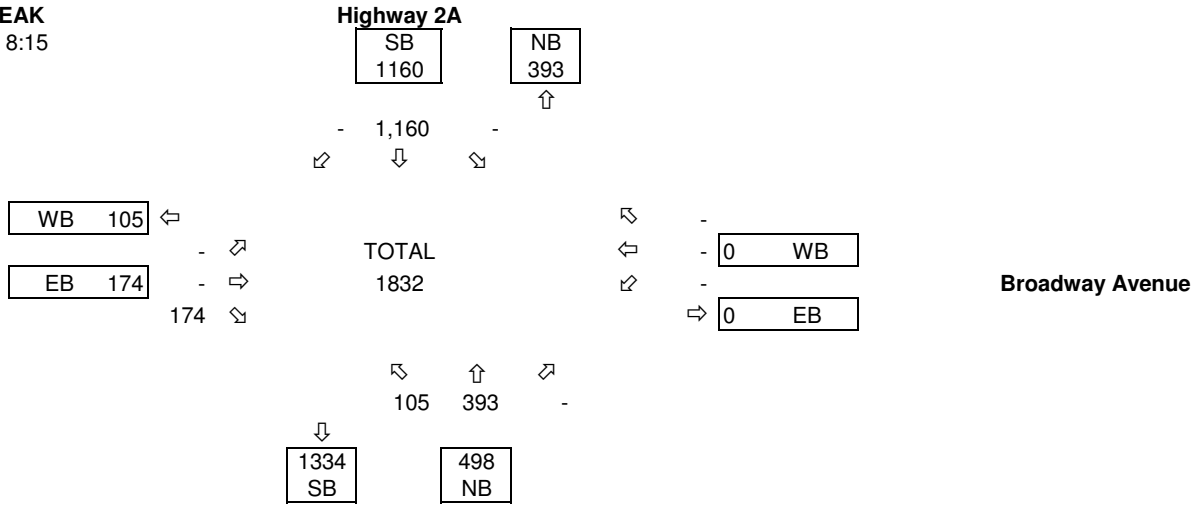

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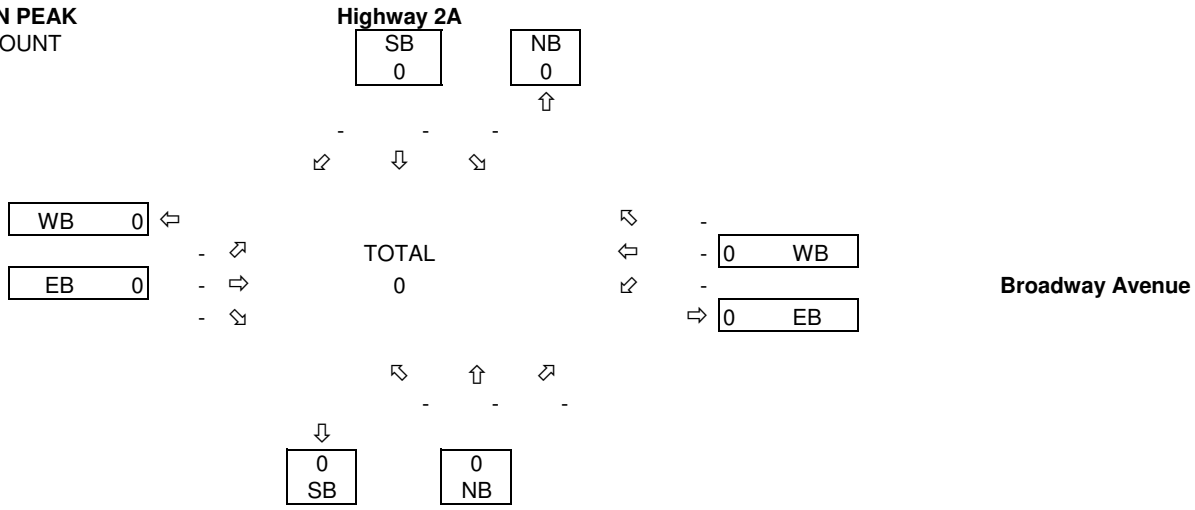

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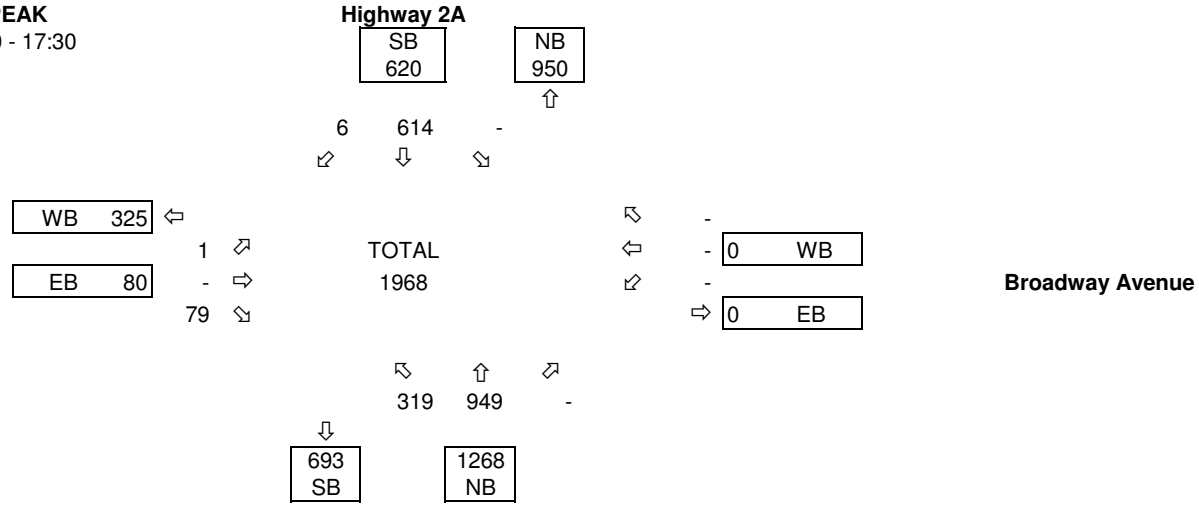

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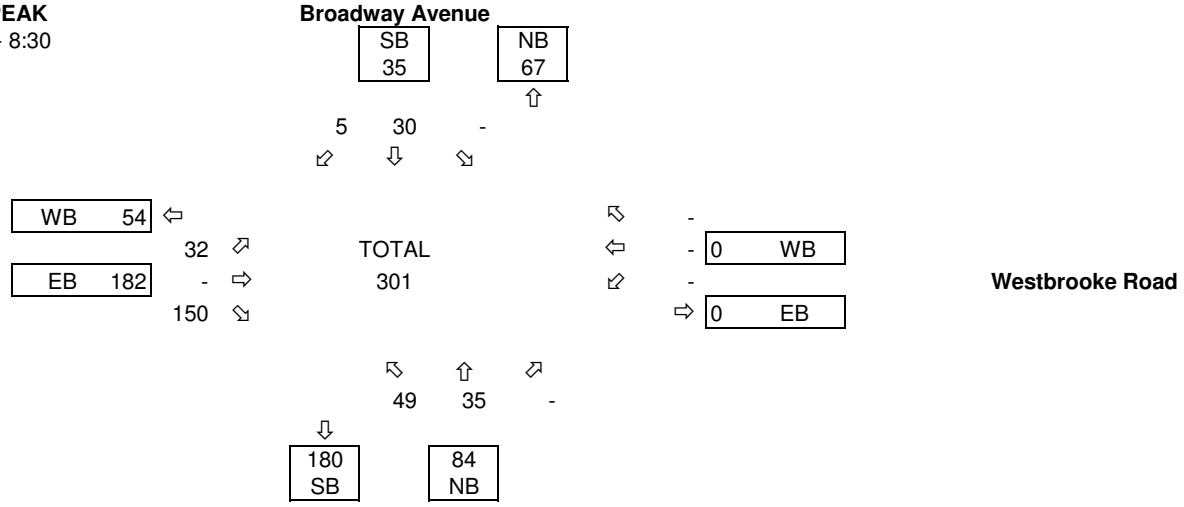

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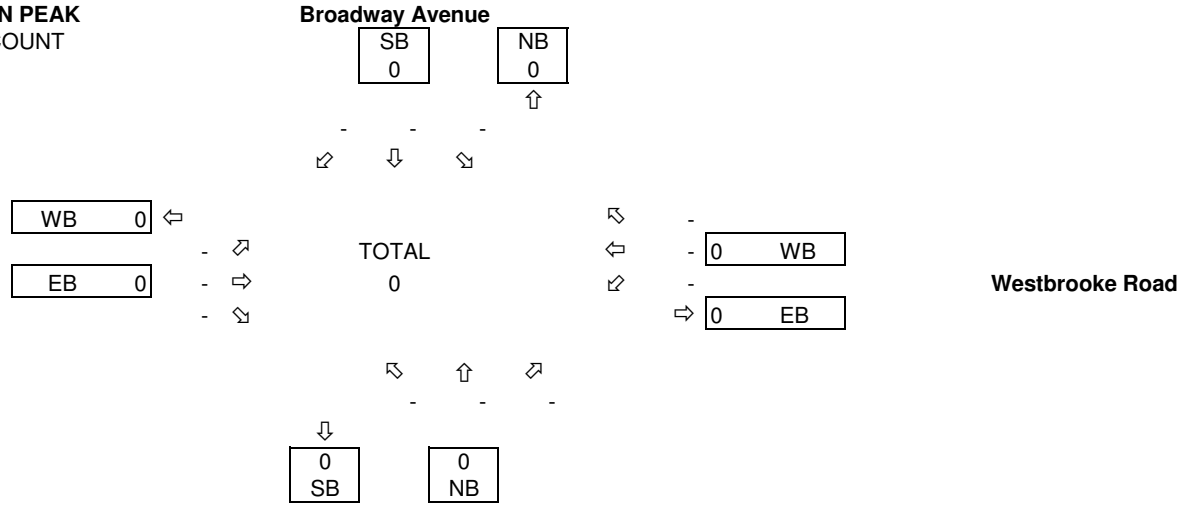

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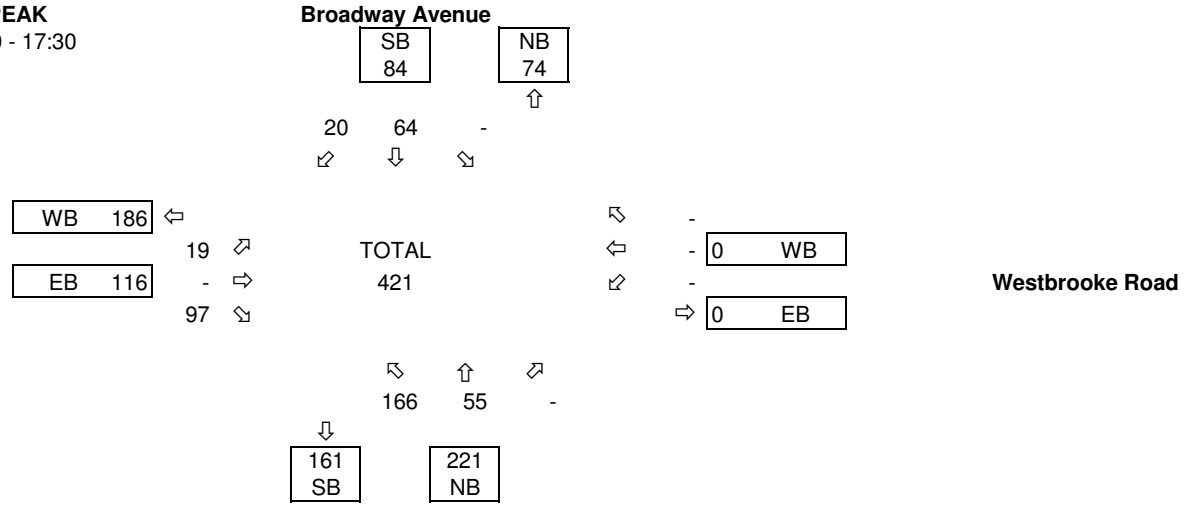

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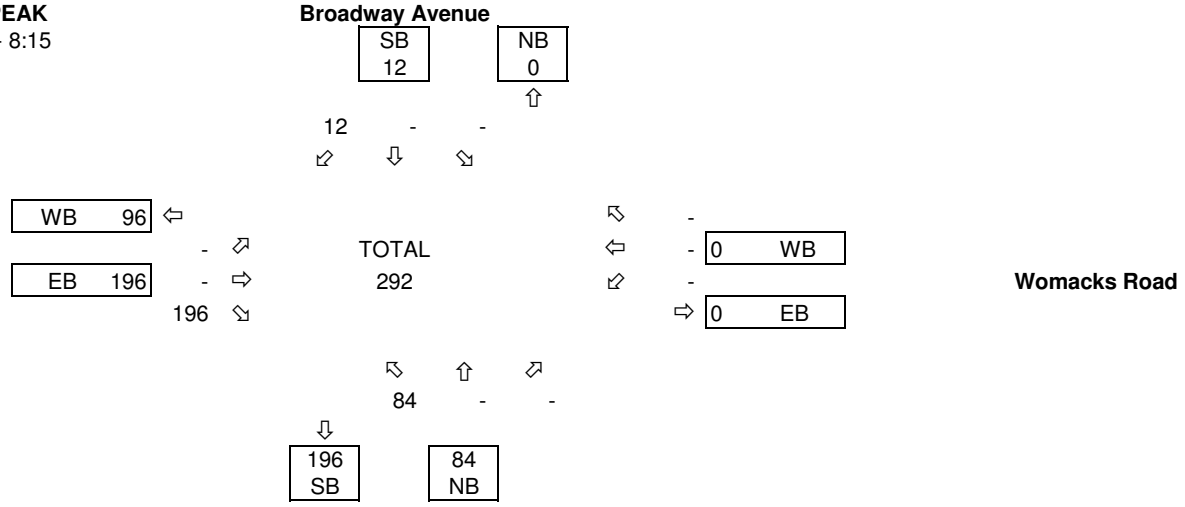

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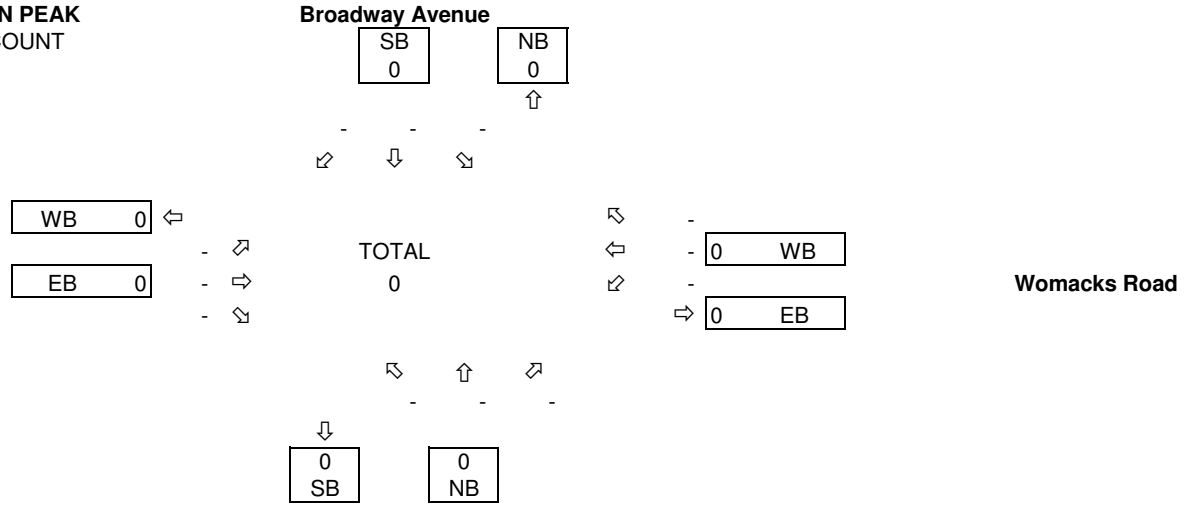

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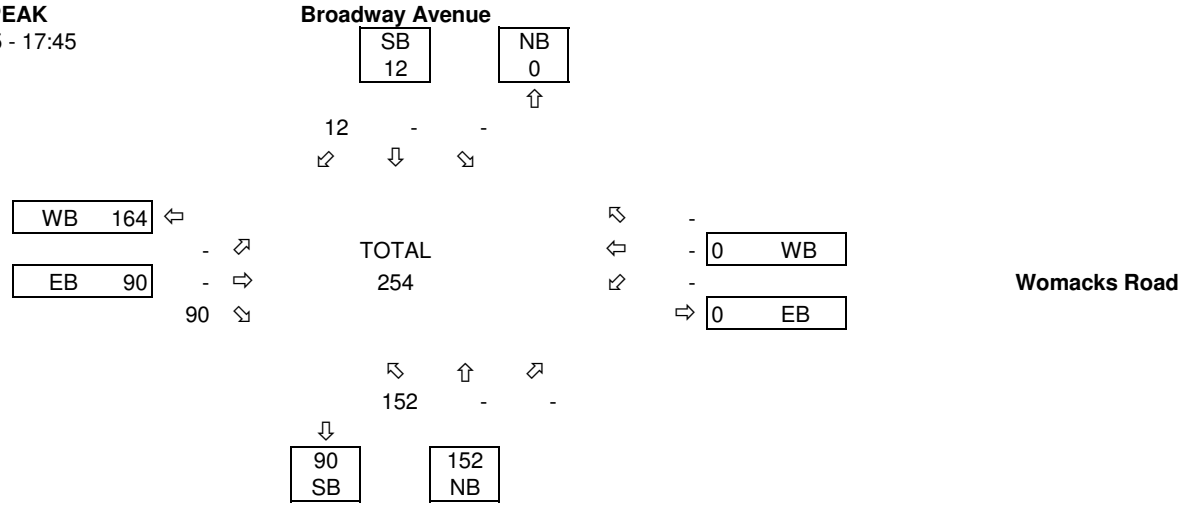

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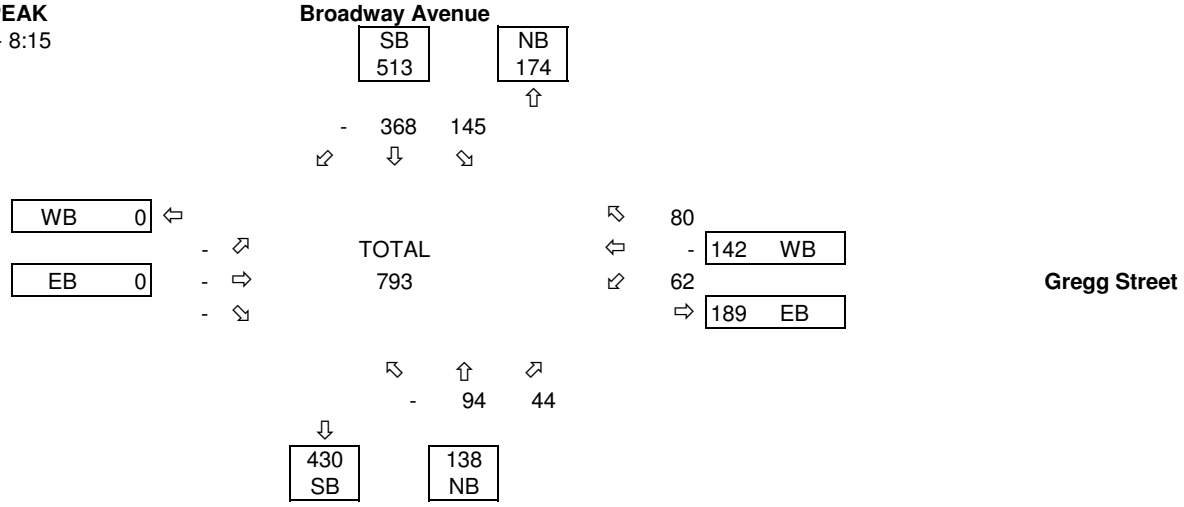

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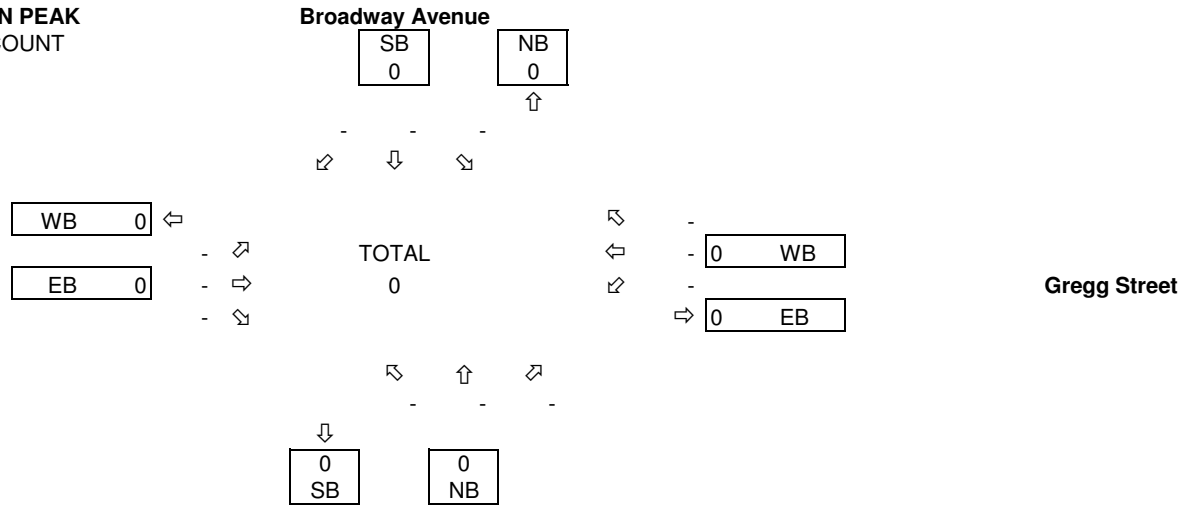

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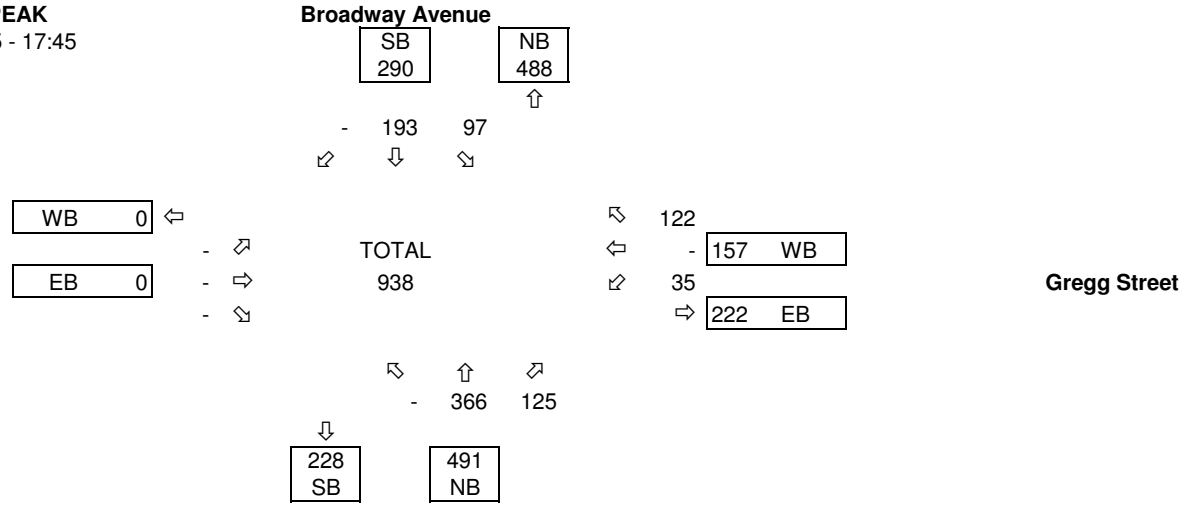

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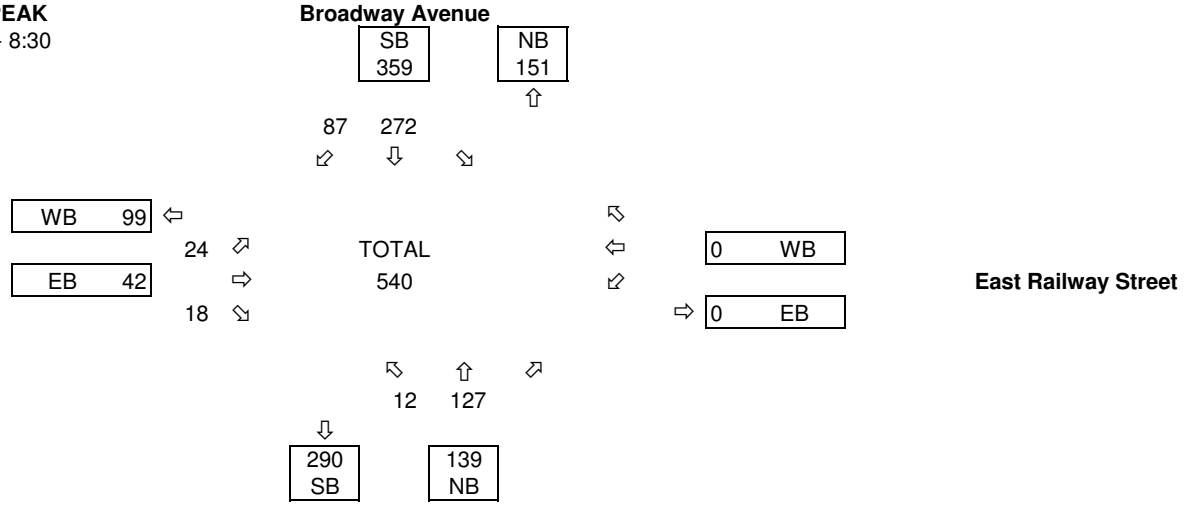

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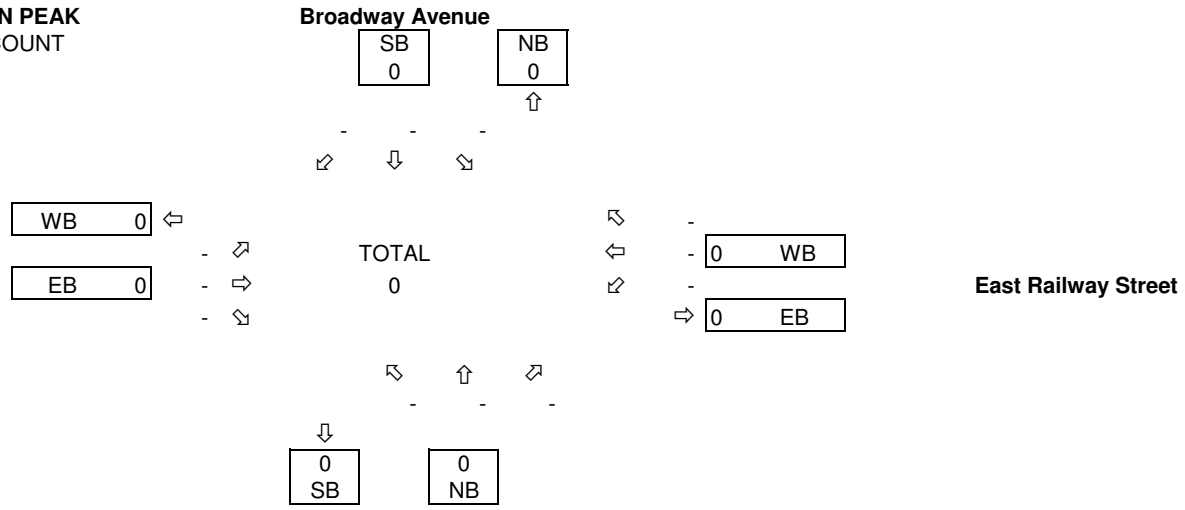

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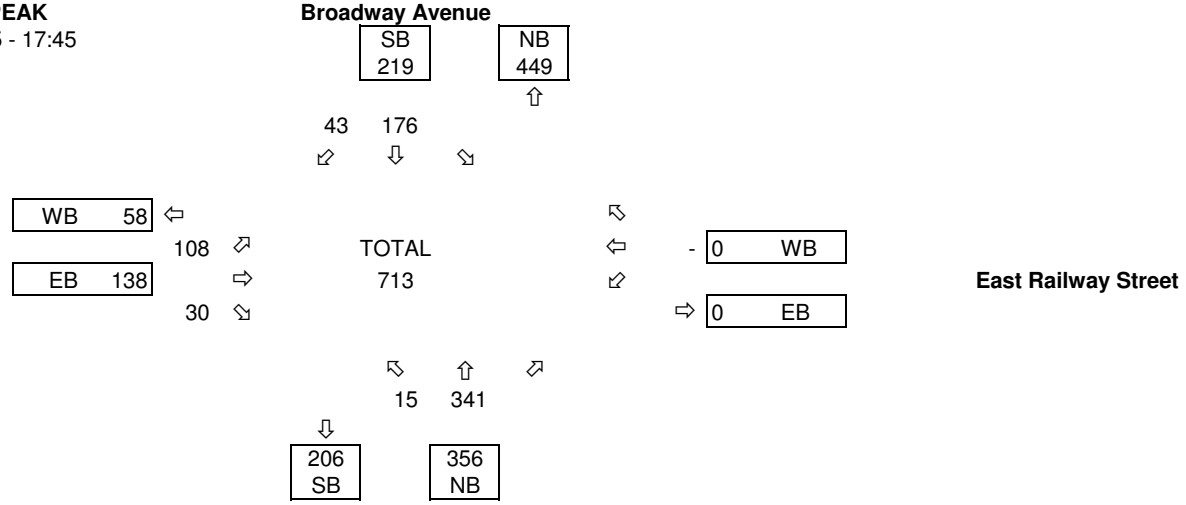

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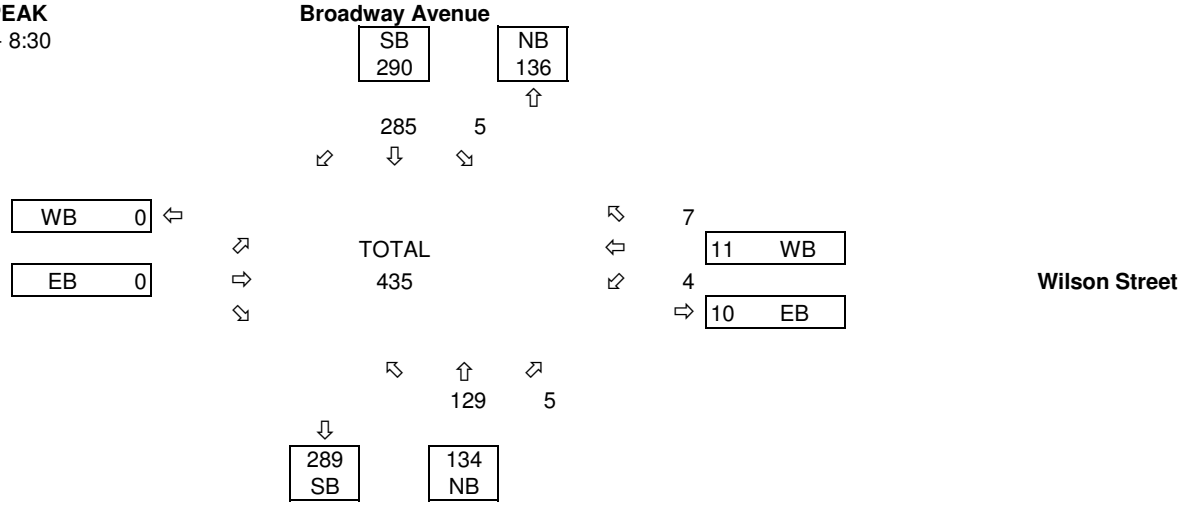

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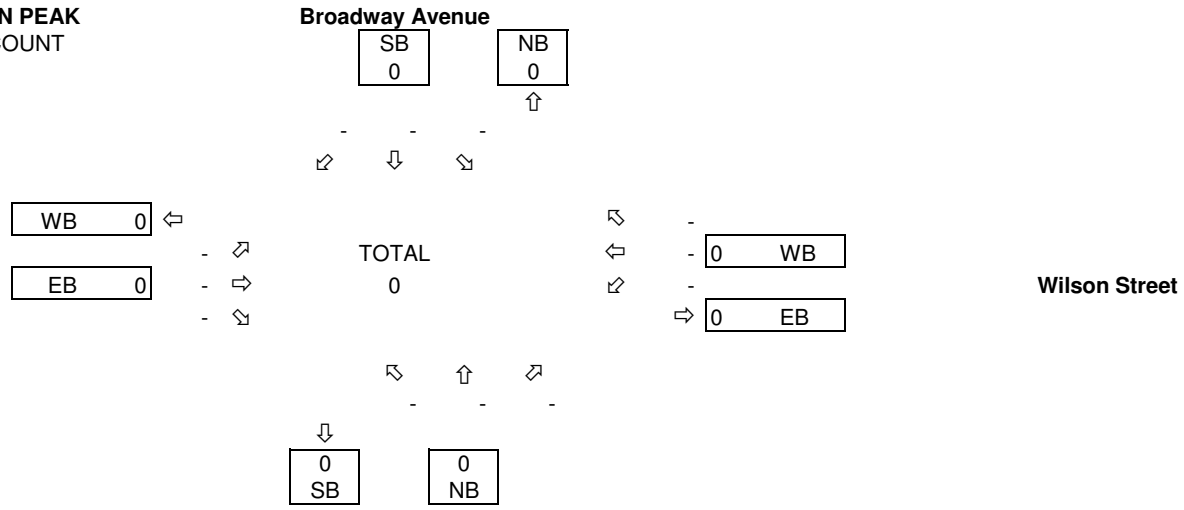

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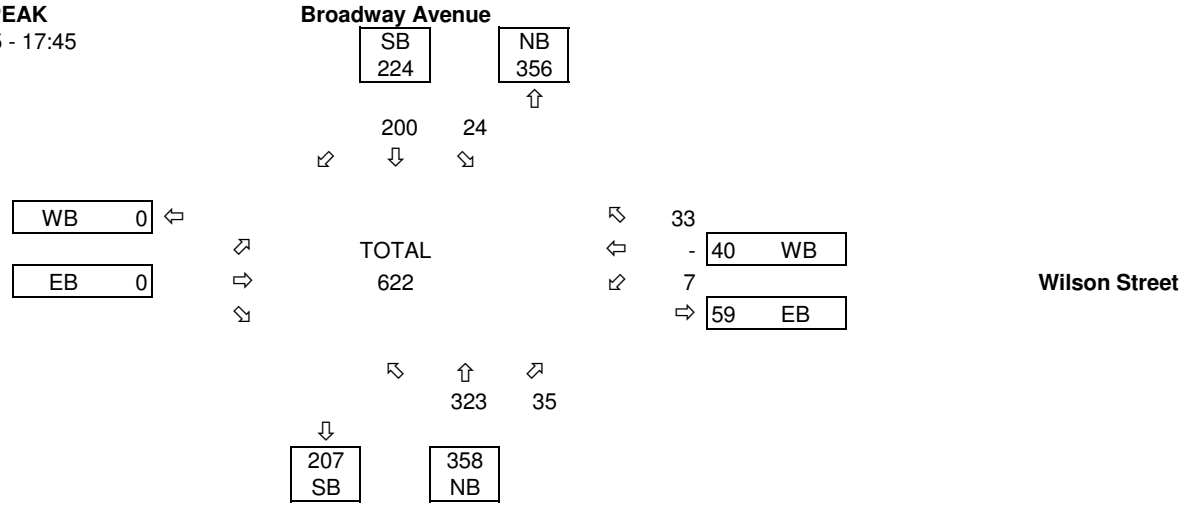

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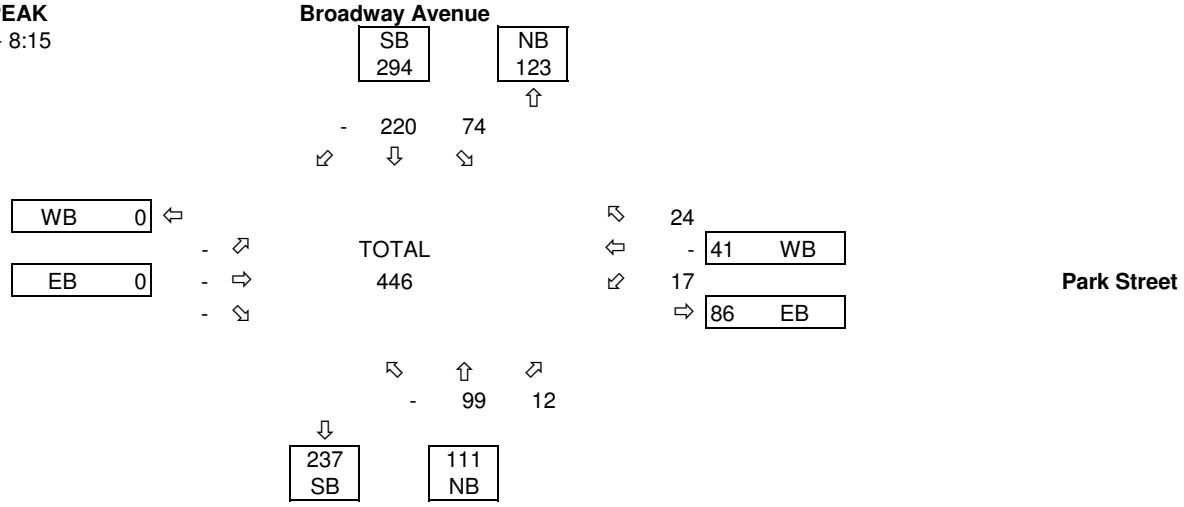

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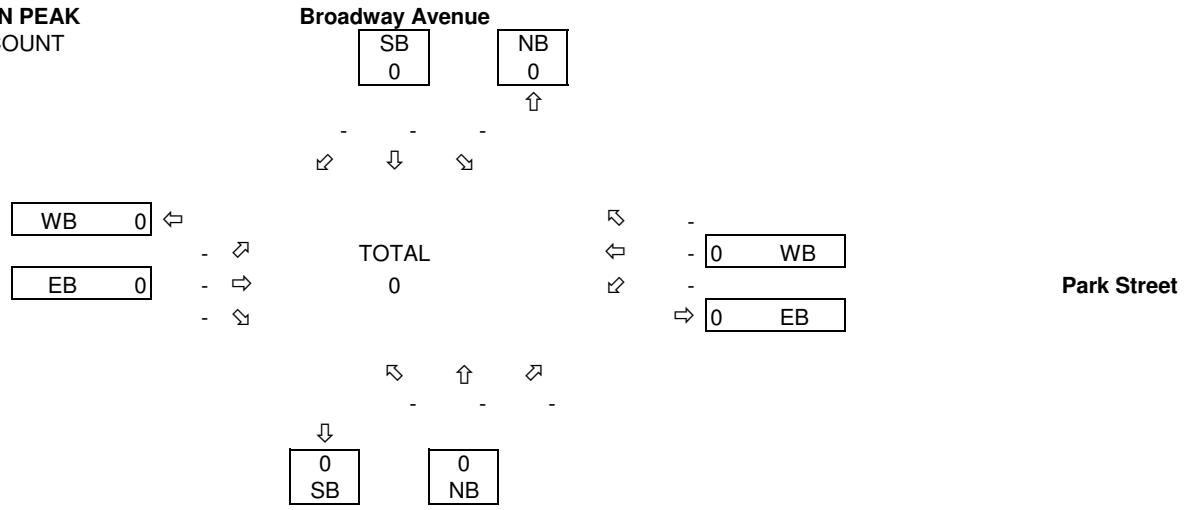

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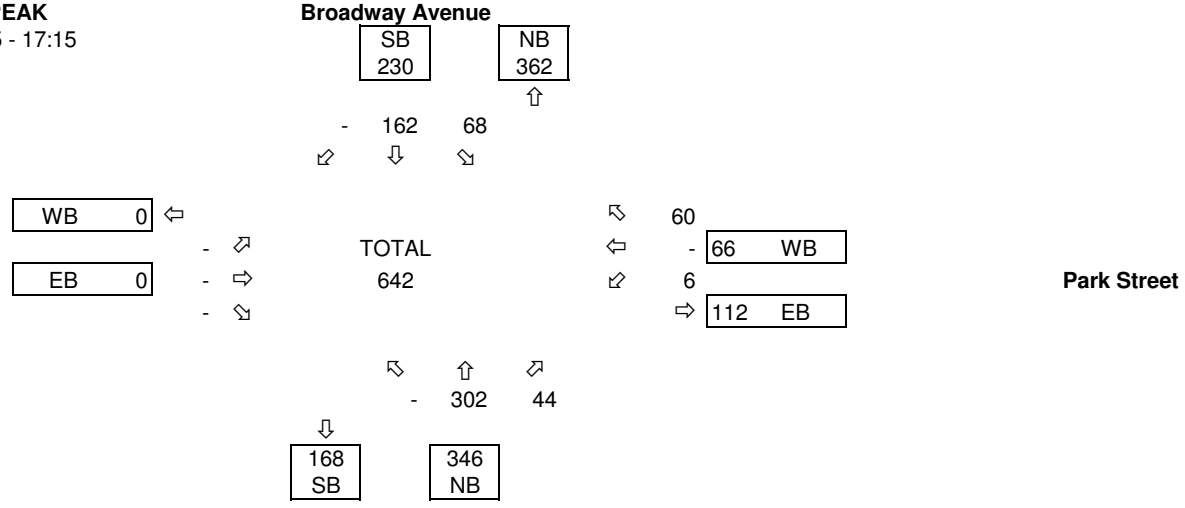

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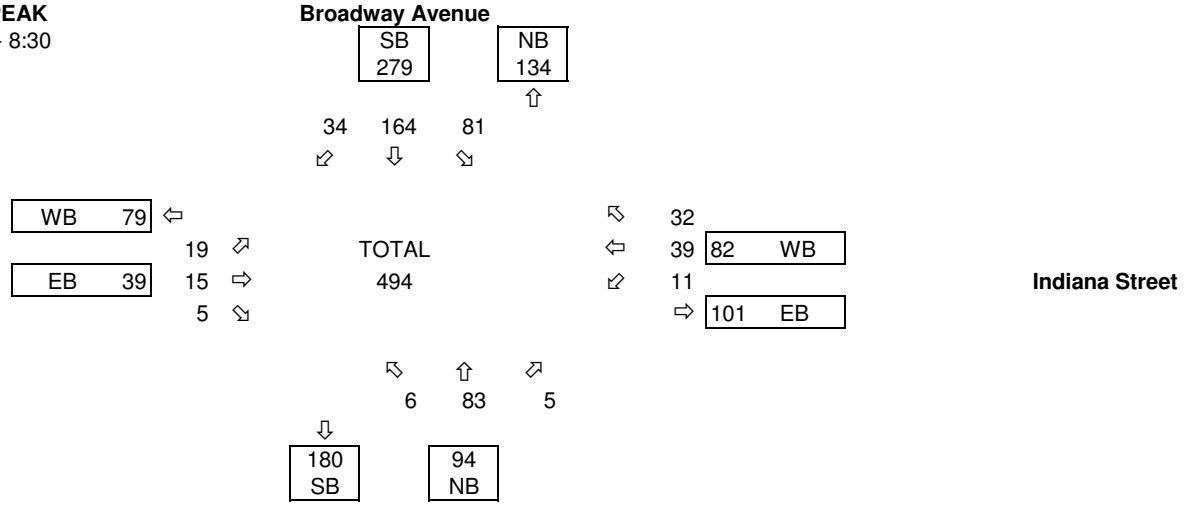

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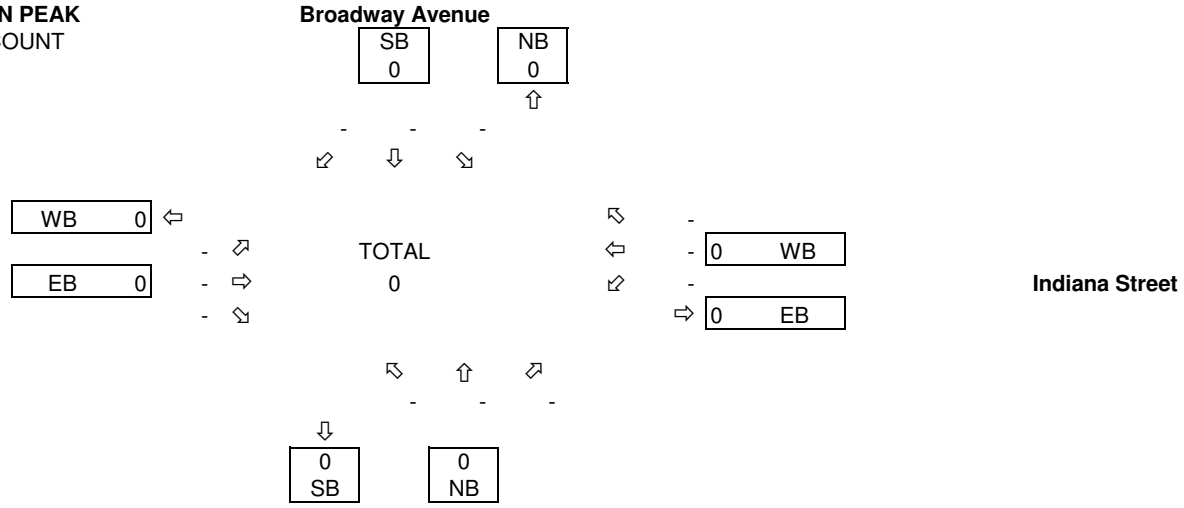

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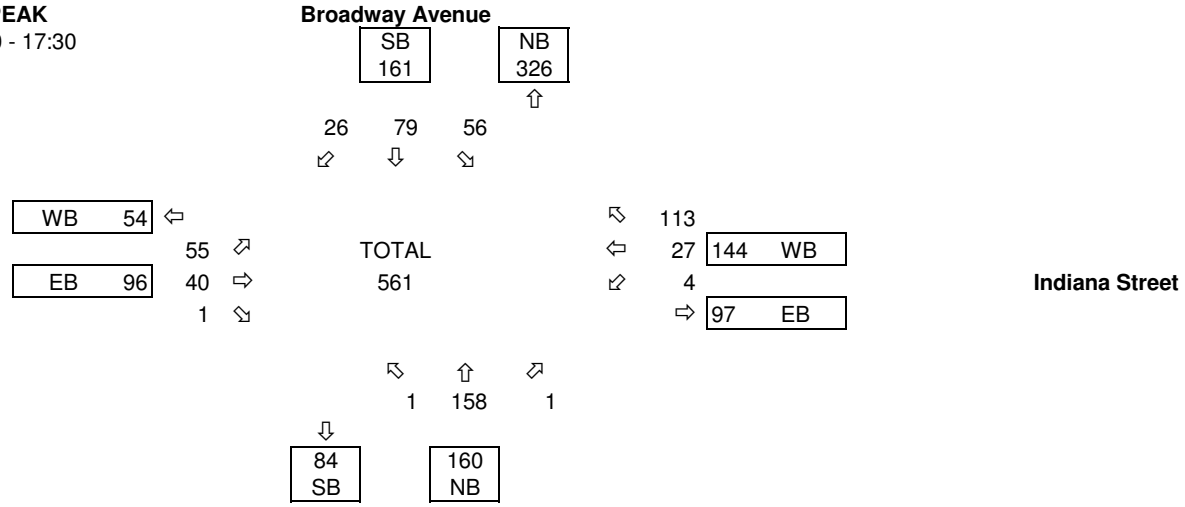

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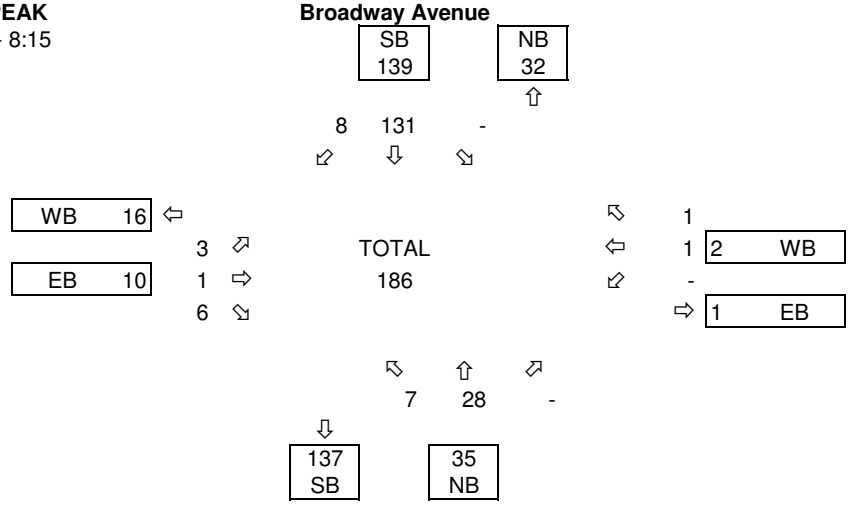
Broadway Avenue



South Street

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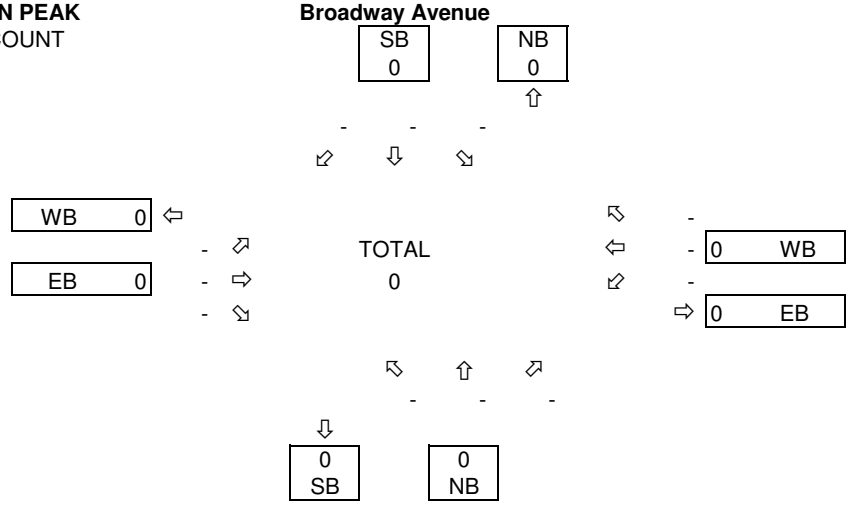
Broadway Avenue



South Street

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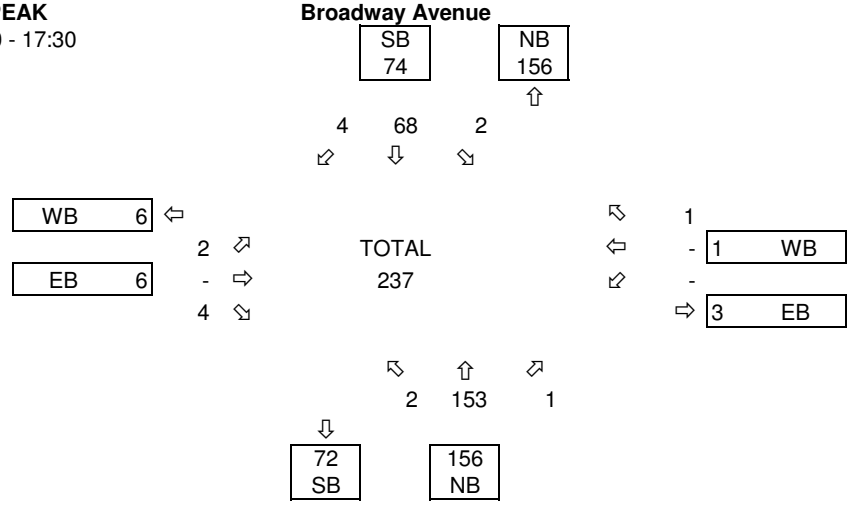
Broadway Avenue



South Street

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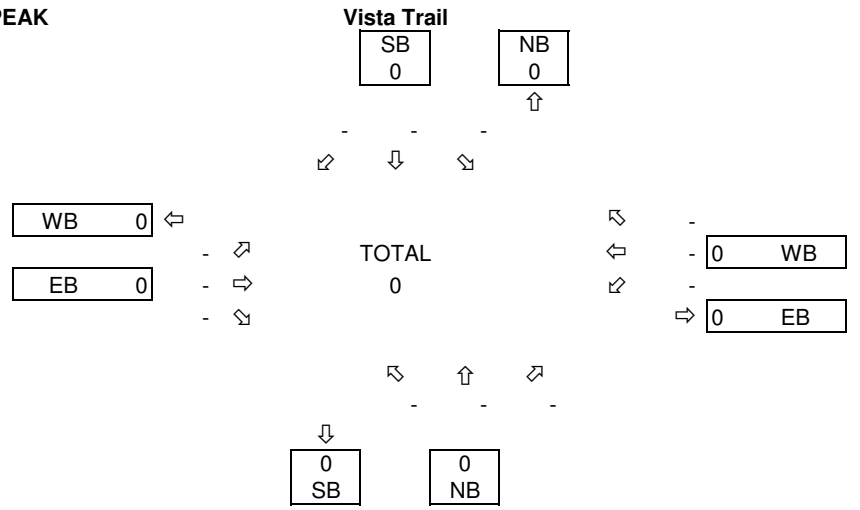

Counts to be completed.

Womacks Road

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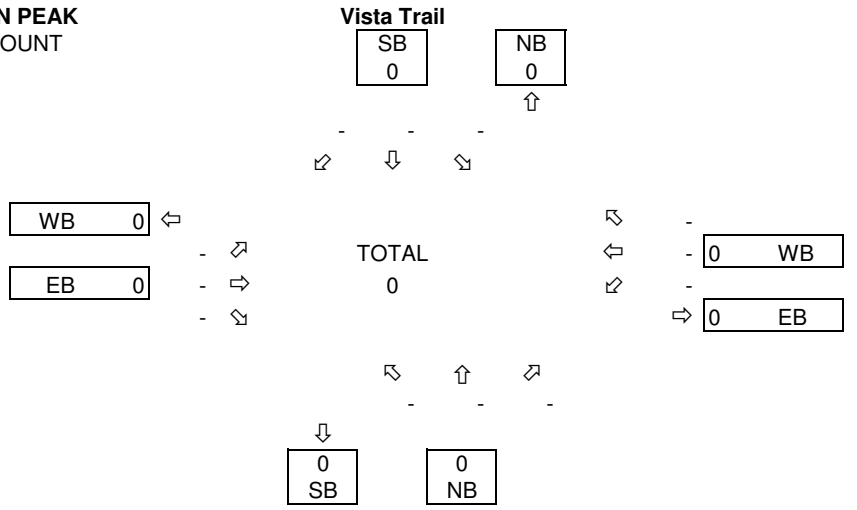
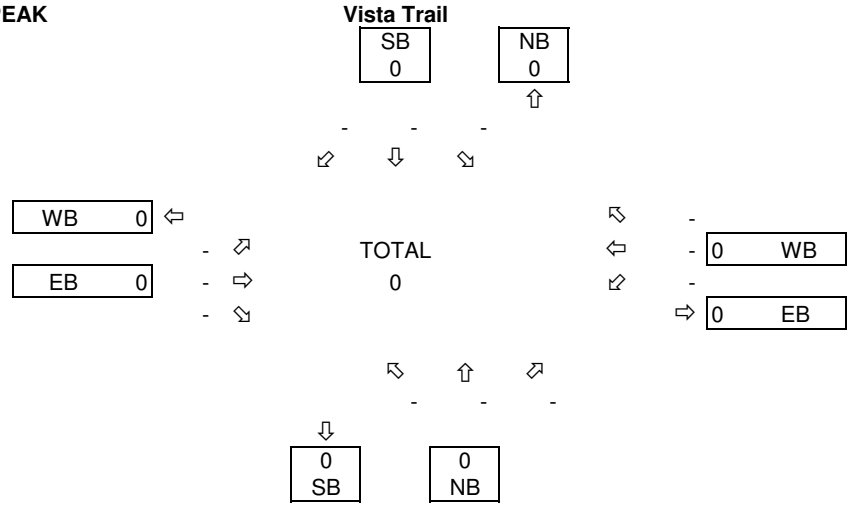


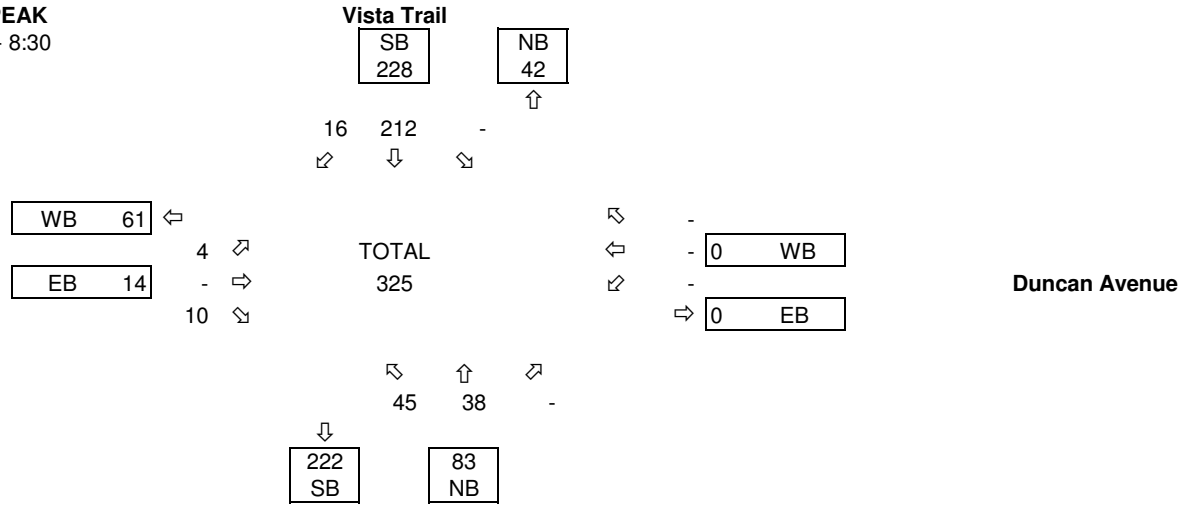
Womacks Road

PM PEAK
TBD

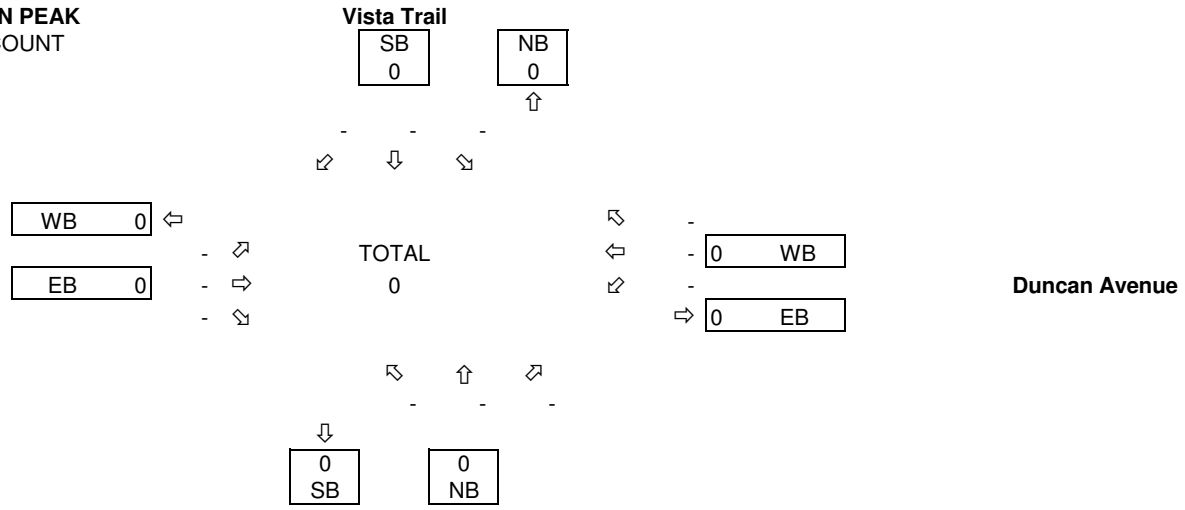


Womacks Road

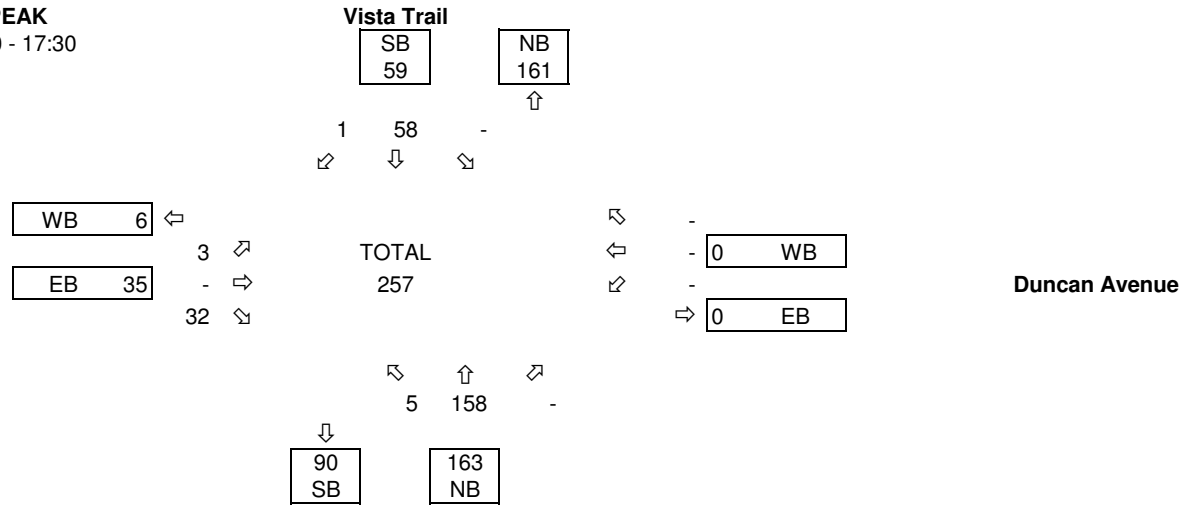
AM PEAK
7:30 - 8:30



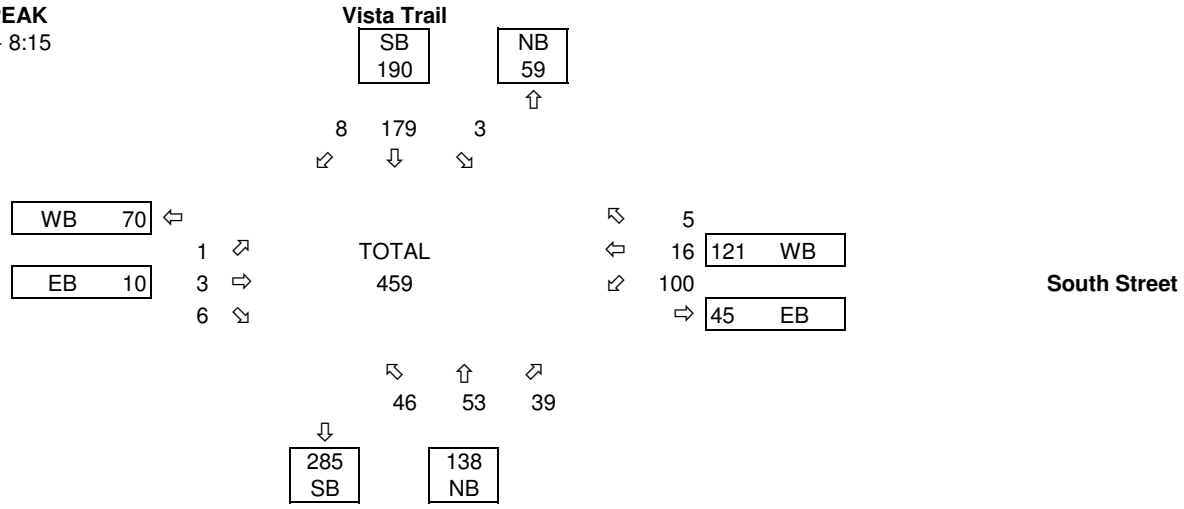
NOON PEAK
NO COUNT



PM PEAK
16:30 - 17:30



AM PEAK
7:15 - 8:15



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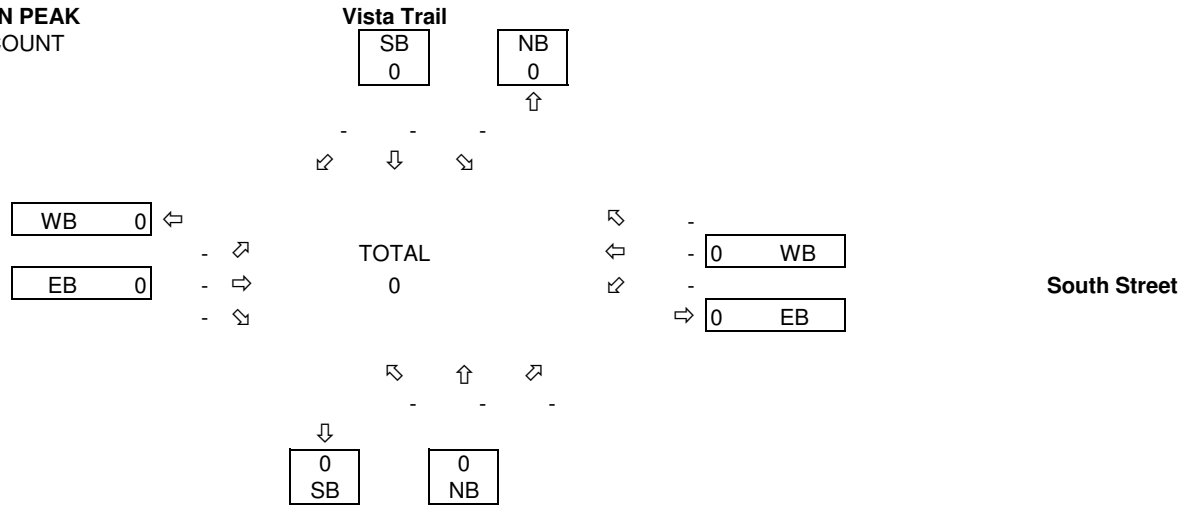
NO COUNT



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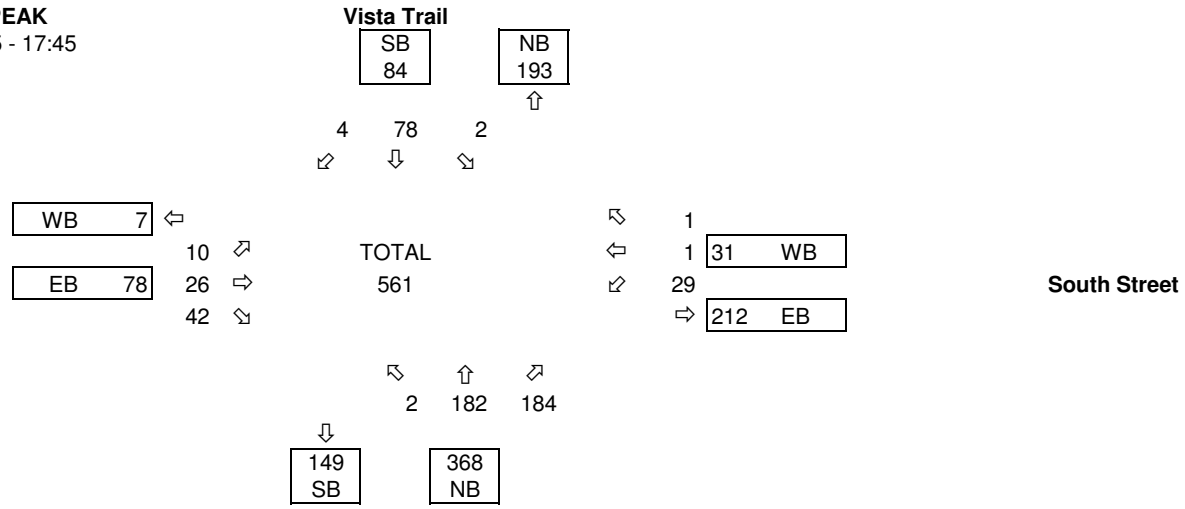
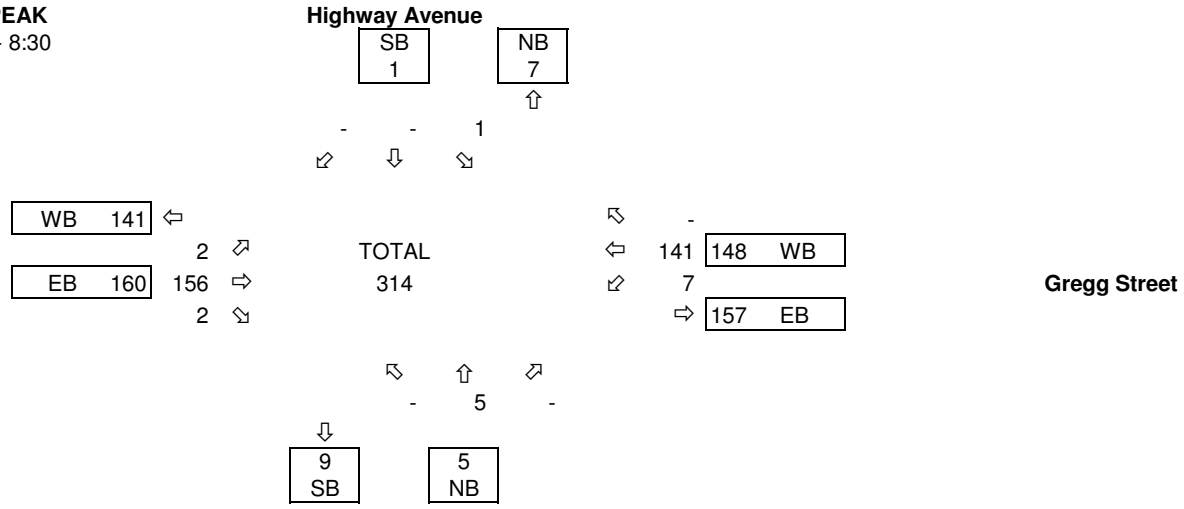
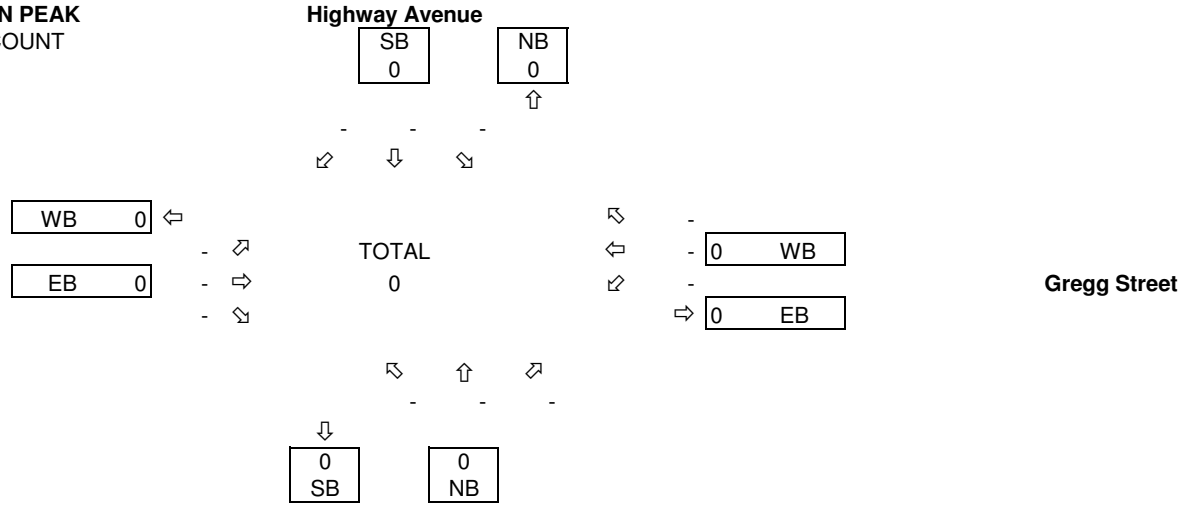
16:45 - 17:45



AM PEAK
7:30 - 8:30



NOON PEAK
NO COUNT



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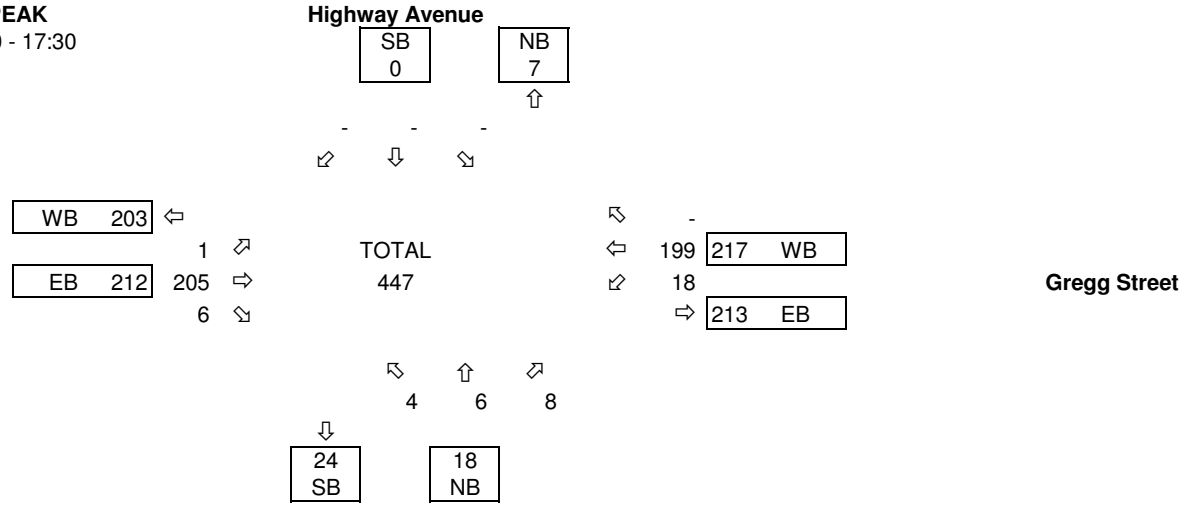
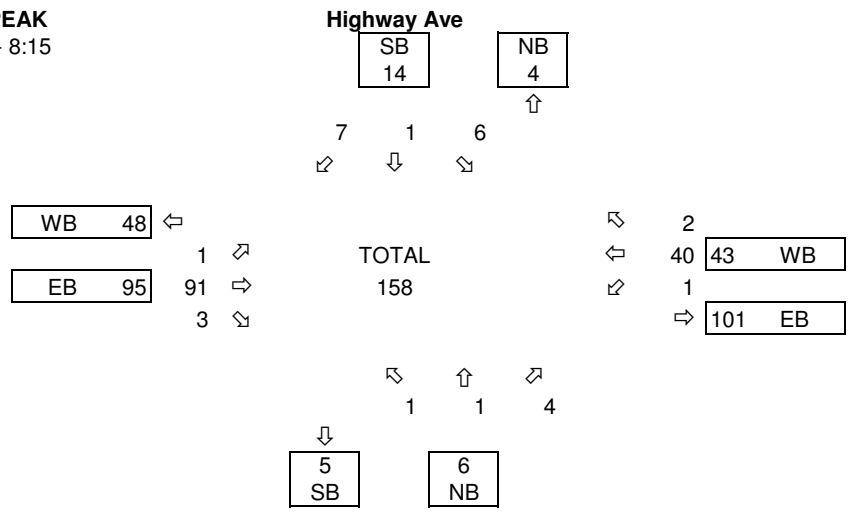
16:30 - 17:30

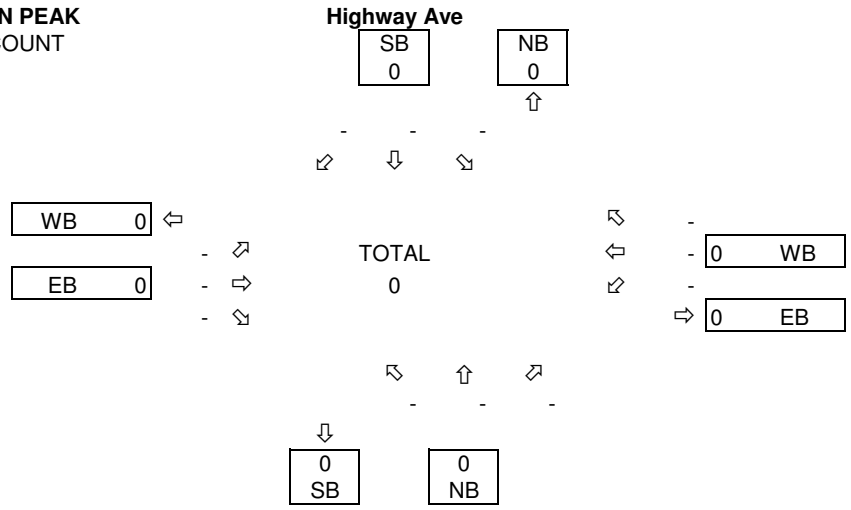


AM PEAK
7:15 - 8:15



South leg has been closed since fall 2013

NOON PEAK
NO COUNT



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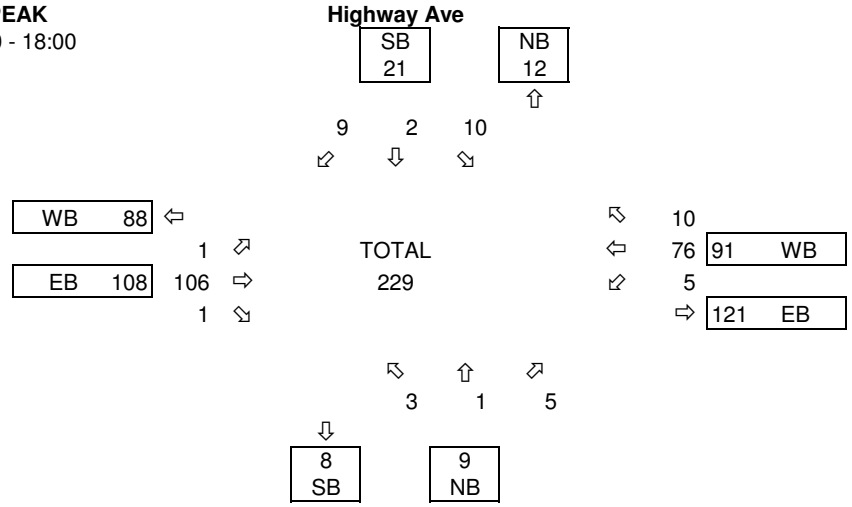
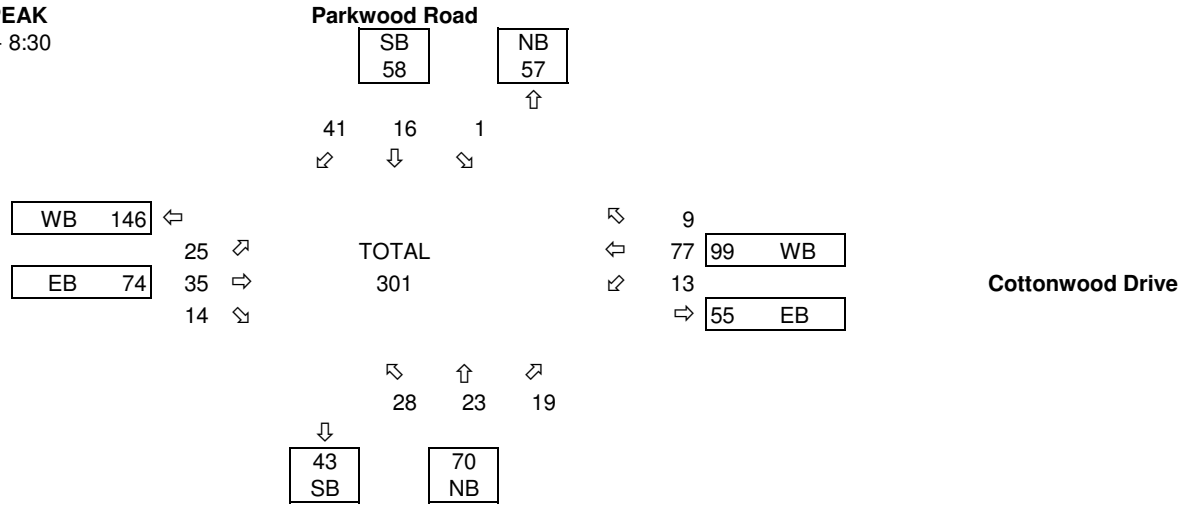
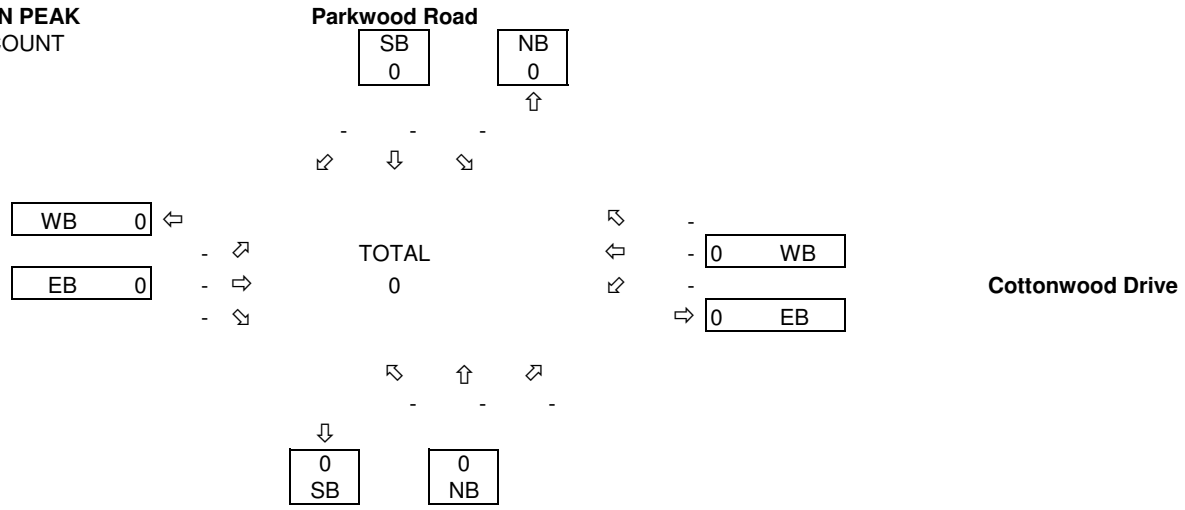
17:00 - 18:00



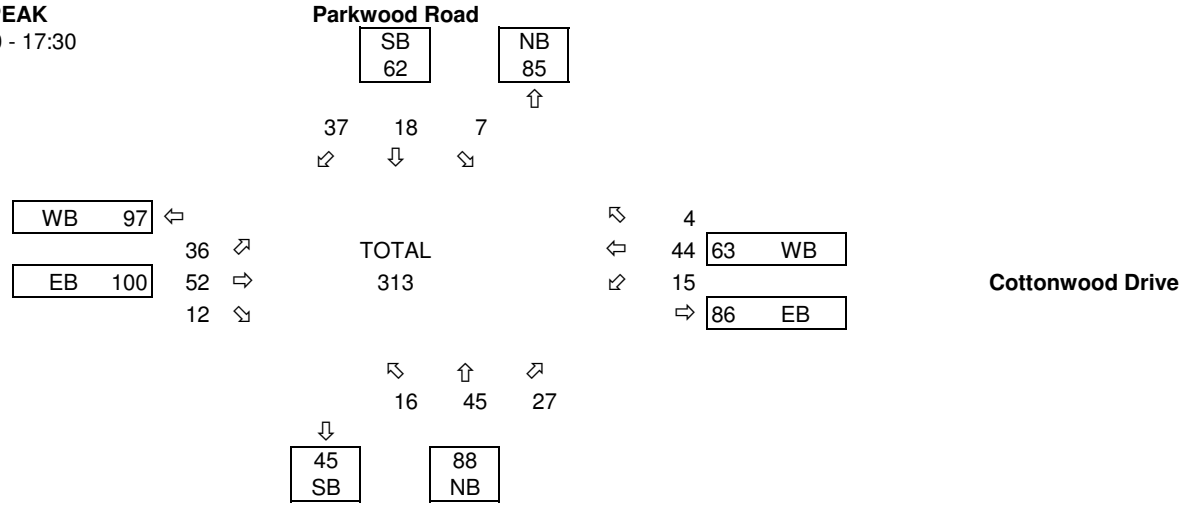
AM PEAK
7:30 - 8:30



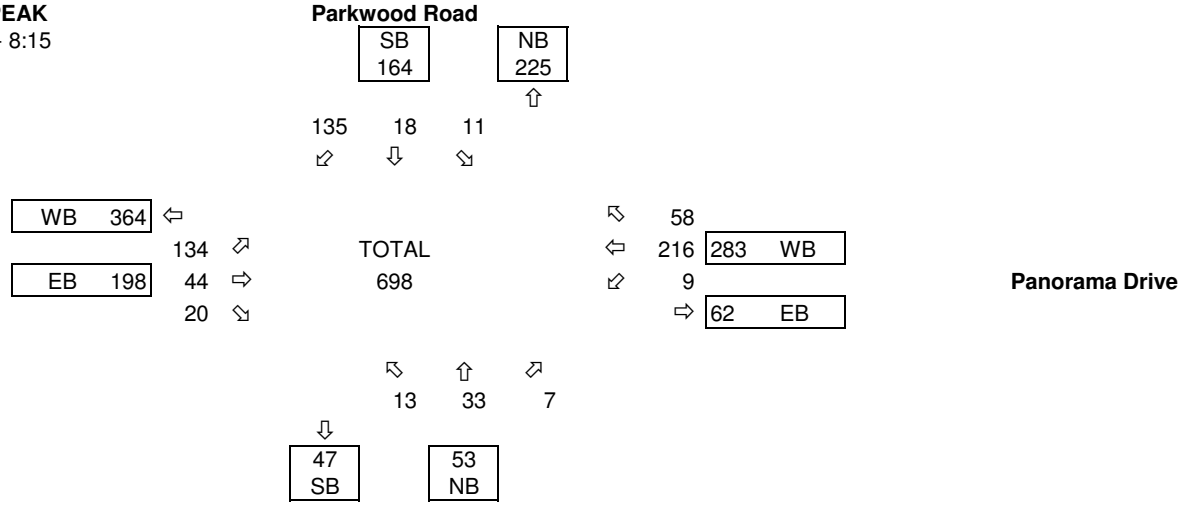
NOON PEAK
NO COUNT



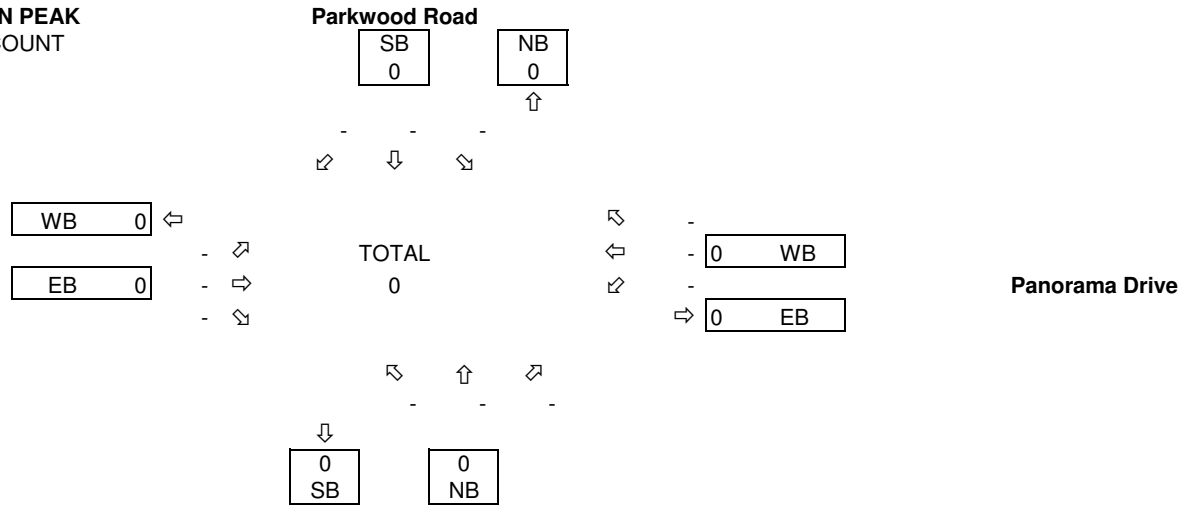
PM PEAK
16:30 - 17:30



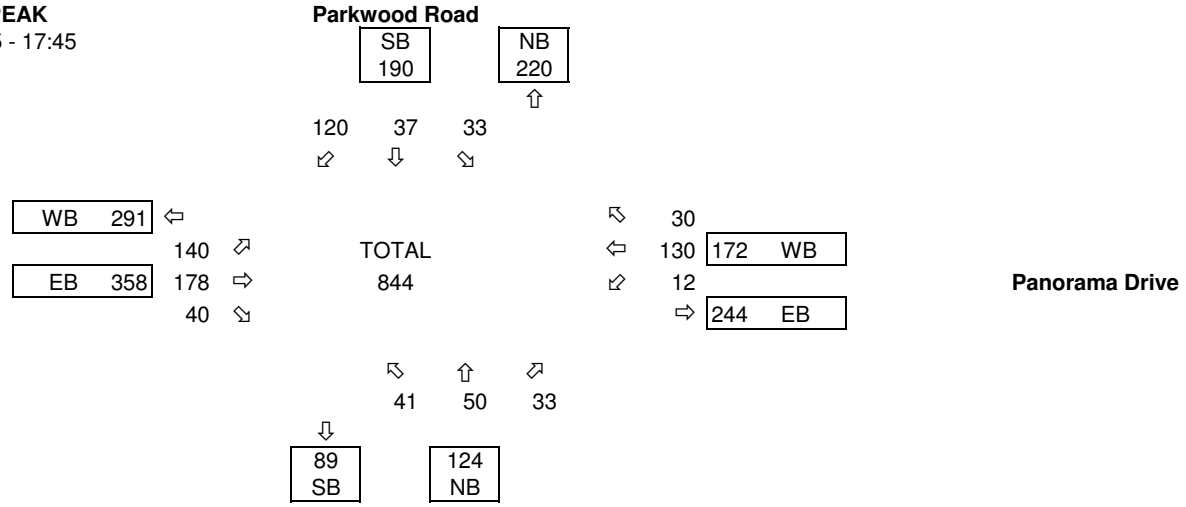
AM PEAK
7:15 - 8:15



NOON PEAK
NO COUNT

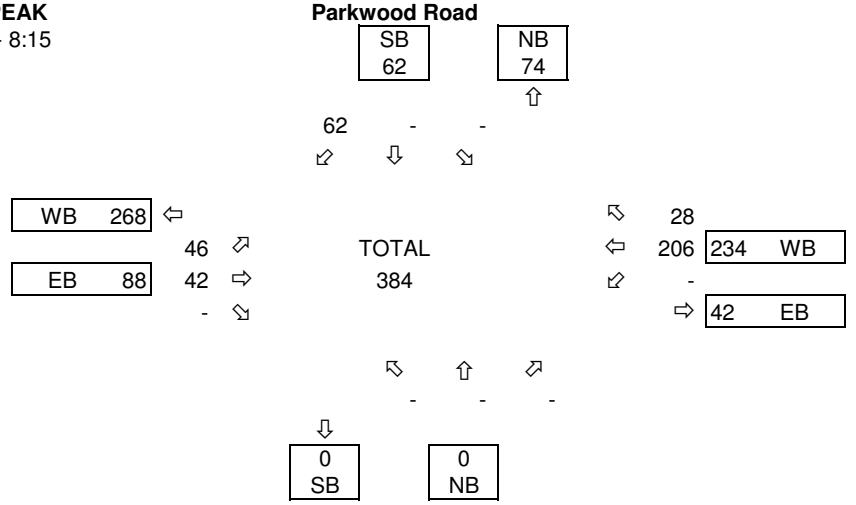


PM PEAK
16:45 - 17:45



AM PEAK
7:15 - 8:15

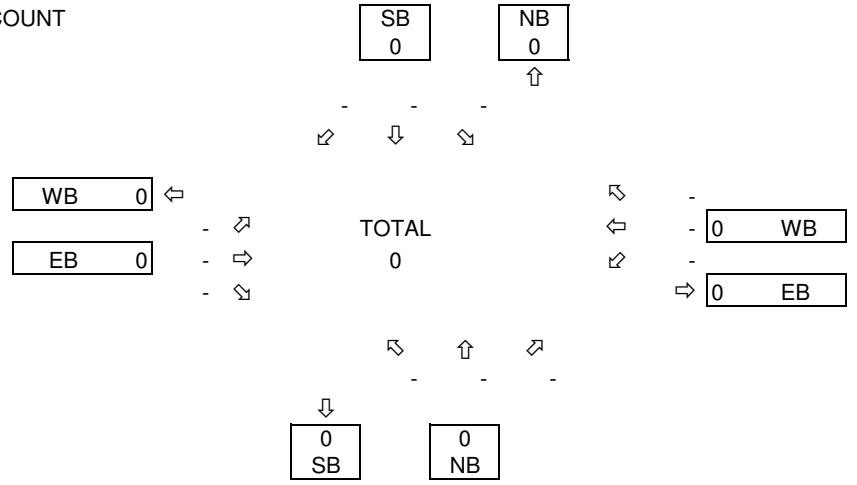
Parkwood Road



Park Street

NOON PEAK
NO COUNT

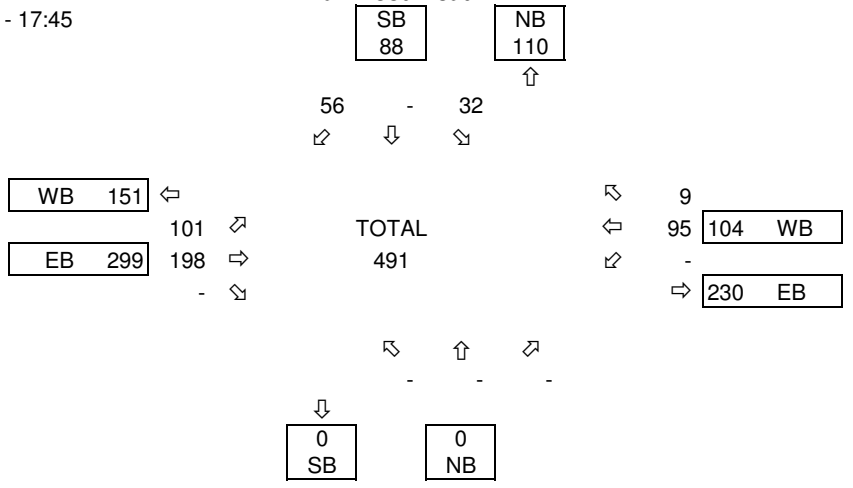
Parkwood Road



Park Street

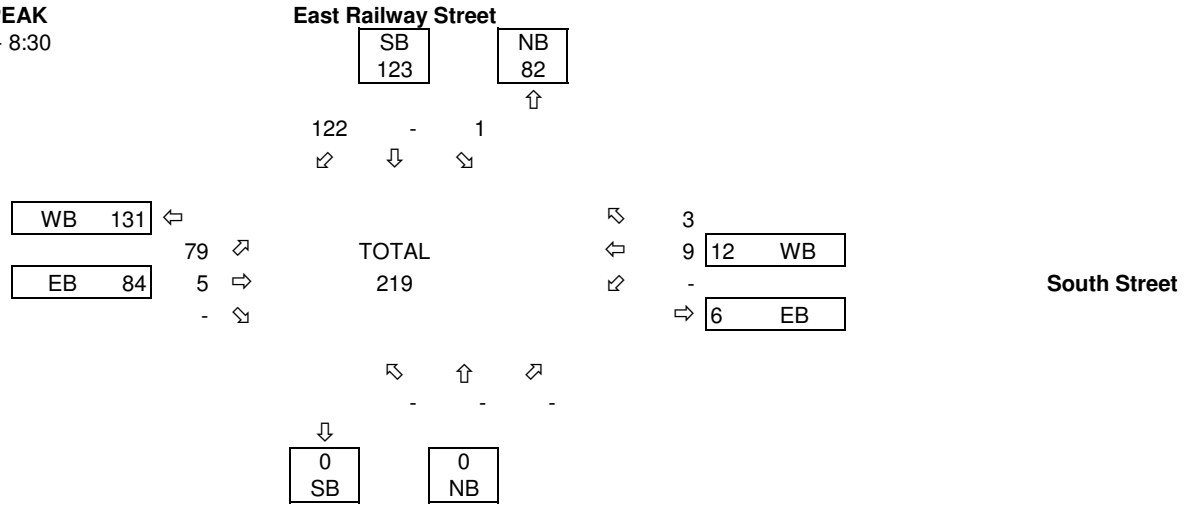
PM PEAK
16:45 - 17:45

Parkwood Road

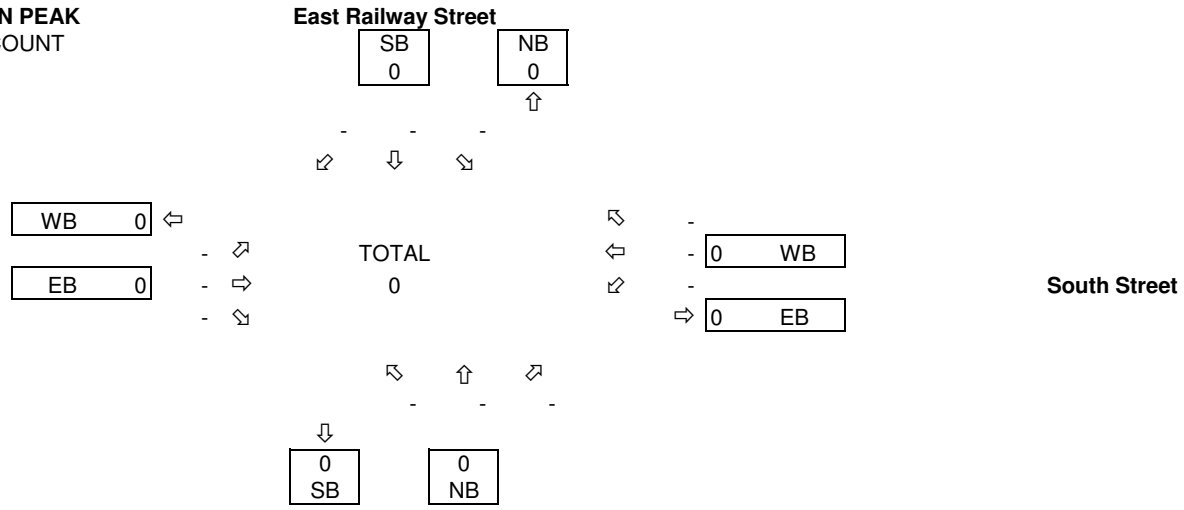


Park Street

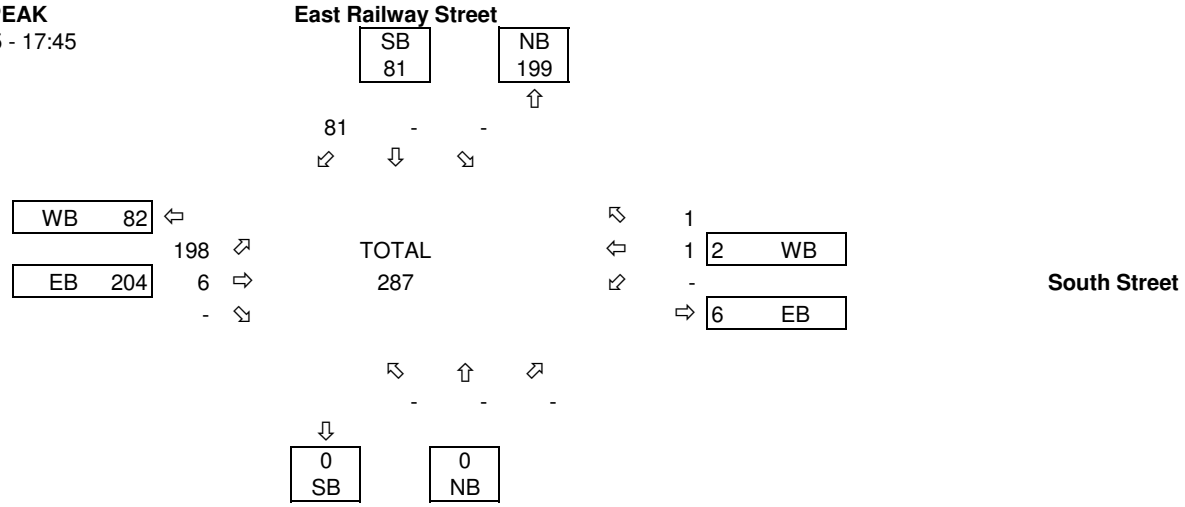
AM PEAK
7:30 - 8:30



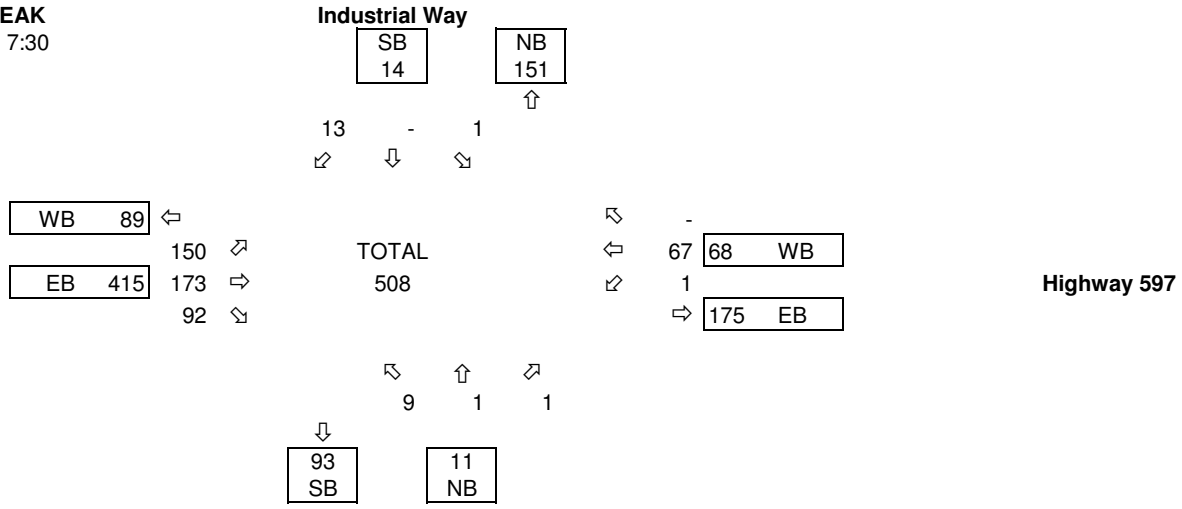
NOON PEAK
NO COUNT



PM PEAK
16:45 - 17:45

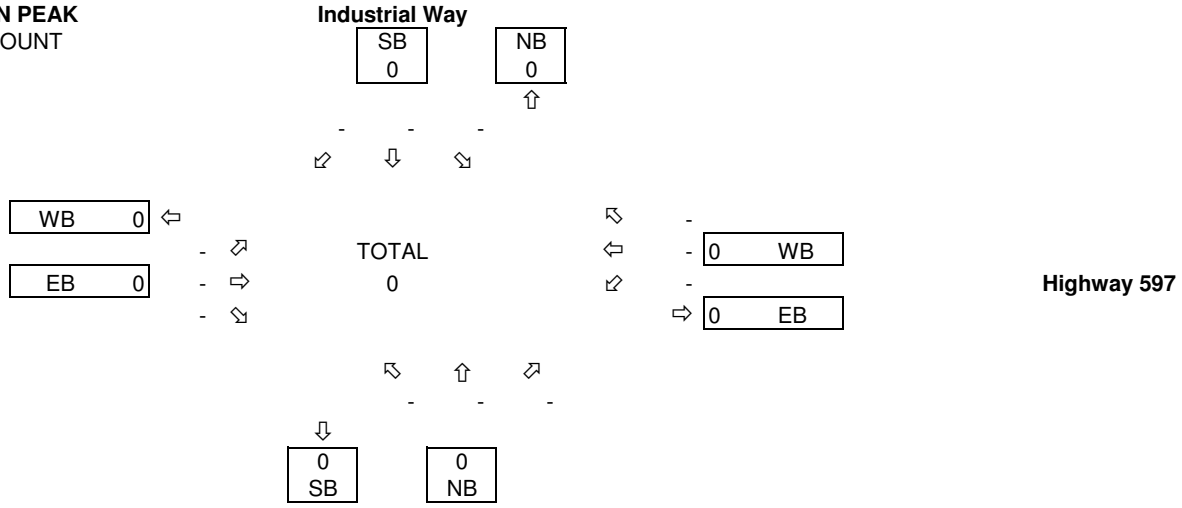


AM PEAK
6:30 - 7:30



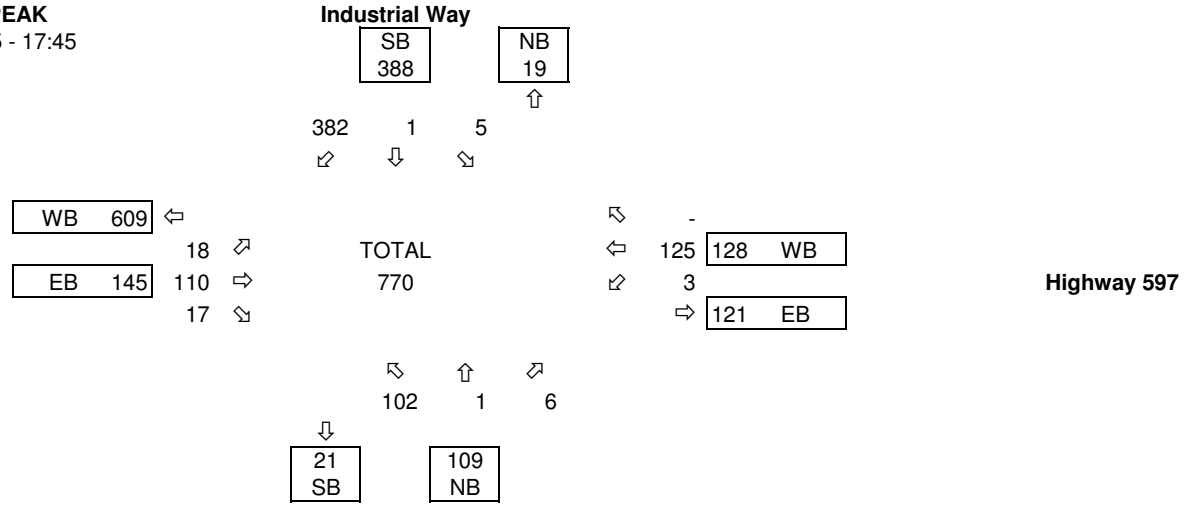
Highway 597

NOON PEAK
NO COUNT



Highway 597

PM PEAK
16:45 - 17:45



Highway 597

Appendix B ME2 Transportation Data – Traffic Flow Analysis Reports

INTERSECTION TRAFFIC FLOW ANALYSIS REPORT

ME2 TRANSPORTATION DATA CORP.

Location Highway 2a & Gregg Street Date June 4,2013 Observers Virginia & James

time	FROM THE NORTH on Highway 2a						FROM THE SOUTH on Highway 2a						FROM THE EAST on Greeg Street						FROM THE WEST on Gregg Street					
ending	LT	ST	RT	CV	PED	BIKE	LT	ST	RT	CV	PED	BIKE	LT	ST	RT	CV	PED	BIKE	LT	ST	RT	CV	PED	BIKE
6:45	2	68	1	0	0	0	0	17	8	2	0	0	36	7	8	6	0	0	3	16	2	0	0	0
7:00	3	58	2	3	0	1	0	23	10	3	0	0	38	12	10	0	0	1	2	34	2	0	1	1
7:15	0	63	9	0	0	2	3	30	14	3	0	0	36	17	2	1	0	3	2	13	2	0	1	0
7:30	4	76	2	1	0	1	0	33	15	3	0	0	60	13	4	2	1	3	1	23	3	1	0	0
7:45	1	114	7	1	0	4	2	37	18	3	0	0	74	31	2	2	3	3	9	17	1	0	0	1
8:00	4	77	7	4	0	3	3	56	17	3	0	1	48	36	7	5	4	5	6	24	2	0	0	1
8:15	1	70	11	2	0	2	3	51	22	4	0	0	60	22	1	2	0	0	10	26	7	6	0	0
8:30	6	69	5	1	0	0	8	59	15	5	0	0	33	17	8	5	0	2	8	36	2	0	0	0
8:45	10	64	5	1	0	1	0	42	12	4	0	0	35	13	3	3	0	1	6	11	0	0	0	0
9:00	3	48	3	2	0	0	4	34	12	2	0	0	26	21	6	1	0	0	8	13	3	1	1	0
9:15	5	60	4	5	0	0	0	46	17	3	0	0	17	12	2	2	1	0	5	20	0	0	0	0
9:30	2	50	5	2	0	0	0	36	17	1	0	0	25	11	4	0	0	0	5	12	3	0	0	0
3 hr total	41	817	61	22	0	14	23	464	177	36	0	1	488	212	57	29	9	18	65	245	27	8	3	3
		919		2%				664		5%				757		4%				337		2%		
peak hour	12	330	30				16	203	72				215	106	18				33	103	12			
		372						291						339						148				
3:45	18	77	7	4	0	1	2	84	26	4	0	2	18	30	2	3	5	2	8	23	1	1	0	3
4:00	18	55	11	7	0	1	4	60	35	0	0	3	32	15	6	2	1	1	10	29	0	0	0	0
4:15	11	88	10	2	0	0	3	70	30	5	0	3	24	27	9	3	5	2	10	28	1	0	6	0
4:30	8	84	10	2	0	1	1	61	30	1	0	3	23	35	5	5	1	0	3	42	0	2	14	0
4:45	13	91	17	1	0	1	8	94	33	3	0	3	29	30	4	3	2	2	14	39	2	0	9	0
5:00	4	81	9	3	0	0	3	53	34	1	0	0	22	38	3	1	2	7	9	41	0	0	0	1
5:15	6	75	11	1	0	1	7	85	32	0	0	2	27	38	2	1	3	6	12	40	0	0	0	0
5:30	7	62	18	0	0	0	5	109	51	0	0	4	25	56	7	4	5	1	10	45	1	0	0	3
5:45	6	53	7	1	0	3	8	100	43	2	1	4	35	30	4	2	0	5	11	46	1	1	0	2
6:00	9	58	12	0	0	4	1	70	15	3	0	1	27	30	1	3	2	1	8	33	2	1	5	1
6:15	12	56	11	1	0	4	3	57	29	1	0	3	33	28	4	1	3	1	10	21	2	1	0	1
6:30	8	43	7	1	0	0	3	47	33	1	0	0	23	36	3	1	7	1	12	22	4	0	1	0
3 hr total	120	823	130	23	0	16	48	890	391	21	1	28	318	393	50	29	36	29	117	409	14	6	35	11
		1073		2%				1329		2%				761		4%				540		1%		
peak hour	30	309	55				23	341	150				103	162	16				45	165	3			
		394						514						281						213				
6 hour	161	1640	191				71	1354	568				806	605	107				182	654	41			
total		1992						1993						1518						877				
2 direct L	SB	1992	55%				NB	1993	44%				WB	1518	52%				EB	877	50%			
total	NB	1643	45%				SB	2487	56%				EB	1383	48%				WB	867	50%			
		3635						4480						2901						1744				

INTERSECTION TRAFFIC FLOW ANALYSIS REPORT

ME2 TRANSPORTATION DATA CORP.

Location Park Street & Highway 2a Date June 3, 2013 Observers Henry & Alex

time	FROM THE NORTH on Highway 2a						FROM THE SOUTH on Highway 2a						FROM THE EAST on Park Street						FROM THE WEST on Park Street					
ending	LT	ST	RT	CV	PED	BIKE	LT	ST	RT	CV	PED	BIKE	LT	ST	RT	CV	PED	BIKE	LT	ST	RT	CV	PED	BIKE
6:45	0	109	6	1	0	0	0	33	10	2	0	0	42	2	2	1	0	0	0	0	1	0	0	0
7:00	2	117	3	0	1	0	0	30	13	1	1	0	34	1	2	0	0	1	0	0	6	0	0	0
7:15	0	122	1	3	0	0	0	30	12	2	0	0	30	2	1	0	0	0	0	0	5	0	0	0
7:30	0	145	0	6	1	0	0	41	13	2	1	1	57	3	0	1	1	0	0	0	10	0	0	0
7:45	1	183	0	7	0	1	0	64	9	7	2	1	77	7	1	1	3	0	0	0	19	0	0	0
8:00	1	142	1	5	0	2	0	73	19	4	0	0	54	9	2	0	0	0	0	0	1	0	0	0
8:15	1	137	1	8	0	0	0	61	13	4	0	0	62	10	1	1	1	0	0	0	0	0	0	0
8:30	0	95	2	4	0	0	0	60	27	8	0	0	23	4	5	1	0	0	0	0	0	0	0	0
8:45	0	113	3	3	0	0	0	57	18	4	1	0	32	5	1	1	0	0	0	0	0	0	0	0
9:00	0	72	2	10	0	0	0	48	23	3	0	0	8	5	0	0	0	0	0	0	0	0	0	0
9:15	0	76	1	5	0	0	0	43	13	3	0	0	24	3	1	1	0	0	0	1	4	0	0	0
9:30	0	63	0	6	0	0	0	67	14	5	2	0	8	4	1	0	0	0	0	0	8	0	0	0
3 hr total	5	1374	20	58	2	3	0	607	184	45	7	2	451	55	17	7	5	1	0	1	54	0	0	0
		1399		4%				791		6%				523		1%				55		0%		
peak hour	3	607	2				0	239	54				250	29	4				0	0	30			
		612						293						283						30				
3:45	0	59	3	4	0	0	0	37	18	1	0	1	21	9	1	0	2	0	5	8	9	0	4	1
4:00	0	90	5	2	2	4	0	85	35	5	1	1	20	13	1	1	1	4	5	15	4	0	1	0
4:15	4	97	6	2	0	0	0	88	41	6	2	1	20	27	2	2	0	2	3	5	3	0	0	1
4:30	3	93	2	5	0	0	0	95	39	6	1	2	17	8	1	2	1	2	3	5	9	0	0	0
4:45	0	126	4	4	0	0	0	98	40	3	0	1	19	6	4	1	0	0	8	20	12	1	0	2
5:00	4	93	2	4	0	0	0	137	49	4	1	2	26	5	0	0	2	2	3	9	8	0	1	1
5:15	4	110	5	6	0	1	0	80	44	4	0	2	19	10	0	0	1	0	13	28	7	0	0	2
5:30	2	94	8	4	0	0	0	60	36	1	0	0	23	14	3	2	0	1	3	19	0	1	0	0
5:45	0	86	2	8	0	0	0	78	53	1	0	2	17	16	1	1	0	2	4	15	6	1	0	0
6:00	0	81	4	5	0	2	0	90	45	3	0	0	32	15	3	0	0	2	3	13	8	0	0	0
6:15	0	66	1	1	0	0	0	52	25	1	0	1	36	6	1	1	0	2	5	10	4	0	0	1
6:30	1	62	6	4	0	0	0	48	33	0	0	1	25	16	0	1	6	3	2	8	0	0	1	1
3 hr total	18	1057	48	49	2	7	0	948	458	35	5	14	275	145	17	11	13	20	57	155	70	3	7	9
		1123		4%				1406		2%				437		3%				282		1%		
peak hour	11	422	13				0	410	172				81	29	5				27	62	36			
		446						582						115						125				
6 hour	23	2431	68				0	1555	642				726	200	34				57	156	124			
total		2522						2197						960						337				
2 direct L	SB	2522	61%				NB	2197	40%				WB	960	54%				EB	337	56%			
total	NB	1646	39%				SB	3281	60%				EB	821	46%				WB	268	44%			
		4168						5478						1781						605				

INTERSECTION TRAFFIC FLOW ANALYSIS REPORT

ME2 TRANSPORTATION DATA CORP.

Location Highway 2a & South Street Date June 4,2013 Observers Lilly

time	FROM THE NORTH on Highway 2a						FROM THE SOUTH on Highway 2a						FROM THE EAST on South Street						FROM THE WEST on South Street					
ending	LT	ST	RT	CV	PED	BIKE	LT	ST	RT	CV	PED	BIKE	LT	ST	RT	CV	PED	BIKE	LT	ST	RT	CV	PED	BIKE
6:45	0	177	0	7	0	0	0	39	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:00	1	140	0	7	0	5	0	48	1	11	1	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15	0	169	0	6	2	4	0	58	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30	2	249	0	6	2	3	0	70	1	6	1	1	0	0	0	0	0	0	0	0	0	0	0	0
7:45	2	298	0	9	3	7	0	75	3	8	2	1	1	0	0	1	0	0	0	0	0	0	0	0
8:00	4	192	0	10	2	5	0	107	3	13	0	1	0	0	0	0	0	0	0	0	0	0	0	0
8:15	0	193	0	8	0	4	0	91	1	11	0	0	2	0	0	1	0	0	0	0	0	0	0	0
8:30	0	147	0	11	1	1	0	106	2	15	0	3	0	0	2	0	0	0	0	0	0	0	0	0
8:45	0	143	0	9	0	3	0	87	1	14	0	0	1	0	1	2	0	0	0	0	0	0	0	0
9:00	1	96	0	7	0	0	0	66	2	6	0	0	0	0	2	1	0	0	0	0	0	0	0	0
9:15	3	103	0	7	0	0	0	79	4	8	0	0	1	0	3	1	0	0	0	0	0	0	0	0
9:30	3	102	0	12	0	0	0	85	1	8	0	0	2	0	3	0	0	0	0	0	0	0	0	0
3 hr total	16	2009	0	99	10	32	0	911	19	112	4	6	7	0	11	6	0	0	0	0	0	0	0	0
		2025		5%				930		12%				18		33%				0		#DIV/0!		
peak hour	8	932	0				0	343	8				3	0	0				0	0	0			
		940						351						3						0				
3:45	3	120	0	9	0	2	0	163	0	11	0	2	1	0	0	0	0	0	0	0	0	0	0	0
4:00	0	114	0	11	0	1	0	147	1	4	0	2	3	0	0	0	0	0	0	0	0	0	0	0
4:15	4	127	0	11	0	3	0	169	2	10	0	1	0	27	1	0	0	0	0	0	0	0	0	0
4:30	1	150	0	17	0	2	0	156	0	8	0	5	0	0	0	0	0	0	0	0	0	0	0	0
4:45	1	164	0	9	0	3	0	208	0	8	1	4	1	0	6	1	0	0	0	0	0	0	0	0
5:00	1	136	0	9	0	2	0	124	0	4	0	2	1	0	5	1	0	1	0	0	0	0	0	0
5:15	0	153	0	12	0	2	0	235	1	10	0	4	0	0	4	1	0	1	0	0	0	0	0	0
5:30	0	112	0	9	0	0	0	248	0	3	0	5	0	0	0	0	0	0	0	0	0	0	1	0
5:45	1	123	0	8	0	2	0	248	1	9	0	7	1	0	1	0	0	3	0	0	0	0	0	0
6:00	0	140	0	7	0	14	0	157	0	6	0	4	0	0	0	0	0	0	0	0	0	0	0	0
6:15	2	114	0	3	0	1	0	128	0	3	0	6	0	0	1	0	0	0	0	0	0	0	0	0
6:30	1	103	0	5	0	1	0	127	0	3	3	1	1	0	2	1	0	0	0	0	0	0	0	0
3 hr total	14	1556	0	110	0	33	0	2110	5	79	4	43	8	27	20	4	0	5	0	0	0	0	1	0
		1570		7%				2115		4%				55		7%				0		#DIV/0!		
peak hour	1	528	0				0	888	2				1	0	5				0	0	0			
		529						890						6						0				
6 hour	30	3565	0				0	3021	24				15	27	31				0	0	0			
total		3595						3045						73						0				
2 direct L	SB	3595	54%				NB	3045	46%				WB	73	57%				EB	0	0%			
total	NB	3052	46%				SB	3580	54%				EB	54	43%				WB	27	100%			
		6647						6625						127						27				

INTERSECTION TRAFFIC FLOW ANALYSIS REPORT

ME2 TRANSPORTATION DATA CORP.

Location Highway 2a & Broadway Avenue Date June 4,2013 Observers Henry

time	FROM THE NORTH on Highway 2a						FROM THE SOUTH on Highway 2a						FROM THE EAST on Broadway Avenue						FROM THE WEST on Broadway Avenue					
ending	LT	ST	RT	CV	PED	BIKE	LT	ST	RT	CV	PED	BIKE	LT	ST	RT	CV	PED	BIKE	LT	ST	RT	CV	PED	BIKE
6:45	0	199	1	8	0	0	17	48	0	3	0	0	0	0	0	0	0	0	1	0	31	0	0	1
7:00	0	156	0	5	0	4	26	66	0	14	4	1	0	0	0	0	0	0	0	0	28	0	0	0
7:15	0	190	0	3	4	5	36	83	0	10	1	1	0	0	0	0	0	0	0	0	31	0	0	2
7:30	0	292	0	6	4	4	23	90	0	3	1	1	0	0	0	0	0	0	0	0	41	1	0	1
7:45	0	378	0	9	2	13	38	100	0	3	5	2	0	0	0	0	0	0	0	0	53	0	1	1
8:00	0	268	0	14	0	6	27	100	0	6	0	2	0	0	0	0	0	0	0	0	41	3	5	2
8:15	0	222	0	7	0	5	17	103	0	8	0	0	0	0	0	0	0	0	0	0	39	1	0	1
8:30	0	158	0	4	3	2	24	117	0	12	3	4	0	0	0	0	0	0	0	0	36	2	0	0
8:45	0	172	0	6	0	3	23	96	0	7	0	0	0	0	0	0	0	0	0	0	18	0	3	0
9:00	0	102	0	0	0	0	25	74	0	6	0	0	0	0	0	0	0	0	1	0	13	0	0	2
9:15	0	114	0	3	0	0	22	83	0	3	0	0	0	0	0	0	0	0	0	0	17	1	0	0
9:30	0	109	1	4	0	0	22	78	0	5	1	0	0	0	0	0	0	0	0	0	13	0	0	0
3 hr total	0	2360	2	69	13	42	300	1038	0	80	15	11	0	0	0	0	0	0	2	0	361	8	9	10
		2362		3%				1338		6%				0		#DIV/0!				363		2%		
peak hour	0	1160	0				105	393	0				0	0	0				0	0	174			
		1160						498						0						174				
3:45	0	143	1	4	0	2	35	177	0	4	1	2	0	0	0	0	0	0	1	0	17	1	0	0
4:00	0	124	1	10	0	1	39	160	0	2	3	3	0	0	0	0	0	0	0	0	19	0	0	0
4:15	0	145	2	4	0	3	52	175	0	4	1	1	0	27	0	0	0	0	0	0	10	0	0	0
4:30	0	181	1	10	0	2	51	179	0	5	5	5	0	0	0	0	0	0	0	0	14	0	0	1
4:45	0	169	3	8	2	3	69	258	0	6	2	7	0	0	0	0	0	0	0	0	18	0	0	0
5:00	0	151	2	9	0	4	41	141	0	1	1	4	0	0	0	0	0	0	0	0	20	1	0	0
5:15	0	164	1	9	0	3	83	277	0	3	0	7	0	0	0	0	0	0	0	0	20	0	0	0
5:30	0	130	0	9	0	0	126	273	0	4	0	10	0	0	0	0	0	0	1	0	21	0	0	0
5:45	0	142	3	4	0	3	69	256	0	4	0	13	0	0	0	0	0	0	0	0	16	0	0	1
6:00	0	154	0	4	0	17	41	174	0	3	0	9	0	0	0	0	0	0	0	0	15	0	0	0
6:15	0	132	1	0	1	3	40	139	0	2	0	6	0	0	0	0	0	0	0	0	12	0	0	0
6:30	0	122	2	3	0	1	29	137	0	0	0	1	0	0	0	0	0	0	0	0	13	0	0	0
3 hr total	0	1757	17	74	3	42	675	2346	0	38	13	68	0	27	0	0	0	0	2	0	195	2	0	2
		1774		4%				3021		1%				27		0%				197		1%		
peak hour	0	614	6				319	949	0				0	0	0				1	0	79			
		620						1268						0						80				
6 hour	0	4117	19				975	3384	0				0	27	0				4	0	556			
total		4136						4359						27						560				
2 direct L	SB	4136	55%				NB	4359	48%				WB	27	100%				EB	560	35%			
total	NB	3388	45%				SB	4673	52%				EB	0	0%				WB	1021	65%			
		7524						9032						27						1581				

INTERSECTION TRAFFIC FLOW ANALYSIS REPORT

ME2 TRANSPORTATION DATA CORP.

Location Broadway Avenue & Westbrook Street Date June 5, 2013 Observers lilly

time	FROM THE NORTH on Broadway Avenue						FROM THE SOUTH on Broadway Avenue						FROM THE EAST on Westbrook Street						FROM THE WEST on Westbrook Street					
ending	LT	ST	RT	CV	PED	BIKE	LT	ST	RT	CV	PED	BIKE	LT	ST	RT	CV	PED	BIKE	LT	ST	RT	CV	PED	BIKE
6:45	0	2	2	0	0	0	3	4	0	0	2	0	0	0	0	0	1	0	3	0	24	1	0	0
7:00	0	0	0	0	0	0	7	2	0	1	1	0	0	0	0	0	0	0	3	0	12	0	0	0
7:15	0	4	1	0	0	0	2	4	0	0	0	0	0	0	0	0	0	0	3	0	28	2	0	0
7:30	0	10	2	1	0	0	5	5	0	1	0	0	0	0	0	0	0	0	2	0	37	0	0	1
7:45	0	8	1	1	0	0	7	5	0	1	1	0	0	0	0	0	0	0	7	0	45	0	3	1
8:00	0	11	1	0	0	0	6	9	0	1	0	0	0	0	0	0	0	0	4	0	45	1	0	3
8:15	0	5	1	0	0	0	12	10	0	0	0	0	0	0	0	0	0	0	11	0	43	2	0	2
8:30	0	6	2	2	0	0	24	11	0	0	0	2	0	0	0	0	0	0	10	0	17	0	0	1
8:45	0	5	2	0	0	0	8	5	0	1	0	0	0	0	0	0	0	0	9	0	13	1	1	0
9:00	0	3	3	0	0	2	7	8	0	1	0	0	0	0	0	0	0	0	1	0	23	0	0	0
9:15	0	5	1	1	0	0	12	6	0	0	0	0	0	0	0	0	0	0	2	0	10	0	0	0
9:30	0	6	1	0	0	0	10	1	0	2	0	0	0	0	0	0	0	0	7	0	12	0	0	0
3 hr total	0	65	17	5	0	2	103	70	0	8	4	2	0	0	0	0	1	0	62	0	309	7	4	8
		82		6%				173		5%				0		#DIV/0!				371		2%		
peak hour	0	30	5				49	35	0				0	0	0				32	0	150			
		35						84						0						182				
3:45	0	9	7	1	0	0	17	12	0	4	0	0	0	0	0	0	0	0	1	0	12	3	0	1
4:00	0	11	12	5	8	0	25	9	0	1	0	0	0	0	0	0	0	0	3	0	15	1	0	1
4:15	0	5	7	1	0	0	22	6	0	1	1	1	0	27	0	0	1	0	4	0	19	2	0	0
4:30	0	9	4	1	0	0	39	13	0	3	1	1	0	0	0	0	0	0	0	0	22	1	5	0
4:45	0	20	9	2	0	2	30	16	0	1	0	1	0	0	0	0	0	0	1	0	21	1	1	2
5:00	0	16	4	3	0	0	44	11	0	0	0	1	0	0	0	0	0	0	5	0	22	0	1	2
5:15	0	13	4	1	1	2	46	13	0	0	1	1	0	0	0	0	0	0	5	0	25	1	3	0
5:30	0	15	3	1	1	2	46	15	0	1	1	3	0	0	0	0	1	0	8	0	29	0	0	3
5:45	0	13	10	0	4	0	41	5	0	1	0	3	0	0	0	0	0	0	6	0	19	1	1	1
6:00	0	10	4	0	0	0	31	8	0	0	1	0	0	0	0	0	1	0	2	0	20	0	0	2
6:15	0	7	2	1	1	0	23	6	0	0	0	0	0	0	0	0	0	0	2	0	17	1	0	4
6:30	0	13	4	2	2	0	31	5	0	0	0	6	0	0	0	0	0	0	2	0	25	0	0	0
3 hr total	0	141	70	18	17	6	395	119	0	12	5	17	0	27	0	0	3	0	39	0	246	11	11	16
		211		9%				514		2%				27		0%				285		4%		
peak hour	0	64	20				166	55	0				0	0	0				19	0	97			
		84						221						0						116				
6 hour	0	206	87				498	189	0				0	27	0				101	0	555			
total		293						687						27						656				
2 direct L	SB	293	50%				NB	687	47%				WB	27	100%				EB	656	52%			
total	NB	290	50%				SB	761	53%				EB	0	0%				WB	612	48%			
		583						1448						27						1268				

INTERSECTION TRAFFIC FLOW ANALYSIS REPORT

ME2 TRANSPORTATION DATA CORP.

Location: Broadway Avenue & Womack Street | Date: June 5, 2013 | Observers: alex

time ending	FROM THE NORTH on Broadway Avenue						FROM THE SOUTH on Broadway Avenue						FROM THE EAST on Womack Street						FROM THE WEST on Womack Street					
	LT	ST	RT	CV	PED	BIKE	LT	ST	RT	CV	PED	BIKE	LT	ST	RT	CV	PED	BIKE	LT	ST	RT	CV	PED	BIKE
6:45	0	0	1	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	22	0	0	0
7:00	0	0	1	0	0	0	6	0	0	1	0	0	0	0	0	0	0	0	0	0	25	0	0	0
7:15	0	0	1	0	0	0	5	0	0	1	0	0	0	0	0	0	0	0	0	0	25	0	0	1
7:30	0	0	0	0	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	35	0	1	1
7:45	0	0	3	0	0	0	15	0	0	0	2	1	0	0	0	0	0	0	0	0	53	1	2	2
8:00	0	0	5	0	0	0	28	0	0	0	3	0	0	0	0	0	0	0	0	0	47	0	2	1
8:15	0	0	4	1	0	0	33	0	0	0	2	0	0	0	0	0	0	0	0	0	61	0	6	0
8:30	0	0	0	0	0	0	13	0	0	0	0	0	0	0	0	0	0	0	0	0	14	0	0	0
8:45	0	0	2	0	0	0	10	0	0	0	0	0	0	0	0	0	0	0	0	0	21	1	1	0
9:00	0	0	1	0	0	0	10	0	0	0	0	0	0	0	0	0	0	0	0	0	15	0	1	0
9:15	0	0	2	0	0	0	10	0	0	0	0	0	0	0	0	0	0	0	0	0	17	0	0	0
9:30	0	0	1	0	0	0	7	0	0	1	0	0	0	0	0	0	0	0	0	0	18	0	0	0
3 hr total	0	0	21	1	0	0	149	0	0	3	7	1	0	0	0	0	0	0	0	0	353	2	13	5
		21		5%				149		2%				0		#DIV/0!				353		1%		
peak hour	0	0	12				84	0	0				0	0	0				0	0	196			
		12						84						0						196				
3:45	0	0	4	0	0	0	33	0	0	3	0	0	0	0	0	0	0	0	0	0	16	2	0	1
4:00	0	0	5	0	2	1	25	0	0	1	1	0	0	0	0	0	0	0	0	0	23	0	1	0
4:15	0	0	1	0	0	0	38	0	0	0	1	2	0	27	0	0	0	0	0	0	15	1	1	0
4:30	0	0	1	0	0	0	33	0	0	0	2	0	0	0	0	0	0	0	0	0	17	1	0	0
4:45	0	0	3	0	0	0	33	0	0	0	0	0	0	0	0	0	0	0	0	0	14	0	0	0
5:00	0	0	4	0	0	1	40	0	0	2	0	1	0	0	0	0	0	0	0	0	15	1	0	0
5:15	0	0	3	0	0	0	39	0	0	1	0	1	0	0	0	0	0	0	0	0	22	1	0	0
5:30	0	0	1	0	0	0	44	0	0	0	0	0	0	0	0	0	0	0	0	0	29	0	0	2
5:45	0	0	4	0	0	0	29	0	0	0	0	0	0	0	0	0	0	0	0	0	24	0	0	1
6:00	0	0	4	0	0	0	38	0	0	1	0	2	0	0	0	0	0	0	0	0	15	0	0	1
6:15	0	0	0	0	0	0	32	0	0	0	0	1	0	0	0	0	0	0	0	0	16	0	0	0
6:30	0	0	0	0	0	0	26	0	0	0	0	1	0	0	0	0	0	0	0	0	32	0	0	0
3 hr total	0	0	30	0	2	2	410	0	0	8	4	8	0	27	0	0	0	0	0	0	238	6	2	5
		30		0%				410		2%				27		0%				238		3%		
peak hour	0	0	12				152	0	0				0	0	0				0	0	90			
		12						152						0						90				
6 hour total	0	0	51				559	0	0				0	27	0				0	0	591			
		51						559						27						591				
2 direct L	SB	51	100%				NB	559	49%				WB	27	100%				EB	591	48%			
total	NB	0	0%				SB	591	51%				EB	0	0%				WB	637	52%			
		51						1150						27						1228				

INTERSECTION TRAFFIC FLOW ANALYSIS REPORT

ME2 TRANSPORTATION DATA CORP.

Location Broadway Avenue & Gregg Street Date June 5, 2013 Observers henry

time	FROM THE NORTH on Broadway Avenue						FROM THE SOUTH on Broadway Avneue						FROM THE EAST on Gregg Street						FROM THE WEST on Gregg Street					
ending	LT	ST	RT	CV	PED	BIKE	LT	ST	RT	CV	PED	BIKE	LT	ST	RT	CV	PED	BIKE	LT	ST	RT	CV	PED	BIKE
6:45	25	61	0	1	1	0	0	18	14	2	3	1	0	0	0	0	0	0	0	0	0	0	0	0
7:00	32	44	0	0	1	1	0	10	1	0	0	0	1	0	3	0	0	0	0	0	0	0	0	0
7:15	23	61	0	0	0	1	0	10	7	1	1	1	7	0	16	0	2	1	0	0	0	0	0	1
7:30	41	66	0	2	2	3	0	7	6	1	0	0	9	0	13	0	0	0	0	0	0	0	0	0
7:45	30	105	0	0	4	3	0	11	7	0	1	0	32	0	24	1	2	1	0	0	0	0	0	0
8:00	37	103	0	1	6	1	0	24	6	0	6	0	12	0	25	1	2	0	0	0	0	0	0	0
8:15	37	94	0	1	4	0	0	52	25	3	5	0	9	0	18	0	0	0	0	0	0	0	0	0
8:30	21	30	0	2	0	1	0	31	18	5	0	0	4	0	17	1	0	0	0	0	0	0	1	0
8:45	15	41	0	4	2	0	0	18	9	1	0	0	5	0	16	1	1	0	0	0	0	0	0	0
9:00	8	12	0	2	0	0	0	6	2	0	0	0	4	0	4	0	0	0	0	0	0	0	0	0
9:15	7	29	0	3	0	0	0	9	9	0	0	0	3	0	13	1	0	0	0	0	0	0	0	0
9:30	12	34	0	1	0	0	0	15	17	1	0	0	11	0	12	1	0	0	0	0	0	0	0	0
3 hr total	288	680	0	17	20	10	0	211	121	14	16	2	97	0	161	6	7	2	0	0	0	0	1	1
		968		2%				332		4%				258		2%				0		#DIV/0!		
peak hour	145	368	0				0	94	44				62	0	80				0	0	0			
		513						138						142						0				
3:45	25	36	0	6	0	0	0	71	23	8	3	1	21	0	20	1	0	0	0	0	0	0	0	0
4:00	16	50	0	4	2	1	0	73	21	4	1	1	11	0	23	0	2	0	0	0	0	0	0	0
4:15	15	46	0	6	3	1	0	73	15	3	0	2	8	27	19	0	2	0	0	0	0	0	0	0
4:30	16	44	0	4	0	0	0	65	19	2	2	0	10	0	28	0	3	0	0	0	0	0	0	0
4:45	31	44	0	3	0	0	0	74	25	1	0	0	13	0	29	0	0	0	0	0	0	0	0	0
5:00	25	45	0	4	0	1	0	104	29	2	1	3	6	0	24	0	0	0	0	0	0	0	0	0
5:15	21	44	0	4	0	0	0	94	39	4	0	0	8	0	33	1	0	0	0	0	0	0	0	0
5:30	26	52	0	3	0	0	0	84	33	1	0	1	14	0	37	0	0	0	0	0	0	0	0	0
5:45	25	52	0	0	0	2	0	84	24	1	0	1	7	0	28	1	0	0	0	0	0	0	0	0
6:00	18	35	0	1	0	1	0	65	19	2	0	0	8	0	37	0	0	0	0	0	0	0	0	0
6:15	13	40	0	2	0	2	0	63	9	1	0	1	9	0	24	2	1	1	0	0	0	0	0	0
6:30	45	45	0	1	0	0	0	50	24	1	0	0	24	0	26	2	0	1	0	0	0	0	0	0
3 hr total	276	533	0	38	5	8	0	900	280	30	7	10	139	27	328	7	8	2	0	0	0	0	0	0
		809		5%				1180		3%				494		1%				0		#DIV/0!		
peak hour	97	193	0				0	366	125				35	0	122				0	0	0			
		290						491						157						0				
6 hour	564	1213	0				0	1111	401				236	27	489				0	0	0			
total		1777						1512						752						0				
2 direct L	SB	1777	53%				NB	1512	51%				WB	752	44%				EB	0	0%			
total	NB	1600	47%				SB	1449	49%				EB	965	56%				WB	27	100%			
		3377						2961						1717						27				

INTERSECTION TRAFFIC FLOW ANALYSIS REPORT

ME2 TRANSPORTATION DATA CORP.

Location Broadway Avenue & Wilson/East Railway Street Date June 5, 2013 Observers Doug & Tom

time	FROM THE NORTH on Broadway Avenue						FROM THE SOUTH on Broadway Avenue						FROM THE EAST on Wilson Street						FROM THE WEST on East Railway Street					
ending	LT	ST	RT	CV	PED	BIKE	LT	ST	RT	CV	PED	BIKE	LT	ST	RT	CV	PED	BIKE	LT	ST	RT	CV	PED	BIKE
6:45	1	41	7	1	0	0	0	6	1	0	0	0	0	0	1	0	0	0	2	0	0	0	0	0
7:00	3	28	7	1	0	1	1	7	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
7:15	2	35	7	2	0	0	0	9	1	1	0	0	0	0	0	0	0	0	5	0	1	0	0	1
7:30	1	61	9	2	0	2	2	5	3	1	0	0	1	1	2	0	0	0	2	0	0	0	0	0
7:45	1	104	19	5	0	11	4	16	0	2	2	0	3	0	1	0	0	0	0	0	1	0	3	0
8:00	0	74	24	3	3	7	3	13	0	1	1	0	0	1	0	0	1	0	7	1	6	2	9	0
8:15	1	63	33	1	0	3	2	51	3	1	0	0	0	1	1	0	0	0	10	1	5	2	4	0
8:30	1	31	11	1	0	1	0	49	2	3	0	0	1	1	2	1	0	0	7	0	4	1	0	0
8:45	0	34	3	3	0	0	1	18	0	0	0	0	0	0	1	0	0	0	5	1	1	0	0	0
9:00	8	37	3	3	0	0	1	14	2	2	0	0	0	0	0	0	2	0	4	2	4	1	0	0
9:15	5	23	4	3	0	0	4	14	4	0	0	0	0	0	6	0	0	0	4	1	4	2	2	0
9:30	6	32	4	0	0	0	0	25	1	0	1	0	2	0	0	0	0	0	4	0	2	1	0	0
3 hr total	29	563	131	25	3	25	18	227	17	11	4	0	7	4	15	1	3	0	50	6	28	9	18	1
		723		3%				262		4%				26		4%				84		11%		
peak hour	3	272	87				9	129	5				4	3	4				24	2	16			
		362						143						11						42				
3:45	2	33	4	6	0	2	2	48	3	3	2	0	1	1	4	0	2	1	4	0	1	1	0	0
4:00	1	55	5	2	5	3	1	69	6	2	0	9	0	1	6	0	6	1	9	0	4	2	1	0
4:15	4	45	5	3	0	8	2	65	3	4	14	1	3	27	4	0	10	0	11	1	7	2	9	0
4:30	2	43	10	5	0	0	4	58	7	2	3	2	3	0	2	0	0	0	19	0	3	2	5	0
4:45	2	50	6	2	0	0	1	61	5	0	6	2	0	1	8	0	0	0	13	0	7	1	3	1
5:00	2	45	6	4	1	2	7	97	14	3	1	2	1	0	12	0	0	0	17	2	12	1	2	0
5:15	4	37	10	5	0	0	2	85	8	4	3	0	1	0	7	0	4	0	35	1	4	0	11	0
5:30	3	48	14	1	0	0	4	76	8	4	1	0	3	0	5	0	1	0	30	3	9	1	2	0
5:45	6	46	13	3	0	0	2	65	5	2	1	1	2	0	9	1	4	0	26	3	5	2	2	0
6:00	1	32	7	1	0	0	2	58	3	3	0	0	1	0	3	0	1	0	20	1	9	0	0	1
6:15	3	39	3	2	0	0	2	48	2	0	1	0	0	0	6	0	0	0	11	3	4	1	6	0
6:30	2	41	10	4	0	0	2	45	3	1	0	0	3	0	2	0	2	0	16	3	9	0	3	0
3 hr total	32	514	93	38	6	15	31	775	67	28	32	17	18	30	68	1	30	2	211	17	74	13	44	2
		639		6%				873		3%				116		1%				302		4%		
peak hour	15	176	43				15	323	35				7	0	33				108	9	30			
		234						373						40						147				
6 hour	61	1077	224				49	1002	84				25	34	83				261	23	102			
total		1362						1135						142						386				
2 direct L	SB	1362	50%				NB	1135	49%				WB	142	46%				EB	386	56%			
total	NB	1346	50%				SB	1204	51%				EB	168	54%				WB	307	44%			
		2708						2339						310						693				

INTERSECTION TRAFFIC FLOW ANALYSIS REPORT

ME2 TRANSPORTATION DATA CORP.

Location Park Street & Broadway Avenue Date June 3, 2013 Observers Buck

time	FROM THE NORTH on Broadway Avenue						FROM THE SOUTH on Broadway Avenue						FROM THE EAST on Park Street						FROM THE WEST on Park Street					
ending	LT	ST	RT	CV	PED	BIKE	LT	ST	RT	CV	PED	BIKE	LT	ST	RT	CV	PED	BIKE	LT	ST	RT	CV	PED	BIKE
6:45	5	37	0	0	0	0	0	4	0	0	0	0	4	0	4	1	0	0	0	0	0	0	0	0
7:00	2	28	0	0	1	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15	9	41	0	0	3	1	0	10	0	0	1	0	1	0	1	0	0	0	0	0	0	0	0	0
7:30	21	43	0	1	0	0	0	6	1	0	0	0	3	0	2	0	0	0	0	0	0	0	0	0
7:45	24	66	0	2	5	2	0	10	6	1	6	0	3	0	10	1	0	0	0	0	0	0	0	0
8:00	18	57	0	2	13	4	0	23	0	1	0	2	4	0	4	0	1	1	0	0	0	0	0	0
8:15	11	54	0	0	2	0	0	60	5	2	2	0	7	0	8	1	0	0	0	0	0	0	0	0
8:30	3	34	0	0	4	0	0	29	4	0	3	0	2	0	3	0	0	0	0	0	0	0	0	0
8:45	5	29	0	0	5	0	0	15	1	0	0	0	3	0	2	0	2	0	0	0	0	0	0	0
9:00	5	19	0	2	1	1	0	17	1	0	0	0	1	0	6	0	4	0	0	0	0	0	0	0
9:15	9	23	0	2	3	0	0	18	3	1	4	1	1	0	12	0	5	0	0	0	0	0	0	0
9:30	4	26	0	0	2	0	0	7	3	0	1	0	0	0	7	0	2	0	0	0	0	0	0	0
3 hr total	116	457	0	9	39	8	0	201	26	5	17	3	29	0	59	3	14	1	0	0	0	0	0	0
		573		2%				227		2%				88		3%				0		#DIV/0!		
peak hour	74	220	0				0	99	12				17	0	24				0	0	0			
		294						111						41						0				
3:45	15	47	0	3	12	3	0	52	4	1	7	1	3	0	20	1	5	0	0	0	0	0	0	0
4:00	14	34	0	1	16	0	0	59	8	0	17	1	5	0	18	0	4	0	0	0	0	0	0	0
4:15	9	50	0	4	11	3	0	62	10	1	10	2	8	27	17	0	6	0	0	0	0	0	0	0
4:30	21	47	0	1	23	1	0	60	7	1	6	0	2	0	15	0	4	0	0	0	0	0	0	0
4:45	13	39	0	0	18	1	0	81	10	4	11	3	1	0	19	0	2	0	0	0	0	0	0	0
5:00	17	37	0	4	22	2	0	81	8	1	11	2	1	0	10	0	4	0	0	0	0	0	0	0
5:15	17	39	0	2	16	0	0	80	19	2	19	2	2	0	16	2	5	1	0	0	0	0	0	0
5:30	16	39	0	1	9	3	0	56	11	0	4	0	9	0	15	1	3	0	0	0	0	0	0	0
5:45	21	40	0	3	13	1	0	61	7	1	5	0	6	0	18	0	4	1	0	0	0	0	0	0
6:00	14	41	0	1	12	0	0	68	5	0	3	0	9	0	20	0	7	0	0	0	0	0	0	0
6:15	14	43	0	1	9	0	0	48	3	0	1	3	4	0	14	0	4	0	0	0	0	0	0	0
6:30	8	28	0	0	4	2	0	40	2	1	3	0	6	0	10	0	5	0	0	0	0	0	0	0
3 hr total	179	484	0	21	165	16	0	748	94	12	97	14	56	27	192	4	53	2	0	0	0	0	0	0
		663		3%				842		1%				275		1%				0		#DIV/0!		
peak hour	68	162	0				0	302	44				6	0	60				0	0	0			
		230						346						66						0				
6 hour	295	941	0				0	949	120				85	27	251				0	0	0			
total		1236						1069						363						0				
2 direct L	SB	1236	51%				NB	1069	51%				WB	363	47%				EB	0	0%			
total	NB	1200	49%				SB	1026	49%				EB	415	53%				WB	27	100%			
		2436						2095						778						27				

INTERSECTION TRAFFIC FLOW ANALYSIS REPORT

ME2 TRANSPORTATION DATA CORP.

Location Broadway Avenue & Indiana Street Date June 5, 2013 Observers Dana

time	FROM THE NORTH on Broadway Avenue						FROM THE SOUTH on Broadway Avenue						FROM THE EAST on Indiana Street						FROM THE WEST on Indiana Street					
ending	LT	ST	RT	CV	PED	BIKE	LT	ST	RT	CV	PED	BIKE	LT	ST	RT	CV	PED	BIKE	LT	ST	RT	CV	PED	BIKE
6:45	16	13	3	0	0	0	0	4	0	1	0	0	3	4	3	1	0	0	0	2	0	0	0	0
7:00	11	13	1	0	0	0	0	1	2	0	0	0	0	4	3	1	0	0	2	3	0	0	0	0
7:15	13	14	1	1	0	0	0	1	0	0	0	0	2	0	4	1	0	0	0	3	2	0	0	0
7:30	26	18	1	0	0	0	0	4	0	0	0	0	2	5	6	1	0	0	3	1	0	0	0	0
7:45	30	54	8	4	0	0	0	5	0	1	0	0	1	4	5	3	0	0	0	3	1	0	0	0
8:00	22	52	11	3	0	0	2	6	0	1	0	0	4	15	4	0	0	0	1	3	2	0	0	0
8:15	19	44	11	1	0	0	3	43	4	1	0	0	4	13	9	0	0	1	11	5	2	1	0	0
8:30	10	14	4	2	0	0	1	29	1	1	0	0	2	7	14	3	0	0	7	4	0	0	0	0
8:45	15	17	4	2	0	0	2	11	0	0	0	0	1	4	7	1	0	0	2	1	0	0	0	0
9:00	12	7	2	3	0	0	0	8	1	1	0	0	4	4	9	4	0	0	2	1	0	0	0	0
9:15	12	9	2	6	0	0	0	8	0	0	0	0	2	1	6	0	0	0	7	1	0	0	0	0
9:30	7	18	1	0	0	0	0	11	0	0	0	0	3	6	6	3	0	0	2	5	0	3	0	0
3 hr total	193	273	49	22	0	0	8	131	8	6	0	0	28	67	76	18	0	1	37	32	7	4	0	0
		515		4%				147		4%				171		11%				76		5%		
peak hour	81	164	34				6	83	5				11	39	32				19	15	5			
		279						94						82						39				
3:45	8	13	2	4	0	0	2	22	2	1	0	0	1	3	16	2	1	0	9	5	1	0	0	0
4:00	17	18	0	2	0	0	1	20	4	2	0	0	1	4	20	2	0	0	7	4	2	0	0	0
4:15	13	16	12	2	0	0	0	32	1	3	0	0	0	27	25	0	0	0	7	7	0	0	0	0
4:30	6	19	3	3	0	0	0	40	1	2	0	0	1	2	20	2	0	0	6	5	1	0	0	0
4:45	13	26	6	2	0	0	0	32	0	0	0	0	1	5	24	0	0	0	10	7	0	0	0	0
5:00	13	25	6	1	0	0	0	59	0	0	0	0	2	5	29	0	0	0	19	6	0	1	0	0
5:15	16	9	6	3	0	0	0	33	0	2	0	0	1	9	35	1	0	0	13	14	1	1	1	0
5:30	14	19	8	0	0	0	1	34	1	2	0	0	0	8	25	1	0	0	13	13	0	0	0	0
5:45	20	14	6	3	0	0	0	28	1	2	0	0	2	7	19	0	0	0	10	9	0	0	0	0
6:00	11	19	6	1	0	0	1	31	6	1	0	0	1	4	16	1	0	0	6	6	0	2	1	0
6:15	15	10	6	1	0	0	1	16	2	0	0	0	2	5	17	1	0	0	8	2	0	1	0	0
6:30	17	17	6	1	0	0	0	21	0	0	0	0	0	4	13	0	0	0	9	16	1	0	0	0
3 hr total	163	205	67	23	0	0	6	368	18	15	0	0	12	83	259	10	1	0	117	94	6	5	2	0
		435		5%				392		4%				354		3%				217		2%		
peak hour	56	79	26				1	158	1				4	27	113				55	40	1			
		161						160						144						96				
6 hour	356	478	116				14	499	26				40	150	335				154	126	13			
total		950						539						525						293				
2 direct L	SB	950	49%				NB	539	50%				WB	525	51%				EB	293	51%			
total	NB	988	51%				SB	531	50%				EB	508	49%				WB	280	49%			
		1938						1070						1033						573				

INTERSECTION TRAFFIC FLOW ANALYSIS REPORT

ME2 TRANSPORTATION DATA CORP.

Location Braodway Avenue & South Street Date June 5, 2013 Observers Teresa

time	FROM THE NORTH on Broadway Avenue						FROM THE SOUTH on Broadway Avenue						FROM THE EAST on South Street						FROM THE WEST on South Street					
ending	LT	ST	RT	CV	PED	BIKE	LT	ST	RT	CV	PED	BIKE	LT	ST	RT	CV	PED	BIKE	LT	ST	RT	CV	PED	BIKE
6:45	0	16	0	0	0	0	1	4	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0
7:00	1	11	0	0	0	1	3	2	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0
7:15	1	17	0	0	0	0	1	2	0	0	0	0	2	0	1	0	0	0	0	0	0	0	0	0
7:30	0	19	1	0	0	0	1	9	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0
7:45	0	47	1	0	1	0	3	5	0	0	2	0	0	0	1	0	0	0	0	1	0	0	1	0
8:00	0	37	0	3	1	0	1	7	0	0	0	0	0	1	0	0	0	0	1	0	4	1	0	0
8:15	0	28	6	1	0	0	2	7	0	1	0	0	0	0	0	0	0	0	2	0	1	0	0	0
8:30	0	12	1	1	0	0	0	4	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0
8:45	0	16	0	2	1	0	0	9	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
9:00	1	9	1	0	0	0	0	7	0	1	1	0	1	0	0	0	0	0	1	0	3	1	0	0
9:15	0	13	0	0	0	0	0	5	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0
9:30	0	20	0	0	0	0	1	7	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0
3 hr total	3	245	10	7	3	1	13	68	0	3	5	0	5	1	4	0	0	0	6	2	11	2	1	0
		258		3%				81		4%				10		0%				19		11%		
peak hour	0	131	8				7	28	0				0	1	1				3	1	6			
		139						35						2						10				
3:45	0	9	0	0	0	1	1	20	1	1	0	0	0	0	2	0	0	0	1	0	2	0	0	0
4:00	1	17	2	0	2	0	0	14	0	1	0	1	0	0	1	0	0	0	1	0	0	0	0	0
4:15	1	17	0	0	1	0	0	26	1	2	0	0	0	27	1	0	0	0	2	1	0	0	0	0
4:30	0	18	0	2	0	0	1	28	0	1	1	0	0	0	0	0	0	0	2	0	1	0	1	0
4:45	0	18	4	0	0	0	0	33	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0
5:00	1	20	0	1	0	0	1	53	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
5:15	1	9	0	2	0	0	1	30	0	1	1	0	0	0	0	0	0	0	1	0	0	0	0	0
5:30	0	21	0	0	1	0	0	37	1	0	0	0	0	0	1	1	0	0	0	0	2	0	0	0
5:45	0	12	0	0	0	0	0	26	0	1	0	0	0	0	1	0	0	1	1	0	0	0	0	0
6:00	1	19	0	1	0	0	2	23	0	1	0	1	0	0	1	0	0	0	0	0	0	0	0	0
6:15	1	12	0	0	0	0	1	16	2	0	0	0	0	0	1	0	0	0	4	1	0	0	1	0
6:30	0	20	0	0	0	0	1	23	1	0	0	0	0	0	0	0	0	0	2	0	4	0	0	0
3 hr total	6	192	6	6	4	1	8	329	6	8	2	2	0	27	8	1	0	1	15	2	11	0	2	0
		204		3%				343		2%				35		3%				28		0%		
peak hour	2	68	4				2	153	1				0	0	1				2	0	4			
		74						156						1						6				
6 hour	9	437	16				21	397	6				5	28	12				21	4	22			
total		462						424						45						47				
2 direct L	SB	462	52%				NB	424	48%				WB	45	70%				EB	47	42%			
total	NB	430	48%				SB	464	52%				EB	19	30%				WB	65	58%			
		892						888						64						112				

INTERSECTION TRAFFIC FLOW ANALYSIS REPORT

ME2 TRANSPORTATION DATA CORP.

Location Vista Trail & Duncan Avenue Date June 5, 2013 Observers james & virginia

time	FROM THE NORTH on Vista Trail						FROM THE SOUTH on Vista Trail						FROM THE EAST on Duncan Avenue						FROM THE WEST on Duncan Avenue					
ending	LT	ST	RT	CV	PED	BIKE	LT	ST	RT	CV	PED	BIKE	LT	ST	RT	CV	PED	BIKE	LT	ST	RT	CV	PED	BIKE
6:45	0	31	1	0	0	1	2	6	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0
7:00	0	28	0	1	0	1	0	5	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0
7:15	0	38	2	1	0	2	6	10	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30	0	44	2	1	0	1	5	11	0	2	0	2	0	0	0	0	0	0	1	0	3	2	0	1
7:45	0	75	6	1	0	2	5	7	0	0	0	0	0	0	0	0	0	0	1	0	2	2	0	0
8:00	0	57	6	1	0	0	16	14	0	2	0	1	0	0	0	0	0	0	2	0	1	0	1	0
8:15	0	36	2	1	0	0	19	6	0	0	0	1	0	0	0	0	0	0	1	0	2	2	0	0
8:30	0	24	1	1	0	1	2	9	0	4	0	0	0	0	0	0	0	0	0	0	5	1	0	0
8:45	0	25	1	3	0	1	4	4	0	2	0	0	0	0	0	0	0	0	0	0	4	1	0	0
9:00	0	21	1	1	0	1	3	11	0	2	0	0	0	0	0	0	0	0	0	0	4	3	0	0
9:15	0	11	0	3	0	0	0	13	0	3	0	0	0	0	0	0	0	0	1	0	0	0	0	0
9:30	0	15	0	2	0	0	9	10	0	3	0	0	0	0	0	0	0	0	0	0	4	2	0	0
3 hr total	0	405	22	16	0	10	71	106	0	21	0	4	0	0	0	0	0	0	6	0	27	14	1	1
		427		4%				177		12%				0		#DIV/0!				33		42%		
peak hour	0	212	16				45	38	0				0	0	0				5	0	8			
		228						83						0						13				
3:45	0	9	0	0	0	0	4	18	0	2	0	1	0	0	0	0	0	0	2	0	1	0	0	1
4:00	0	17	0	1	0	0	3	34	0	2	0	1	0	0	0	0	0	0	0	0	8	1	0	0
4:15	0	15	1	0	0	0	3	39	0	3	0	0	0	0	0	0	0	0	0	0	6	0	0	0
4:30	0	11	0	1	0	0	4	34	0	4	0	1	0	0	0	0	0	0	1	0	8	0	0	0
4:45	0	16	0	4	0	0	2	31	0	1	0	0	0	0	0	0	0	0	2	0	14	0	0	0
5:00	0	19	0	0	0	0	1	39	0	1	0	1	0	0	0	0	0	0	0	0	9	1	0	0
5:15	0	7	0	0	0	0	0	45	0	1	0	1	0	0	0	0	0	0	1	0	6	0	0	0
5:30	0	16	1	0	0	0	2	43	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0
5:45	0	14	0	1	0	0	0	47	0	1	0	2	0	0	0	0	0	0	1	0	3	0	0	0
6:00	0	25	0	0	1	0	0	30	0	2	0	0	0	0	0	0	0	0	0	0	3	0	0	1
6:15	0	17	0	0	0	0	0	27	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0
6:30	0	15	0	0	0	0	1	29	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0
3 hr total	0	181	2	7	1	0	20	416	0	17	0	8	0	0	0	0	0	0	7	0	65	2	0	2
		183		4%				436		4%				0		#DIV/0!				72		3%		
peak hour	#VALUE!	#VALUE!	#VALUE!				#VALUE!	#VALUE!	#VALUE!				#VALUE!	#VALUE!	#VALUE!				#VALUE!	#VALUE!	#VALUE!			
		#VALUE!						#VALUE!						#VALUE!						#VALUE!				
6 hour	0	586	24				91	522	0				0	0	0				13	0	92			
total		610						613						0						105				
2 direct L	SB	610	53%				NB	613	47%				WB	0	#DIV/0!				EB	105	48%			
total	NB	535	47%				SB	678	53%				EB	0	#DIV/0!				WB	115	52%			
		1145						1291						0						220				

INTERSECTION TRAFFIC FLOW ANALYSIS REPORT

ME2 TRANSPORTATION DATA CORP.

Location Vista Trail & South Street Date June 4,2013 Observers alex

time	FROM THE NORTH on Vista Trail						FROM THE SOUTH on Vista Trail						FROM THE EAST on South Street						FROM THE WEST on South Street					
ending	LT	ST	RT	CV	PED	BIKE	LT	ST	RT	CV	PED	BIKE	LT	ST	RT	CV	PED	BIKE	LT	ST	RT	CV	PED	BIKE
6:45	3	27	0	1	0	1	5	4	1	1	0	0	11	0	3	2	0	0	0	0	1	0	0	0
7:00	0	35	2	2	2	0	7	9	8	1	0	0	12	5	1	1	0	0	0	0	0	0	0	0
7:15	0	42	1	1	0	1	1	8	5	1	0	0	13	2	2	1	0	0	0	0	4	2	0	0
7:30	0	36	1	2	0	1	5	9	7	2	1	0	9	4	0	0	0	0	0	0	1	0	0	0
7:45	0	61	1	4	0	0	12	6	8	1	1	0	40	1	1	1	0	0	0	0	0	0	0	0
8:00	1	45	5	1	0	0	21	20	11	2	1	1	26	7	2	0	0	1	1	2	4	3	0	0
8:15	2	37	1	2	0	0	8	18	13	3	0	1	25	4	2	0	0	1	0	1	1	1	0	0
8:30	0	18	0	0	0	0	2	6	7	1	0	0	7	2	0	0	0	0	0	2	1	0	0	0
8:45	0	13	0	2	1	0	3	7	6	2	0	0	3	0	0	0	0	0	0	2	3	1	0	0
9:00	0	11	1	0	0	0	1	12	6	1	2	0	5	0	0	0	0	0	0	1	2	0	0	0
9:15	0	13	1	2	0	0	4	7	8	1	0	0	5	4	0	1	1	0	0	2	1	1	0	0
9:30	1	12	0	0	0	0	8	6	8	2	0	0	10	0	0	0	0	0	2	0	2	1	0	0
3 hr total	7	350	13	17	3	3	77	112	88	18	5	2	166	29	11	6	1	2	3	10	20	9	0	0
		370		5%				277		6%				206		3%				33		27%		
peak hour	3	179	8				46	53	39				100	16	5				1	3	6			
		190						138						121						10				
3:45	0	21	0	2	0	1	2	18	16	4	0	1	5	0	0	0	0	0	0	1	2	1	0	0
4:00	1	16	3	0	0	2	5	20	17	2	0	0	6	0	1	0	0	0	0	2	1	1	0	0
4:15	1	14	0	1	0	0	0	22	26	1	0	1	10	27	1	0	1	1	0	0	0	0	0	0
4:30	1	18	0	1	1	0	3	29	18	5	1	2	8	1	0	0	0	0	0	1	2	1	0	0
4:45	0	32	0	3	2	0	4	36	18	2	0	0	8	0	0	0	0	0	0	1	3	1	0	0
5:00	1	21	0	0	1	2	1	48	37	3	0	1	9	0	1	0	0	1	0	0	2	0	0	0
5:15	0	20	3	1	0	0	0	41	31	2	2	2	4	1	0	0	0	0	8	26	37	0	0	0
5:30	0	14	1	3	0	2	0	65	77	1	1	6	6	0	0	0	0	0	0	0	2	0	0	0
5:45	1	23	0	1	0	2	1	28	39	1	0	1	10	0	0	1	0	0	2	0	1	0	0	0
6:00	2	23	1	0	0	0	2	27	27	2	0	1	9	0	0	0	0	0	0	1	1	0	0	0
6:15	3	14	1	0	0	0	1	24	20	3	0	0	8	0	0	1	0	0	1	5	8	0	0	0
6:30	2	22	0	2	0	1	1	24	35	1	0	0	6	0	0	0	0	0	0	0	0	0	0	0
3 hr total	12	238	9	14	4	10	20	382	361	27	4	15	89	29	3	2	1	2	11	37	59	4	0	0
		259		5%				763		4%				121		2%				107		4%		
peak hour	2	78	4				2	182	184				29	1	1				10	26	42			
		84						368						31						78				
6 hour	19	588	22				97	494	449				255	58	14				14	47	79			
total		629						1040						327						140				
2 direct L	SB	629	55%				NB	1040	53%				WB	327	39%				EB	140	44%			
total	NB	522	45%				SB	922	47%				EB	515	61%				WB	177	56%			
		1151						1962						842						317				

INTERSECTION TRAFFIC FLOW ANALYSIS REPORT

ME2 TRANSPORTATION DATA CORP.

Location Highway Avenue & Greeg Street Date June 4,2013 Observers Teresa

time	FROM THE NORTH on Highway Avenue						FROM THE SOUTH on Highway Avenue						FROM THE EAST on Gregg Street						FROM THE WEST on Gregg Street					
ending	LT	ST	RT	CV	PED	BIKE	LT	ST	RT	CV	PED	BIKE	LT	ST	RT	CV	PED	BIKE	LT	ST	RT	CV	PED	BIKE
6:45	2	1	0	0	0	0	0	0	0	0	0	0	1	6	0	0	0	0	0	26	0	0	0	0
7:00	0	1	0	0	0	0	0	1	0	0	0	0	0	13	0	0	0	0	1	31	1	0	1	2
7:15	0	0	0	0	0	0	0	1	0	0	0	0	3	24	0	1	1	1	0	22	1	0	0	1
7:30	0	0	0	0	0	0	0	1	0	0	0	0	0	12	0	0	3	2	0	36	0	0	0	0
7:45	0	0	0	0	0	0	0	2	0	0	0	0	2	40	0	0	3	2	0	26	0	0	1	1
8:00	0	0	0	0	0	0	0	0	0	0	0	0	2	38	0	0	5	6	2	41	2	0	2	1
8:15	1	0	0	0	0	0	0	2	0	0	0	0	3	37	0	0	1	0	0	43	0	1	4	0
8:30	0	0	0	0	0	0	0	1	0	0	0	0	0	26	0	0	0	1	0	46	0	0	0	0
8:45	0	0	0	0	0	0	0	0	0	0	0	0	1	19	0	0	0	0	0	15	0	0	0	0
9:00	0	0	0	0	0	0	1	2	2	0	0	0	8	30	0	0	1	1	0	25	0	1	1	0
9:15	1	1	0	0	0	0	0	3	1	0	0	0	2	17	0	1	1	0	0	26	0	0	0	0
9:30	0	0	0	0	0	0	0	0	0	0	0	0	1	16	0	0	0	0	0	24	0	0	0	0
3 hr total	4	3	0	0	0	0	1	13	3	0	0	0	23	278	0	2	15	13	3	361	4	2	9	5
		7		0%				17		0%				301		1%				368		1%		
peak hour	1	0	0				0	5	0				7	141	0				2	156	2			
		1						5						148						160				
3:45	0	1	2	0	0	0	0	4	3	0	0	1	3	27	0	0	7	0	0	32	1	0	0	3
4:00	2	5	0	0	2	0	0	2	1	0	0	0	2	27	0	0	4	0	0	35	0	0	2	0
4:15	0	0	0	0	0	0	0	0	0	0	0	0	1	27	0	0	4	2	0	36	1	1	6	0
4:30	0	0	0	0	0	0	2	4	2	0	0	0	0	46	1	0	3	0	0	37	0	1	15	1
4:45	0	0	0	0	0	0	0	0	1	0	0	0	6	44	0	0	4	0	0	50	0	0	7	2
5:00	0	0	0	0	0	0	0	2	1	0	1	0	2	37	0	0	8	6	0	50	1	0	1	0
5:15	0	0	0	0	0	0	1	4	4	0	0	0	3	52	0	0	3	6	1	47	4	0	0	0
5:30	0	0	0	0	0	0	3	0	2	0	0	0	7	66	0	2	5	0	0	58	1	0	0	1
5:45	0	0	0	0	0	0	1	1	4	0	0	0	2	35	0	0	1	6	0	55	0	2	0	2
6:00	0	0	0	0	0	0	1	3	3	0	0	0	1	34	1	0	2	1	0	35	2	0	5	3
6:15	0	0	0	0	0	0	0	3	3	0	0	0	0	45	0	0	5	0	1	36	2	1	1	1
6:30	0	0	0	0	0	0	0	0	0	0	0	0	2	37	1	0	6	1	0	42	0	0	0	1
3 hr total	2	6	2	0	2	0	8	23	24	0	1	1	29	477	3	2	52	22	2	513	12	5	37	14
		10		0%				55		0%				509		0%				527		1%		
peak hour	0	0	0				4	6	8				18	199	0				1	205	6			
		0						18						217						212				
6 hour	6	9	2				9	36	27				52	755	3				5	874	16			
total		17						72						810						895				
2 direct L	SB	17	28%				NB	72	48%				WB	810	47%				EB	895	54%			
total	NB	44	72%				SB	77	52%				EB	907	53%				WB	766	46%			
		61						149						1717						1661				

INTERSECTION TRAFFIC FLOW ANALYSIS REPORT

ME2 TRANSPORTATION DATA CORP.

Location Park Street & Highway Avenue Date June 3, 2013 Observers Dana

time	FROM THE NORTH on Highway Avenue						FROM THE SOUTH on Highway Avenue						FROM THE EAST on Park Street						FROM THE WEST on Park Street					
ending	LT	ST	RT	CV	PED	BIKE	LT	ST	RT	CV	PED	BIKE	LT	ST	RT	CV	PED	BIKE	LT	ST	RT	CV	PED	BIKE
6:45	0	0	0	0	0	0	0	0	0	0	1	0	4	6	1	1	0	0	0	7	0	0	0	0
7:00	1	0	0	0	0	0	0	0	0	0	0	0	1	4	0	0	0	0	0	10	0	0	0	0
7:15	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	8	0	1	0	0
7:30	2	0	3	0	0	0	0	0	1	0	0	0	0	5	0	0	0	0	0	27	2	1	0	0
7:45	2	1	3	0	0	0	1	1	0	0	0	0	1	12	1	1	0	0	0	32	1	0	0	0
8:00	1	0	0	0	0	0	0	0	2	0	0	0	0	10	1	0	0	0	1	10	0	1	0	0
8:15	1	0	1	0	0	0	0	0	1	0	0	0	0	13	0	1	0	0	0	22	0	1	0	0
8:30	4	1	0	0	0	0	0	1	2	0	0	0	1	6	1	0	1	0	0	16	0	0	0	0
8:45	2	0	1	0	0	0	0	2	1	1	0	0	2	5	1	0	0	0	0	5	0	0	0	0
9:00	1	0	0	0	0	0	0	0	0	0	0	0	0	7	0	0	0	0	1	4	0	0	0	0
9:15	4	0	1	0	0	0	0	0	0	0	0	0	1	4	0	1	0	0	0	5	0	1	0	0
9:30	2	0	0	0	0	0	0	0	0	0	0	0	0	5	0	0	0	0	0	4	0	0	0	0
3 hr total	20	2	9	0	0	0	1	4	7	1	1	0	10	80	5	4	1	0	2	150	3	5	0	0
		31		0%				12		8%				95		4%				155		3%		
peak hour	6	1	7				1	1	4				1	40	2				1	91	3			
		14						6						43						95				
3:45	3	0	0	0	0	0	0	1	0	0	0	0	4	14	3	1	0	0	0	16	0	0	0	0
4:00	3	0	0	0	0	0	0	0	2	0	0	0	0	17	2	0	0	0	0	18	1	0	0	0
4:15	0	0	0	0	0	0	0	0	1	0	0	0	2	27	1	0	0	0	0	10	0	0	0	0
4:30	3	1	2	0	0	0	0	0	0	0	0	0	0	11	3	0	0	0	0	16	0	0	0	0
4:45	5	4	2	0	0	0	0	0	2	0	0	0	1	10	2	0	0	0	1	28	0	0	0	0
5:00	5	2	1	0	0	0	0	0	2	0	0	0	0	7	2	0	0	0	2	17	0	0	0	0
5:15	4	0	1	0	0	0	1	1	4	0	0	0	3	17	3	0	0	0	0	37	0	1	0	0
5:30	2	0	3	0	0	0	0	0	0	0	0	0	0	26	2	1	0	0	0	28	0	1	0	0
5:45	4	1	4	1	0	0	0	0	0	0	0	0	1	17	1	0	0	0	1	22	0	1	0	0
6:00	0	1	1	0	0	0	2	0	1	0	0	0	1	16	4	1	0	0	0	19	1	0	0	0
6:15	0	0	0	0	0	0	0	1	1	0	0	0	2	10	2	0	0	0	0	17	0	1	0	0
6:30	0	0	2	0	0	0	1	1	2	0	0	0	4	13	0	3	0	0	2	6	0	0	0	0
3 hr total	29	9	16	1	0	0	4	4	15	0	0	0	18	185	25	6	0	0	6	234	2	4	0	0
		54		2%				23		0%				228		3%				242		2%		
peak hour	10	2	9				3	1	5				5	76	10				1	106	1			
		21						9						91						108				
6 hour	49	11	25				5	8	22				28	265	30				8	384	5			
total		85						35						323						397				
2 direct L	SB	85	65%				NB	35	44%				WB	323	42%				EB	397	57%			
total	NB	46	35%				SB	44	56%				EB	455	58%				WB	295	43%			
		131						79						778						692				

INTERSECTION TRAFFIC FLOW ANALYSIS REPORT

ME2 TRANSPORTATION DATA CORP.

Location Parkwood Road & Cottonwood Drive Date June 4,2013 Observers Buck

time ending	FROM THE NORTH on Parkwood Road						FROM THE SOUTH on Parkwood Road						FROM THE EAST on Cottonwood Drive						FROM THE WEST on Cottonwood Drive					
	LT	ST	RT	CV	PED	BIKE	LT	ST	RT	CV	PED	BIKE	LT	ST	RT	CV	PED	BIKE	LT	ST	RT	CV	PED	BIKE
6:45	2	4	11	1	0	0	4	6	2	1	0	0	4	9	2	0	0	1	4	2	2	0	0	0
7:00	2	3	12	1	0	0	2	9	3	1	0	0	9	6	3	2	0	0	6	2	4	2	0	0
7:15	1	4	8	1	0	0	4	3	5	0	0	0	2	15	0	0	0	0	6	9	0	3	0	0
7:30	0	2	9	1	0	0	4	2	6	1	0	0	6	17	0	2	0	0	6	2	3	1	0	0
7:45	0	4	12	1	0	0	4	4	4	2	0	0	3	24	3	4	0	1	5	7	3	4	0	0
8:00	1	4	13	6	0	0	8	8	5	2	0	0	2	16	2	1	0	1	8	7	5	1	0	0
8:15	0	4	10	1	0	0	8	3	5	1	0	0	5	16	3	0	0	0	8	9	2	5	0	0
8:30	0	4	6	2	0	0	8	8	5	3	0	0	3	21	1	3	0	0	4	12	4	4	0	0
8:45	0	2	3	1	0	0	6	4	4	0	0	0	3	11	1	1	0	0	6	8	6	1	0	0
9:00	0	2	4	0	0	0	6	2	8	0	0	0	2	5	1	0	0	0	1	4	1	2	0	0
9:15	0	1	4	0	0	0	2	1	2	1	0	0	7	10	0	2	0	0	1	6	1	1	0	0
9:30	0	3	6	0	0	0	6	2	4	1	0	0	2	8	0	1	1	0	3	6	0	1	0	0
3 hr total	6	37	98	15	0	0	62	52	53	13	0	0	48	158	16	16	1	3	58	74	31	25	0	0
		141		11%				167		8%				222		7%				163		15%		
peak hour	1	16	41				28	23	19				13	77	9				25	35	14			
		58						70						99						74				
3:45	1	0	3	0	0	0	4	8	3	1	0	0	2	10	1	1	0	0	7	5	8	4	0	0
4:00	0	3	11	3	0	0	3	4	8	1	0	0	5	13	1	1	0	0	8	5	1	2	0	0
4:15	3	5	7	0	0	0	4	7	7	0	0	0	2	27	2	0	0	0	5	15	3	2	0	0
4:30	2	1	5	0	0	0	1	7	7	0	0	0	0	11	0	2	0	0	5	7	2	0	0	0
4:45	3	5	11	0	0	0	6	14	5	2	0	0	3	11	1	0	0	0	6	12	5	2	0	0
5:00	2	5	7	0	0	0	4	13	6	2	0	0	5	6	0	0	0	0	9	11	1	2	0	0
5:15	0	5	13	0	0	0	2	7	11	0	0	0	1	11	1	1	0	0	11	16	2	2	0	0
5:30	2	3	6	0	0	0	4	11	5	0	0	0	6	16	2	2	0	0	10	13	4	1	0	0
5:45	2	5	6	0	0	0	2	9	8	0	0	0	5	4	1	0	0	0	11	19	2	0	0	0
6:00	3	2	8	1	0	0	4	5	8	0	0	0	2	12	1	0	0	0	4	11	3	0	0	0
6:15	1	3	10	0	0	0	1	8	5	0	0	0	1	10	1	1	0	0	8	19	2	2	0	0
6:30	1	3	5	0	0	0	4	6	7	0	0	0	1	14	0	2	0	0	11	8	2	0	0	0
3 hr total	20	40	92	4	0	0	39	99	80	6	0	0	33	145	11	10	0	0	95	141	35	17	0	0
		152		3%				218		3%				189		5%				271		6%		
peak hour	7	18	37				16	45	27				15	44	4				36	52	12			
		62						88						63						100				
6 hour total	26	77	190				101	151	133				81	303	27				153	215	66			
		293						385						411						434				
2 direct L	SB	293	47%				NB	385	63%				WB	411	52%				EB	434	42%			
total	NB	331	53%				SB	224	37%				EB	374	48%				WB	594	58%			
		624						609						785						1028				

INTERSECTION TRAFFIC FLOW ANALYSIS REPORT

ME2 TRANSPORTATION DATA CORP.

Location Parkwood Road & Panorama Drive Date June 4,2013 Observers Dana

time	FROM THE NORTH on Parkwood Road						FROM THE SOUTH on Parkwood Road						FROM THE EAST on Panorama Drive						FROM THE WEST on Panorama Drive					
ending	LT	ST	RT	CV	PED	BIKE	LT	ST	RT	CV	PED	BIKE	LT	ST	RT	CV	PED	BIKE	LT	ST	RT	CV	PED	BIKE
6:45	1	7	33	3	0	0	3	5	1	1	0	0	1	23	18	2	0	0	20	4	3	1	0	0
7:00	3	6	34	0	0	0	3	11	2	1	0	0	2	18	12	0	0	0	36	10	3	2	0	0
7:15	2	10	33	3	0	0	1	4	0	0	0	0	6	23	9	1	0	0	23	8	3	4	0	0
7:30	3	6	35	2	0	0	3	8	1	3	0	0	3	40	18	1	0	0	38	7	7	4	0	0
7:45	4	4	33	1	0	0	3	6	1	1	0	0	3	71	16	5	0	0	25	9	2	5	0	0
8:00	2	5	36	3	0	0	3	12	2	2	0	0	0	50	10	2	0	1	37	10	6	1	0	0
8:15	2	3	31	1	0	0	4	7	3	0	0	0	3	55	14	2	0	0	34	18	5	8	0	0
8:30	5	6	30	6	0	0	4	6	3	2	0	1	4	29	8	3	0	0	37	17	8	1	0	0
8:45	4	6	27	3	0	0	2	12	1	1	0	0	3	27	7	2	0	0	23	11	6	2	0	0
9:00	2	7	23	3	0	0	4	9	4	1	0	0	5	25	3	1	0	0	22	8	1	1	0	0
9:15	1	7	16	3	0	0	6	3	3	0	0	0	3	16	4	4	0	0	25	17	3	4	0	0
9:30	1	4	20	0	0	0	4	2	2	2	0	0	3	22	2	1	0	0	18	11	9	3	0	0
3 hr total	30	71	351	28	0	0	40	85	23	14	0	1	36	399	121	24	0	1	338	130	56	36	0	0
		452		6%				148		9%				556		4%				524		7%		
peak hour	11	18	135				13	33	7				9	216	58				134	44	20			
		164						53						283						198				
3:45	3	8	23	1	0	0	6	9	6	1	0	0	5	20	7	3	0	0	26	26	8	2	0	0
4:00	6	5	17	1	0	0	4	9	4	0	1	0	2	32	3	6	0	0	27	42	11	1	0	0
4:15	8	14	26	0	0	0	8	11	12	1	0	0	5	27	9	3	0	0	28	26	8	1	0	0
4:30	6	7	29	2	0	0	9	11	3	0	0	0	2	32	3	3	0	0	31	37	9	2	0	0
4:45	2	11	33	0	0	0	10	14	5	0	0	0	2	22	4	2	0	0	26	50	10	6	0	0
5:00	7	11	31	2	0	0	8	13	8	0	0	0	4	26	5	0	0	0	34	29	9	3	0	0
5:15	5	7	24	0	0	0	14	15	7	1	0	0	1	28	12	1	0	1	27	39	15	3	0	0
5:30	5	10	34	0	0	0	10	11	11	1	0	0	4	42	6	3	0	0	42	58	7	0	0	0
5:45	16	9	31	0	0	0	9	11	7	1	0	0	3	34	7	2	0	0	37	52	9	1	0	0
6:00	3	8	23	1	0	0	8	15	11	1	0	0	7	33	10	2	0	0	30	24	7	2	0	0
6:15	4	9	31	0	0	0	9	10	5	0	0	0	1	33	9	1	1	0	21	30	11	1	0	0
6:30	13	7	22	1	0	0	7	15	9	2	0	0	1	28	9	2	0	0	25	32	9	1	0	0
3 hr total	78	106	324	8	0	0	102	144	88	8	1	0	37	357	84	28	1	1	354	445	113	23	0	0
		508		2%				334		2%				478		6%				912		3%		
peak hour	33	37	120				41	50	33				12	130	30				140	178	40			
		190						124						172						358				
6 hour	108	177	675				142	229	111				73	756	205				692	575	169			
total		960						482						1034						1436				
2 direct L	SB	960	46%				NB	482	53%				WB	1034	57%				EB	1436	48%			
total	NB	1126	54%				SB	419	47%				EB	794	43%				WB	1573	52%			
		2086						901						1828						3009				

INTERSECTION TRAFFIC FLOW ANALYSIS REPORT

ME2 TRANSPORTATION DATA CORP.

Location Park Street & Parkwood Road Date June 3, 2013 Observers Teresa

time	FROM THE NORTH on Parkwood Road						FROM THE SOUTH on Parkwood Road						FROM THE EAST on Park Street						FROM THE WEST on Park Street					
ending	LT	ST	RT	CV	PED	BIKE	LT	ST	RT	CV	PED	BIKE	LT	ST	RT	CV	PED	BIKE	LT	ST	RT	CV	PED	BIKE
6:45	0	0	3	0	0	0	0	0	0	0	0	0	0	43	0	0	0	0	0	0	0	0	0	0
7:00	1	0	3	0	0	0	0	0	0	0	0	0	0	54	3	0	0	1	2	3	0	0	0	0
7:15	2	0	6	0	0	0	0	0	0	0	0	0	0	30	2	0	0	0	5	5	0	0	0	0
7:30	0	0	13	1	0	0	0	0	0	0	0	0	0	41	5	0	0	0	14	4	0	0	0	0
7:45	0	0	12	0	2	0	0	0	0	0	0	0	0	73	10	0	2	0	8	9	0	1	1	0
8:00	0	0	21	0	0	0	0	0	0	0	0	0	0	42	8	0	0	0	12	12	0	1	0	0
8:15	0	0	16	0	0	0	0	0	0	0	0	0	0	50	5	2	2	0	12	17	0	2	0	0
8:30	3	0	10	1	0	0	0	0	0	0	0	0	0	18	5	0	1	0	18	19	0	2	0	0
8:45	2	0	18	1	0	0	0	0	0	0	0	0	0	20	3	0	0	0	17	10	0	1	0	0
9:00	2	0	5	0	1	0	0	0	0	0	0	0	0	10	6	0	0	0	10	15	0	1	1	0
9:15	2	0	11	0	0	0	0	0	0	0	0	0	0	20	1	1	0	0	10	9	0	2	0	0
9:30	3	0	3	0	0	0	0	0	0	0	0	0	0	9	1	0	0	0	7	9	0	0	0	0
3 hr total	15	0	121	3	3	0	0	0	0	0	0	0	0	410	49	3	5	1	115	112	0	10	2	0
		136		2%				0		#DIV/0!				459		1%				227		4%		
peak hour	0	0	62				0	0	0				0	206	28				46	42	0			
		62						0						234						88				
3:45	5	0	6	0	0	0	0	0	0	0	0	0	0	11	3	0	2	0	13	18	0	2	0	0
4:00	5	0	13	0	0	1	0	0	0	0	0	0	0	9	1	0	4	1	21	24	0	0	1	0
4:15	6	0	11	0	2	0	0	0	0	0	0	0	0	27	6	0	2	1	18	32	0	1	0	1
4:30	5	0	11	1	0	0	0	0	0	0	0	0	0	17	3	0	0	0	23	32	0	1	0	0
4:45	0	0	11	1	0	0	0	0	0	0	0	0	0	20	2	0	1	1	22	40	0	1	2	1
5:00	6	0	13	2	0	0	0	0	0	0	0	0	0	18	3	0	0	0	30	52	0	0	0	1
5:15	9	0	14	0	0	0	0	0	0	0	0	0	0	14	3	0	0	0	29	53	0	3	0	0
5:30	9	0	15	0	1	1	0	0	0	0	0	0	0	42	2	1	0	1	19	44	0	0	0	0
5:45	8	0	14	0	1	0	0	0	0	0	0	0	0	21	1	0	1	0	23	49	0	0	1	2
6:00	2	0	20	0	0	0	0	0	0	0	0	0	0	28	2	0	3	0	27	36	0	1	0	1
6:15	1	0	17	0	0	0	0	0	0	0	0	0	0	22	1	0	1	2	16	30	0	1	0	1
6:30	3	0	10	0	0	0	0	0	0	0	0	0	0	20	1	0	5	1	15	26	0	0	6	2
3 hr total	59	0	155	4	4	2	0	0	0	0	0	0	0	249	28	1	19	7	256	436	0	10	10	9
		214		2%				0		#DIV/0!				277		0%				692		1%		
peak hour	32	0	56				0	0	0				0	95	9				101	198	0			
		88						0						104						299				
6 hour	74	0	276				0	0	0				0	659	77				371	548	0			
total		350						0						736						919				
2 direct L	SB	350	44%				NB	0	#DIV/0!				WB	736	54%				EB	919	50%			
total	NB	448	56%				SB	0	#DIV/0!				EB	622	46%				WB	935	50%			
		798						0						1358						1854				

INTERSECTION TRAFFIC FLOW ANALYSIS REPORT

ME2 TRANSPORTATION DATA CORP.

Location East Railway Street & South Street Date June 5, 2013 Observers buck

time ending	FROM THE NORTH on East Railway Street						FROM THE SOUTH on East Railway Street						FROM THE EAST on South Street						FROM THE WEST on South Street					
	LT	ST	RT	CV	PED	BIKE	LT	ST	RT	CV	PED	BIKE	LT	ST	RT	CV	PED	BIKE	LT	ST	RT	CV	PED	BIKE
6:45	0	0	14	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	4	1	0	0	0	0
7:00	0	0	9	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	7	1	0	0	0	0
7:15	0	0	4	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	2	0	0	0	0	0
7:30	0	0	18	2	0	0	0	0	0	0	0	0	0	2	0	0	0	0	3	0	0	0	0	0
7:45	0	0	37	4	0	0	0	0	0	0	0	0	0	3	0	0	0	0	10	1	0	1	0	0
8:00	1	0	46	3	0	0	0	0	0	0	0	0	0	2	1	1	0	0	23	1	0	3	0	0
8:15	0	0	25	1	0	0	0	0	0	0	0	0	0	3	1	0	0	0	32	3	0	2	0	0
8:30	0	0	14	2	0	0	0	0	0	0	0	0	0	1	1	0	0	0	14	0	0	0	0	0
8:45	0	0	7	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0
9:00	0	0	5	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	9	4	0	2	0	0
9:15	0	0	7	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	1	0	0	0	0
9:30	0	0	6	2	0	0	0	0	0	0	0	0	0	1	0	0	0	0	10	0	0	3	0	0
3 hr total	1	0	192	17	0	0	0	0	0	0	0	0	0	14	5	1	0	0	119	12	0	11	0	0
		193		9%				0		#DIV/0!				19		5%				131		8%		
peak hour	1	0	122				0	0	0				0	9	3				79	5	0			
		123						0						12						84				
3:45	1	0	12	2	0	0	0	0	0	0	0	0	0	1	0	0	0	0	17	2	0	3	0	0
4:00	1	0	7	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	21	0	0	1	0	0
4:15	0	0	8	2	0	0	0	0	0	0	0	0	0	27	0	0	0	0	15	1	0	2	0	0
4:30	0	0	10	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	29	2	0	2	0	0
4:45	2	0	18	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	26	0	0	0	0	0
5:00	0	0	15	3	0	0	0	0	0	0	0	0	0	1	0	0	0	0	46	1	0	2	0	0
5:15	0	0	14	2	0	0	0	0	0	0	0	0	0	0	1	0	0	0	56	1	0	0	0	0
5:30	0	0	31	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	52	3	0	3	0	0
5:45	0	0	21	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	44	1	0	0	0	0
6:00	0	0	13	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	37	1	0	1	0	0
6:15	0	0	11	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	22	3	0	2	0	0
6:30	1	0	18	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	47	5	0	0	0	0
3 hr total	5	0	178	16	0	0	0	0	0	0	0	0	0	35	2	0	0	0	412	20	0	16	0	0
		183		9%				0		#DIV/0!				37		0%				432		4%		
peak hour	0	0	81				0	0	0				0	1	1				198	6	0			
		81						0						2						204				
6 hour total	6	0	370				0	0	0				0	49	7				531	32	0			
		376						0						56						563				
2 direct L	SB	376	41%				NB	0	#DIV/0!				WB	56	60%				EB	563	57%			
total	NB	538	59%				SB	0	#DIV/0!				EB	38	40%				WB	419	43%			
		914						0						94						982				

INTERSECTION TRAFFIC FLOW ANALYSIS REPORT

ME2 TRANSPORTATION DATA CORP.

Location Highway 597 & Industrial Way Date June 3, 2013 Observers Virgina & James

time	FROM THE NORTH on Industrial Way						FROM THE SOUTH on Industrial Way						FROM THE EAST on Highway 597						FROM THE WEST on Highway 597					
ending	LT	ST	RT	CV	PED	BIKE	LT	ST	RT	CV	PED	BIKE	LT	ST	RT	CV	PED	BIKE	LT	ST	RT	CV	PED	BIKE
6:45	0	0	6	0	0	0	3	1	0	1	0	0	0	11	0	0	0	0	65	43	23	0	0	0
7:00	0	0	4	0	0	0	3	0	0	0	0	0	0	9	0	1	0	0	70	56	38	3	0	1
7:15	0	0	2	0	1	0	0	0	1	0	0	0	1	20	0	1	0	0	10	43	14	3	0	0
7:30	1	0	1	0	0	0	3	0	0	2	0	0	0	27	0	3	0	1	5	31	17	2	0	0
7:45	0	0	4	1	0	0	4	0	0	1	0	0	3	34	2	7	0	0	6	28	34	5	0	0
8:00	0	0	1	0	0	0	6	0	0	1	0	0	2	28	3	2	0	0	4	25	53	2	0	0
8:15	0	0	1	0	0	0	5	0	1	4	0	0	0	23	0	3	0	0	2	15	34	4	0	1
8:30	0	0	2	0	0	0	1	0	0	0	0	0	1	16	1	3	0	0	4	10	22	4	0	0
8:45	0	0	2	1	0	0	9	0	3	2	0	0	4	14	0	6	0	0	5	11	17	4	0	0
9:00	3	0	1	0	0	0	7	0	2	2	0	0	0	14	1	1	0	0	1	14	20	3	0	0
9:15	0	0	1	0	0	0	17	0	0	5	0	0	0	13	0	2	0	0	4	17	15	4	0	0
9:30	1	0	2	0	0	0	9	0	0	3	0	0	0	11	0	1	0	0	4	14	15	10	0	0
3 hr total	5	0	27	2	1	0	67	1	7	21	0	0	11	220	7	30	0	1	180	307	302	44	0	2
		32		6%				75		28%				238		13%				789		6%		
peak hour	1	0	13				9	1	1				1	67	0				150	173	92			
		14						11						68						415				
3:45	0	0	1	0	0	0	19	0	2	0	0	0	1	27	0	2	0	1	1	17	17	7	0	0
4:00	0	0	5	0	0	0	13	0	1	5	0	0	0	13	0	2	0	0	2	24	10	2	0	0
4:15	0	0	5	0	0	0	32	0	1	2	0	0	0	27	0	5	0	0	4	27	7	7	0	0
4:30	0	1	4	1	0	0	20	0	3	2	0	0	0	23	0	1	0	0	3	28	4	8	0	0
4:45	0	0	15	1	0	0	65	0	3	1	0	0	0	28	0	7	0	0	2	16	6	2	0	0
5:00	0	0	90	17	0	1	27	0	0	0	0	0	0	41	0	7	0	1	7	30	3	1	0	0
5:15	2	1	97	5	0	0	37	0	3	1	0	0	0	32	0	4	0	0	4	30	5	1	0	0
5:30	1	0	51	5	0	0	14	0	2	2	0	0	0	27	0	2	0	0	1	21	5	1	0	0
5:45	2	0	144	1	0	1	24	1	1	3	0	0	3	25	0	3	0	0	6	29	4	3	1	0
6:00	0	0	9	1	0	0	7	0	1	1	0	0	0	24	0	1	0	0	3	26	6	5	0	1
6:15	1	0	1	0	0	0	5	0	1	0	0	0	0	45	0	4	1	2	1	11	0	0	2	0
6:30	0	0	1	0	0	0	1	0	1	0	0	0	1	49	0	3	0	0	0	7	0	0	0	1
3 hr total	6	2	423	31	0	2	264	1	19	17	0	0	5	361	0	41	1	4	34	266	67	37	3	2
		431		7%				284		6%				366		11%				367		10%		
peak hour	5	1	382				102	1	6				3	125	0				18	110	17			
		388						109						128						145				
6 hour	11	2	450				331	2	26				16	581	7				214	573	369			
total		463						359						604						1156				
2 direct L	SB	463	67%				NB	359	48%				WB	604	50%				EB	1156	46%			
total	NB	223	33%				SB	387	52%				EB	610	50%				WB	1362	54%			
		686						746						1214						2518				

Appendix C ME2 Transportation Data – 24-Hour ATR Counts

ME2 Transportation Data Corp.
Vehicle Counts

VehicleCount-632 -- English (ENU)

Datasets:
Site: **Parkwood Road - North of Panorama Drive**

Profile:
Filter time: **14:21 Monday, June 03, 2013 => 14:37 Tuesday, June 04, 2013**
Direction: North (bound)

*** Monday, June 03, 2013 - Total=1052 (Incomplete) , 15 minute drops**

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
–	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**145**	**206**	**223**	**169**	**118**	**112**	**47**	**23**	**9**	
–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	35	44	62	52	28	37	16	6	3	1
–	–	–	–	–	–	–	–	–	–	–	–	–	–	26	29	46	64	41	29	25	10	9	4	3
–	–	–	–	–	–	–	–	–	–	–	–	–	–	41	38	52	38	41	30	29	16	4	1	1
–	–	–	–	–	–	–	–	–	–	–	–	–	–	46	43	64	59	35	31	21	5	4	1	1

*** Tuesday, June 04, 2013 - Total=1536 (Incomplete) , 15 minute drops**

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
6	**9**	**4**	**3**	**19**	**63**	**168**	**202**	**178**	**146**	**130**	**148**	**238**	**148**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	
1	3	0	1	4	5	27	35	52	33	33	24	**99**	38	24	–	–	–	–	–	–	–	–	–	–
3	4	2	1	3	10	39	63	51	21	29	35	**50**	32	32	–	–	–	–	–	–	–	–	–	–
1	1	2	0	5	21	42	44	39	42	32	**42**	42	40	18	–	–	–	–	–	–	–	–	–	–
1	1	0	1	7	27	60	60	36	50	36	**47**	47	38	–	–	–	–	–	–	–	–	–	–	–

AM Peak 1130 - 1230 (238), AM PHF=0.60

ME2 Transportation Data Corp.
Vehicle Counts

VehicleCount-633 -- English (ENU)

Datasets:
Site: **Parkwood Road - North of Panorama Drive**

Profile:
Filter time: **14:21 Monday, June 03, 2013 => 14:37 Tuesday, June 04, 2013**
Direction: South (bound)

*** Monday, June 03, 2013 - Total=917 (Incomplete) , 15 minute drops**

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
–	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**136**	**172**	**190**	**132**	**100**	**107**	**49**	**21**	**10**	
–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	36	38	50	38	32	35	13	5	3	2
–	–	–	–	–	–	–	–	–	–	–	–	–	–	20	33	40	40	40	23	22	13	8	3	1
–	–	–	–	–	–	–	–	–	–	–	–	–	–	28	29	44	49	32	25	20	14	1	1	2
–	–	–	–	–	–	–	–	–	–	–	–	–	–	29	38	50	51	22	20	30	9	7	3	0

*** Tuesday, June 04, 2013 - Total=1362 (Incomplete) , 15 minute drops**

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
5	**9**	**4**	**2**	**12**	**58**	**155**	**170**	**152**	**117**	**129**	**132**	**199**	**153**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	
2	3	1	0	3	6	35	42	41	23	34	25	**63**	41	27	–	–	–	–	–	–	–	–	–	–
1	3	0	2	1	8	35	45	38	23	40	27	**55**	39	28	–	–	–	–	–	–	–	–	–	–
2	1	2	0	5	23	41	41	40	37	23	39	**45**	41	10	–	–	–	–	–	–	–	–	–	–
0	2	1	0	3	21	44	42	33	34	32	**41**	36	32	–	–	–	–	–	–	–	–	–	–	–

AM Peak 1145 - 1245 (204), AM PHF=0.81

ME2 Transportation Data Corp.
Vehicle Counts

VehicleCount-637 -- English (ENU)

Datasets:
Site: **Parkwood Road - North of Park Street**

Profile:
Filter time: **14:52 Tuesday, June 04, 2013 => 15:12 Wednesday, June 05, 2013**
Direction: North (bound)

*** Tuesday, June 04, 2013 - Total=681 (Incomplete) , 15 minute drops**

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
–	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**104**	**126**	**157**	**95**	**76**	**57**	**43**	**16**	**7**	
–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	40	30	47	37	16	17	15	3	2	1
–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	21	33	39	18	15	13	10	5	3	1
–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	25	27	38	17	23	20	8	5	1	0
–	–	–	–	–	–	–	–	–	–	–	–	–	–	12	18	36	33	23	22	7	10	3	1	0

*** Wednesday, June 05, 2013 - Total=807 (Incomplete) , 15 minute drops**

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
2	**3**	**1**	**3**	**4**	**22**	**54**	**72**	**63**	**67**	**57**	**104**	**153**	**91**	**87**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	
1	1	1	1	0	4	14	14	13	14	14	16	**69**	20	16	24	–	–	–	–	–	–	–	–	–
1	0	0	1	0	3	7	21	14	19	17	19	**39**	28	26	–	–	–	–	–	–	–	–	–	–
0	0	0	0	3	8	17	19	23	15	11	**30**	22	18	20	–	–	–	–	–	–	–	–	–	–
0	2	0	1	1	7	16	18	13	19	15	**39**	23	25	25	–	–	–	–	–	–	–	–	–	–

AM Peak 1130 - 1230 (177), AM PHF=0.64

ME2 Transportation Data Corp.
Vehicle Counts

VehicleCount-636 -- English (ENU)

Datasets:
Site: **Parkwood Road - North of Park Street**

Profile:
Filter time: **14:52 Tuesday, June 04, 2013 => 15:12 Wednesday, June 05, 2013**
Direction: South (bound)

*** Tuesday, June 04, 2013 - Total=505 (Incomplete) , 15 minute drops**

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
–	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**68**	**78**	**98**	**86**	**53**	**49**	**43**	**23**	**7**	
–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	23	17	33	32	12	11	11	9	2	2
–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	16	22	20	22	11	15	9	6	3	0
–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	17	26	28	20	18	12	12	1	1	0
–	–	–	–	–	–	–	–	–	–	–	–	–	–	8	12	13	17	12	12	11	11	7	1	0

*** Wednesday, June 05, 2013 - Total=647 (Incomplete) , 15 minute drops**

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
2	**2**	**0**	**0**	**1**	**21**	**45**	**75**	**39**	**39**	**57**	**62**	**129**	**88**	**69**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	
2	1	0	0	0	3	13	15	8	12	9	10	**34**	35	20	18	–	–	–	–	–	–	–	–	–
0	1	0	0	0	4	11	18	11	7	13	13	**39**	20	12	–	–	–	–	–	–	–	–	–	–
0	0	0	0	1	4	14	21	7	8	16	17	**26**	17	16	–	–	–	–	–	–	–	–	–	–
0	0	0	0	0	10	7	21	13	12	19	**22**	30	16	21	–	–	–	–	–	–	–	–	–	–

AM Peak 1145 - 1245 (121), AM PHF=0.78

ME2 Transportation Data Corp.
Vehicle Counts

VehicleCount-630 -- English (ENU)

Datasets:
Site: **Parkwood Road - South of Cottonwood Drive**

Profile:
Filter time: **14:12 Monday, June 03, 2013 => 14:31 Tuesday, June 04, 2013**
Direction: North (bound)

*** Monday, June 03, 2013 - Total=437 (Incomplete) , 15 minute drops**

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
–	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**49**	**56**	**72**	**83**	**60**	**42**	**39**	**24**	**7**	**5**	
–	–	–	–	–	–	–	–	–	–	–	–	–	–	0	17	17	29	21	13	12	9	3	1	1
–	–	–	–	–	–	–	–	–	–	–	–	–	–	20	9	18	21	13	7	15	5	2	3	1
–	–	–	–	–	–	–	–	–	–	–	–	–	–	10	19	16	14	16	9	7	5	1	1	0
–	–	–	–	–	–	–	–	–	–	–	–	–	–	19	11	21	19	10	13	5	5	1	0	1

*** Tuesday, June 04, 2013 - Total=459 (Incomplete) , 15 minute drops**

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
3	**2**	**2**	**0**	**3**	**11**	**44**	**58**	**74**	**37**	**33**	**44**	**64**	**46**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	
1	0	0	0	1	2	11	10	**17**	5	8	9	20	15	18	–	–	–	–	–	–	–	–	–	–
1	1	2	0	1	4	5	16	**24**	12	9	16	20	12	20	–	–	–	–	–	–	–	–	–	–
0	1	0	0	0	1	14	13	**16**	8	8	11	11	11	–	–	–	–	–	–	–	–	–	–	–
1	0	0	0	1	4	14	**19**	17	12	8	8	13	8	–	–	–	–	–	–	–	–	–	–	–

AM Peak 0745 - 0845 (76), AM PHF=0.79

MetroCount Traffic Executive
Vehicle Counts

VehicleCount-631 -- English (ENU)

Datasets:
Site: **Parkwood Road - South of Cottonwood Drive**

Profile:
Filter time: **14:12 Monday, June 03, 2013 => 14:31 Tuesday, June 04, 2013**
Direction: South (bound)

*** Monday, June 03, 2013 - Total=229 (Incomplete) , 15 minute drops**

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
–	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**23**	**38**	**42**	**45**	**25**	**19**	**16**	**12**	**6**	**3**	
–	–	–	–	–	–	–	–	–	–	–	–	–	–	3	15	10	8	6	6	6	2	1	1	1
–	–	–	–	–	–	–	–	–	–	–	–	–	–	9	3	8	12	9	2	2	2	2	0	0
–	–	–	–	–	–	–	–	–	–	–	–	–	–	5	11	11	12	4	7	5	5	1	0	1
–	–	–	–	–	–	–	–	–	–	–	–	–	–	6	9	13	13	6	4	3	3	2	2	0

*** Tuesday, June 04, 2013 - Total=360 (Incomplete) , 15 minute drops**

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
2	**2**	**0**	**1**	**2**	**21**	**46**	**50**	**39**	**33**	**34**	**29**	**38**	**45**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	
1	0	0	0	0	2	8	7	**10**	8	12	8	10	5	10	–	–	–	–	–	–	–	–	–	–
0	0	0	0	0	4	12	**18**	13	6	6	6	8	14	7	–	–	–	–	–	–	–	–	–	–
1	1	0	1	1	6	11	**11**	11	10	7	7	8	10	1	–	–	–	–	–	–	–	–	–	–
0	1	0	0	1	9	15	**14**	5	9	9	8	12	16	–	–	–	–	–	–	–	–	–	–	–

AM Peak 0715 - 0815 (53), AM PHF=0.74

ME2 Transportation Data Corp.
Vehicle Counts

VehicleCount-634 -- English (ENU)

Datasets:
Site: **Parkwood Road - South of Panorama Drive**

Profile:
Filter time: **14:29 Monday, June 03, 2013 => 14:43 Tuesday, June 04, 2013**
Direction: North (bound)

*** Monday, June 03, 2013 - Total=662 (Incomplete) , 15 minute drops**

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
–	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**90**	**113**	**127**	**103**	**85**	**55**	**52**	**28**	**9**	
–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	21	24	45	24	26	12	14	9	3	0
–	–	–	–	–	–	–	–	–	–	–	–	–	–	0	20	34	28	29	10	19	13	9	1	1
–	–	–	–	–	–	–	–	–	–	–	–	–	–	23	18	28	26	23	27	11	15	6	3	0
–	–	–	–	–	–	–	–	–	–	–	–	–	–	28	31	27	28	27	22	13	10	4	2	0

*** Tuesday, June 04, 2013 - Total=645 (Incomplete) , 15 minute drops**

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
1	**6**	**1**	**2**	**4**	**12**	**37**	**48**	**66**	**43**	**42**	**109**	**135**	**84**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	
0	2	0	1	1	0	5	7	16	12	13	18	**49**	27	21	–	–	–	–	–	–	–	–	–	–
1	2	0	0	0	1	6	16	18	10	12	23	**32**	22	16	–	–	–	–	–	–	–	–	–	–
0	2	1	0	1	3	9	10	15	13	7	**39**	33	17	18	–	–	–	–	–	–	–	–	–	–
0	0	0	1	2	8	17	15	17	8	10	**29**	21	18	–	–	–	–	–	–	–	–	–	–	–

AM Peak 1130 - 1230 (149), AM PHF=0.76

ME2 Transportation Data Corp.
Vehicle Counts

VehicleCount-635 -- English (ENU)

Datasets:
Site: **Parkwood Road - South of Panorama Drive**

Profile:
Filter time: **14:29 Monday, June 03, 2013 => 14:43 Tuesday, June 04, 2013**
Direction: South (bound)

*** Monday, June 03, 2013 - Total=362 (Incomplete) , 15 minute drops**

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
–	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**58**	**56**	**69**	**67**	**41**	**37**	**23**	**9**	**2**	
–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	16	20	18	19	15	9	6	4	0	0
–	–	–	–	–	–	–	–	–	–	–	–	–	–	0	5	14	20	18	9	12	5	4	0	0
–	–	–	–	–	–	–	–	–	–	–	–	–	–	17	16	11	11	14	11	5	4	0	0	0
–	–	–	–	–	–	–	–	–	–	–	–	–	–	16	21	11	20	16	6	11	8	1	2	0

*** Tuesday, June 04, 2013 - Total=470 (Incomplete) , 15 minute drops**

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
0	**1**	**2**	**0**	**2**	**13**	**32**	**41**	**41**	**28**	**32**	**76**	**106**	**69**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	
0	0	1	0	0	3	7	13	7	9	9	8	**43**	14	9	–	–	–	–	–	–	–	–	–	–
0	1	0	0	0	1	9	11	12	7	9	17	**21**	18	6	–	–	–	–	–	–	–	–	–	–
0	0	1	0	0	5	5	8	14	5	5	**27**	19	22	12	–	–	–	–	–	–	–	–	–	–
0	0	0	0	2	4	11	9	8	7	9	**24**	23	15	–	–	–	–	–	–	–	–	–	–	–

AM Peak 1130 - 1230 (115), AM PHF=0.67

ME2 Transportation Data Corp.
Vehicle Counts

VehicleCount-628 -- English (ENU)

Datasets:
Site: **Westgate Cresent - North of Westbrook Road (east)**

Profile:
Filter time: **13:56 Monday, June 03, 2013 => 14:21 Tuesday, June 04, 2013**
Direction: North (bound)

*** Monday, June 03, 2013 - Total=190 (Incomplete) , 15 minute drops**

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
–	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**13**	**21**	**31**	**29**	**39**	**10**	**21**	**8**	**16**	**2**	
–	–	–	–	–	–	–	–	–	–	–	–	–	–	2	6	5	10	9	1	6	0	6	1	2
–	–	–	–	–	–	–	–	–	–	–	–	–	–	2	2	11	8	6	0	3	4	6	0	1
–	–	–	–	–	–	–	–	–	–	–	–	–	–	4	10	8	9	19	3	7	1	3	1	0
–	–	–	–	–	–	–	–	–	–	–	–	–	2	5	3	7	2	5	6	5	3	1	0	0

*** Tuesday, June 04, 2013 - Total=84 (Incomplete) , 15 minute drops**

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
3	**1**	**1**	**0**	**1**	**0**	**3**	**8**	**5**	**9**	**8**	**13**	**24**	**7**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	
2	0	0	0	0	0	0	2	4	4	1	3	**8**	2	1	–	–	–	–	–	–	–	–	–	–
1	1	0	0	0	0	0	1	0	1	3	4	**4**	0	–	–	–	–	–	–	–	–	–	–	–
0	0	1	0	1	0	0	3	0	3	3	4	**8**	4	–	–	–	–	–	–	–	–	–	–	–
0	0	0	0	0	0	3	2	1	1	1	**2**	4	1	–	–	–	–	–	–	–	–	–	–	–

AM Peak 1145 - 1245 (22), AM PHF=0.69

ME2 Transportation Data Corp.
Vehicle Counts

VehicleCount-629 -- English (ENU)

Datasets:
Site: **Westgate Cresent - North of Westbrook Road (east)**

Profile:
Filter time: **13:56 Monday, June 03, 2013 => 14:21 Tuesday, June 04, 2013**
Direction: South (bound)

*** Monday, June 03, 2013 - Total=94 (Incomplete) , 15 minute drops**

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
–	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**8**	**9**	**22**	**20**	**11**	**16**	**3**	**5**	**0**	**0**	
–	–	–	–	–	–	–	–	–	–	–	–	–	–	0	4	10	5	4	5	1	1	0	0	0
–	–	–	–	–	–	–	–	–	–	–	–	–	–	2	2	9	5	2	7	1	2	0	0	0
–	–	–	–	–	–	–	–	–	–	–	–	–	–	2	1	1	3	1	3	1	2	0	0	0
–	–	–	–	–	–	–	–	–	–	–	–	–	2	4	2	2	7	4	1	0	0	0	0	0

*** Tuesday, June 04, 2013 - Total=140 (Incomplete) , 15 minute drops**

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
0	**0**	**0**	**0**	**1**	**13**	**17**	**33**	**19**	**6**	**14**	**14**	**16**	**4**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	
0	0	0	0	0	1	2	8	**9**	1	4	3	1	1	2	–	–	–	–	–	–	–	–	–	–
0	0	0	0	1	1	4	**9**	1	0	2	1	5	1	1	–	–	–	–	–	–	–	–	–	–
0	0	0	0	0	4	5	**9**	6	1	5	5	4	1	–	–	–	–	–	–	–	–	–	–	–
0	0	0	0	0	7	6	**7**	3	4	3	5	6	1	–	–	–	–	–	–	–	–	–	–	–

AM Peak 0715 - 0815 (34), AM PHF=0.94

ME2 Transportation Data Corp.
Vehicle Counts

VehicleCount-626 -- English (ENU)

Datasets:
Site: **Westgate Cresent - North of Westbrook Road (west)**

Profile:
Filter time: **13:45 Monday, June 03, 2013 => 14:14 Tuesday, June 04, 2013**
Direction: North (bound)

*** Monday, June 03, 2013 - Total=75 (Incomplete) , 15 minute drops**

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
–	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**4**	**8**	**15**	**13**	**11**	**6**	**9**	**4**	**3**	**2**	
–	–	–	–	–	–	–	–	–	–	–	–	–	–	2	3	1	1	4	1	5	0	0	2	0
–	–	–	–	–	–	–	–	–	–	–	–	–	–	0	1	3	6	3	4	2	0	1	0	0
–	–	–	–	–	–	–	–	–	–	–	–	–	–	0	1	5	3	4	1	2	2	1	0	0
–	–	–	–	–	–	–	–	–	–	–	–	–	0	2	3	6	3	0	0	0	2	1	0	0

*** Tuesday, June 04, 2013 - Total=23 (Incomplete) , 15 minute drops**

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
0	**0**	**0**	**0**	**0**	**0**	**1**	**2**	**4**	**1**	**2**	**2**	**5**	**4**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	
0	0	0	0	0	0	0	0	**3**	1	1	0	0	0	2	–	–	–	–	–	–	–	–	–	–
0	0	0	0	0	0	1	**1**	0	0	0	1	2	2	–	–	–	–	–	–	–	–	–	–	–
0	0	0	0	0	0	0	**0**	0	0	1	1	2	0	–	–	–	–	–	–	–	–	–	–	–
0	0	0	0	0	0	0	**1**	1	0	0	0	1	2	–	–	–	–	–	–	–	–	–	–	–

AM Peak 0715 - 0815 (5), AM PHF=0.42

ME2 Transportation Data Corp.
Vehicle Counts

VehicleCount-627 -- English (ENU)

Datasets:
Site: **Westgate Cresent - North of Westbrook Road (west)**

Profile:
Filter time: **13:45 Monday, June 03, 2013 => 14:14 Tuesday, June 04, 2013**
Direction: South (bound)

*** Monday, June 03, 2013 - Total=70 (Incomplete) , 15 minute drops**

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
–	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**8**	**4**	**16**	**9**	**11**	**7**	**8**	**2**	**3**	**2**	
–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	1	2	2	7	2	4	1	1	2	1
–	–	–	–	–	–	–	–	–	–	–	–	–	–	3	3	8	3	1	2	1	1	1	0	0
–	–	–	–	–	–	–	–	–	–	–	–	–	–	2	0	5	2	1	2	1	0	0	0	0
–	–	–	–	–	–	–	–	–	–	–	–	–	0	2	0	1	2	2	1	2	0	1	0	0

*** Tuesday, June 04, 2013 - Total=89 (Incomplete) , 15 minute drops**

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
1	**0**	**0**	**0**	**1**	**0**	**12**	**21**	**9**	**14**	**8**	**7**	**7**	**7**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	
1	0	0	0	0	0	2	**5**	3	3	1	3	2	2	2	–	–	–	–	–	–	–	–	–	–
0	0	0	0	0	0	3	**4**	2	6	2	2	2	0	–	–	–	–	–	–	–	–	–	–	–
0	0	0	0	1	0	5	**8**	1	3	4	2	2	1	–	–	–	–	–	–	–	–	–	–	–
0	0	0	0	0	0	2	**4**	3	2	1	0	1	4	–	–	–	–	–	–	–	–	–	–	–

AM Peak 0700 - 0800 (21), AM PHF=0.66

Appendix D Alberta Transportation – Turning Movements

Reference No.: 89332

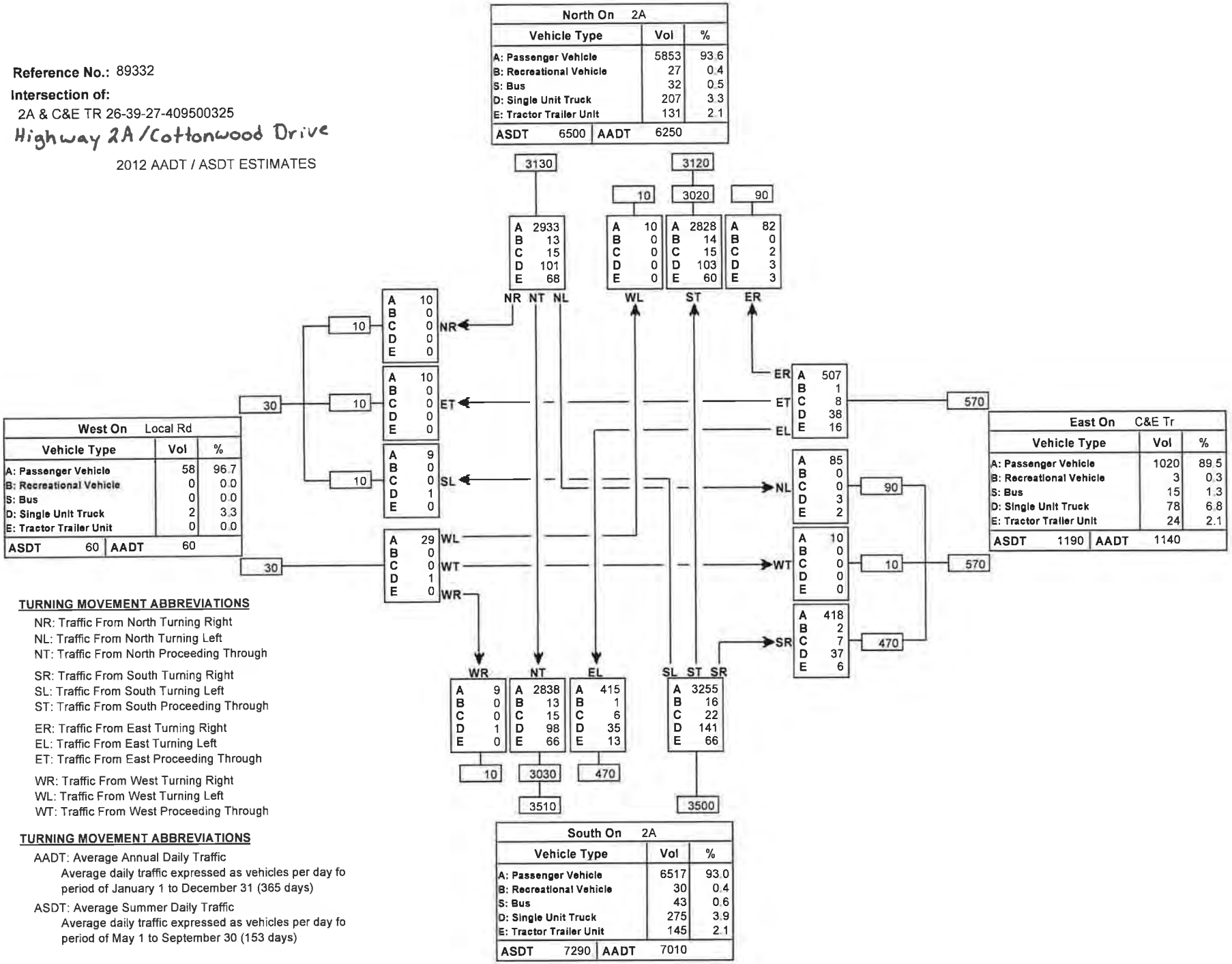
Intersection of:

2A & C&E TR 26-39-27-409500325

Highway 2A / Cottonwood Drive

2012 AADT / ASDT ESTIMATES

Turning Movement Summary Diagram



TURNING MOVEMENT ABBREVIATIONS

NR: Traffic From North Turning Right
NL: Traffic From North Turning Left
NT: Traffic From North Proceeding Through

SR: Traffic From South Turning Right
SL: Traffic From South Turning Left
ST: Traffic From South Proceeding Through

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ET: Traffic From East Proceeding Through

WR: Traffic From West Turning Right
WL: Traffic From West Turning Left
WT: Traffic From West Proceeding Through

TURNING MOVEMENT ABBREVIATIONS

AADT: Average Annual Daily Traffic
Average daily traffic expressed as vehicles per day fo
period of January 1 to December 31 (365 days)

ASDT: Average Summer Daily Traffic
Average daily traffic expressed as vehicles per day fo
period of May 1 to September 30 (153 days)

Turning Movement Summary Diagram

Reference No.: 89332

Intersection of:
2A & C&E TR 26-39-27-409500325

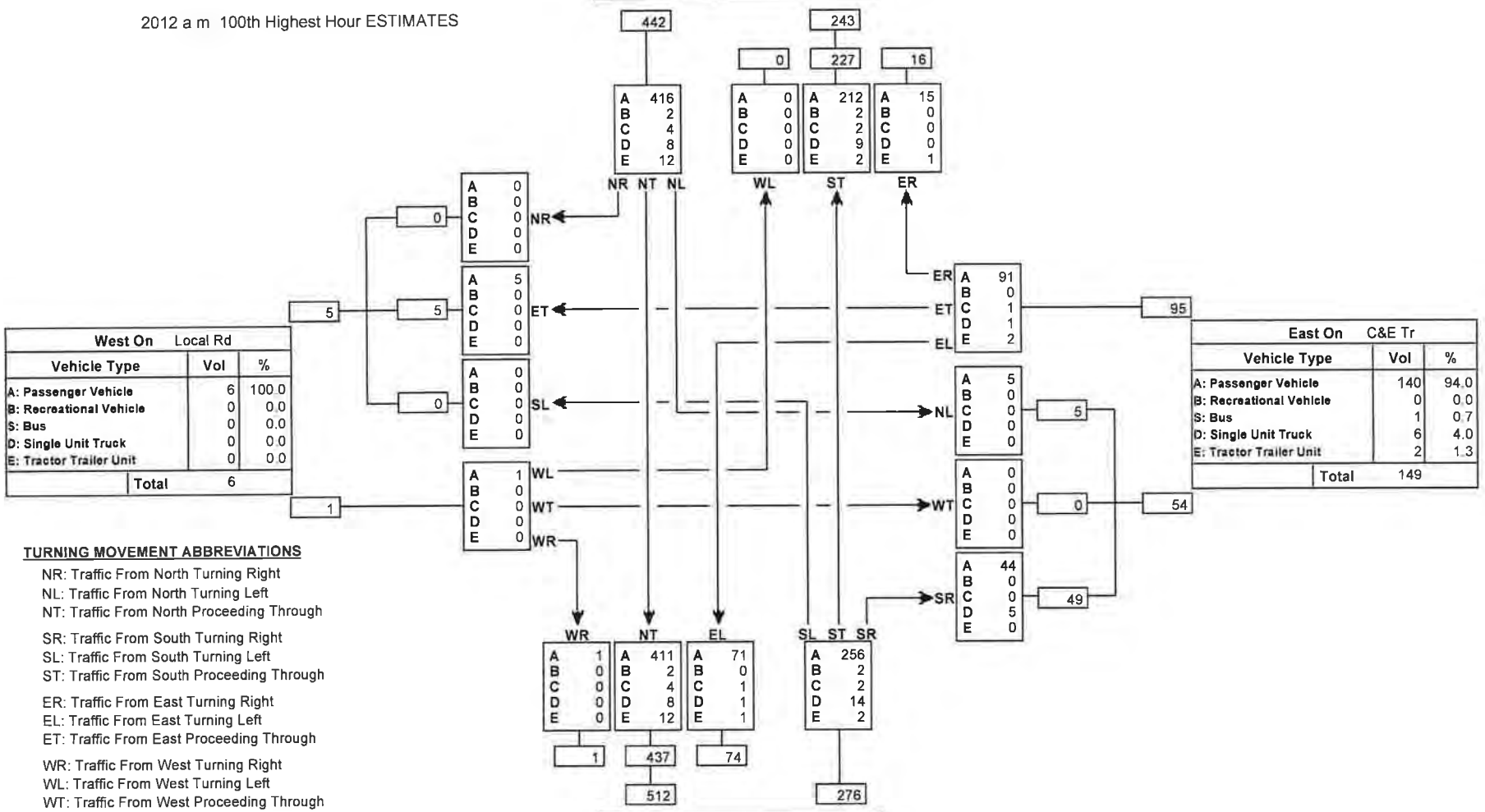
2012 a m 100th Highest Hour ESTIMATES

North On 2A		
Vehicle Type	Vol	%
A: Passenger Vehicle	643	93.9
B: Recreational Vehicle	4	0.6
S: Bus	6	0.9
D: Single Unit Truck	17	2.5
E: Tractor Trailer Unit	15	2.2
Total	685	

West On Local Rd		
Vehicle Type	Vol	%
A: Passenger Vehicle	6	100.0
B: Recreational Vehicle	0	0.0
S: Bus	0	0.0
D: Single Unit Truck	0	0.0
E: Tractor Trailer Unit	0	0.0
Total	6	

East On C&E Tr		
Vehicle Type	Vol	%
A: Passenger Vehicle	140	94.0
B: Recreational Vehicle	0	0.0
S: Bus	1	0.7
D: Single Unit Truck	6	4.0
E: Tractor Trailer Unit	2	1.3
Total	149	

South On 2A		
Vehicle Type	Vol	%
A: Passenger Vehicle	739	93.8
B: Recreational Vehicle	4	0.5
S: Bus	7	0.9
D: Single Unit Truck	23	2.9
E: Tractor Trailer Unit	15	1.9
Total	788	



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WT: Traffic From West Proceeding Through

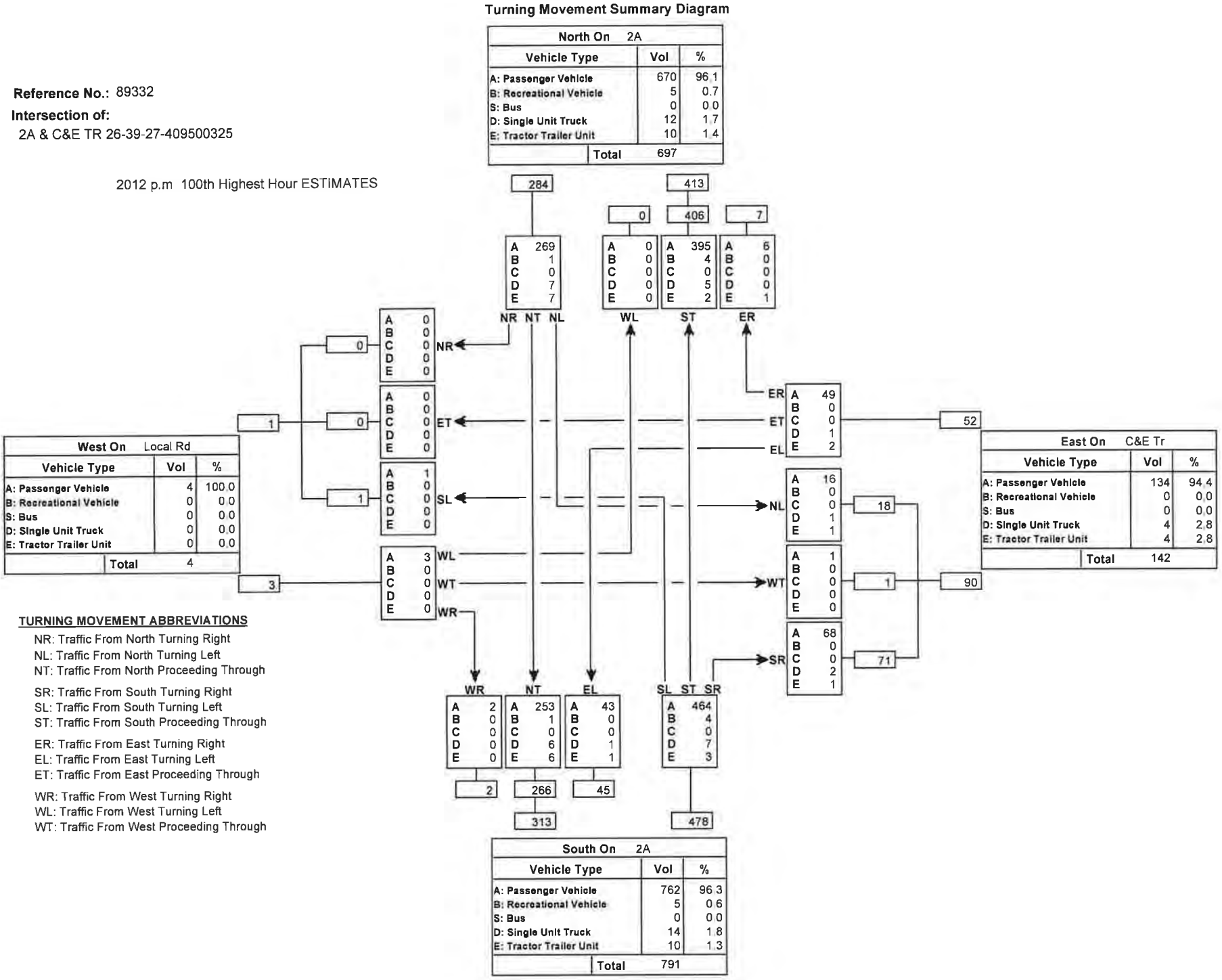
Reference No.: 89332

Intersection of:

2A & C&E TR 26-39-27-409500325

2012 p.m 100th Highest Hour ESTIMATES

Turning Movement Summary Diagram



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ET: Traffic From East Proceeding Through

WR: Traffic From West Turning Right
WL: Traffic From West Turning Left
WT: Traffic From West Proceeding Through

Reference No.: 990015

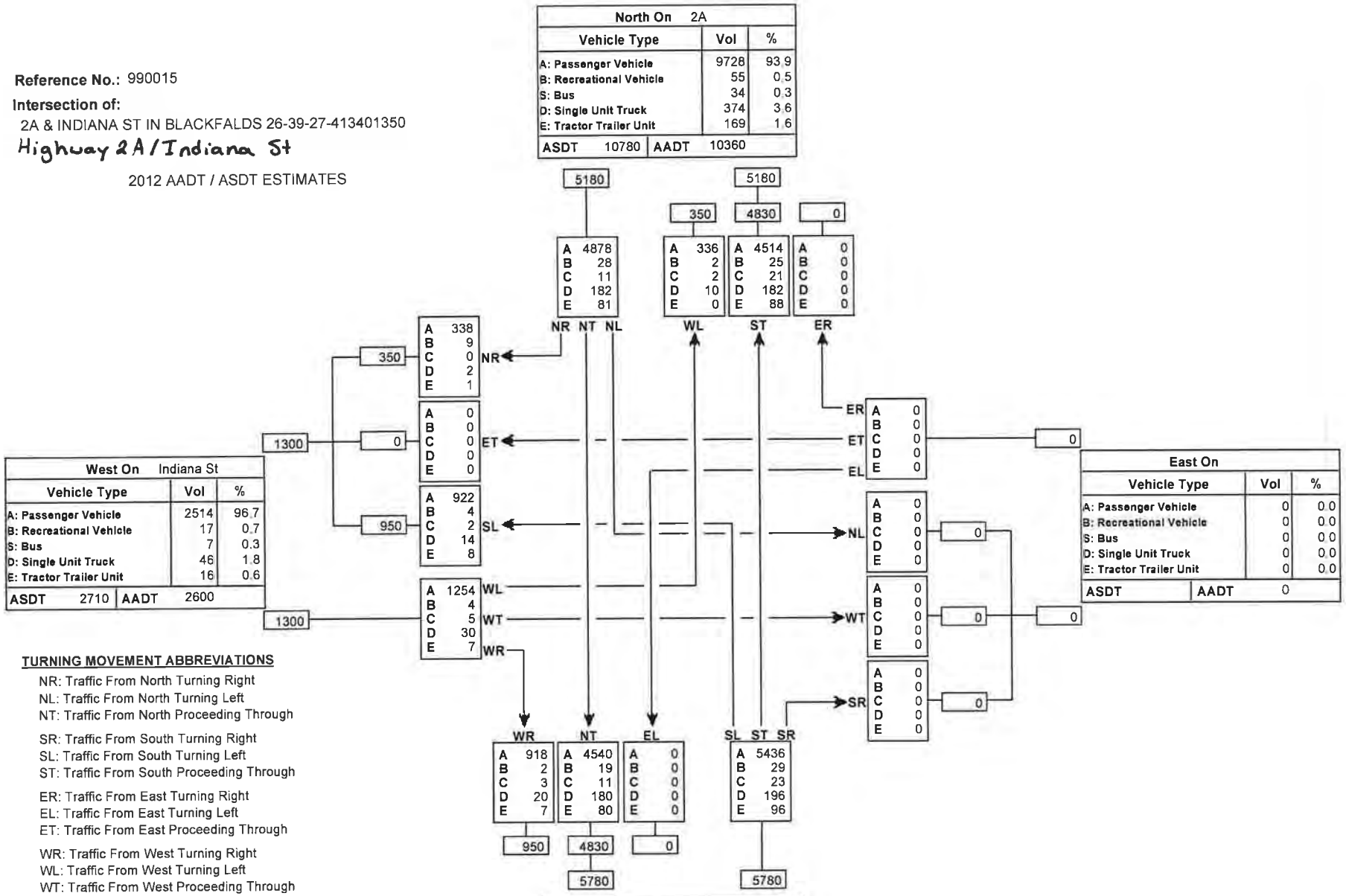
Intersection of:

2A & INDIANA ST IN BLACKFALDS 26-39-27-413401350

Highway 2A / Indiana St

2012 AADT / ASDT ESTIMATES

Turning Movement Summary Diagram



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TURNING MOVEMENT ABBREVIATIONS

AADT: Average Annual Daily Traffic
Average daily traffic expressed as vehicles per day fo
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ASDT: Average Summer Daily Traffic
Average daily traffic expressed as vehicles per day fo
period of May 1 to September 30 (153 days)

Reference No.: 990015

Intersection of:

2A & INDIANA ST IN BLACKFALDS 26-39-27-413401350

2012 a.m. 100th Highest Hour ESTIMATES

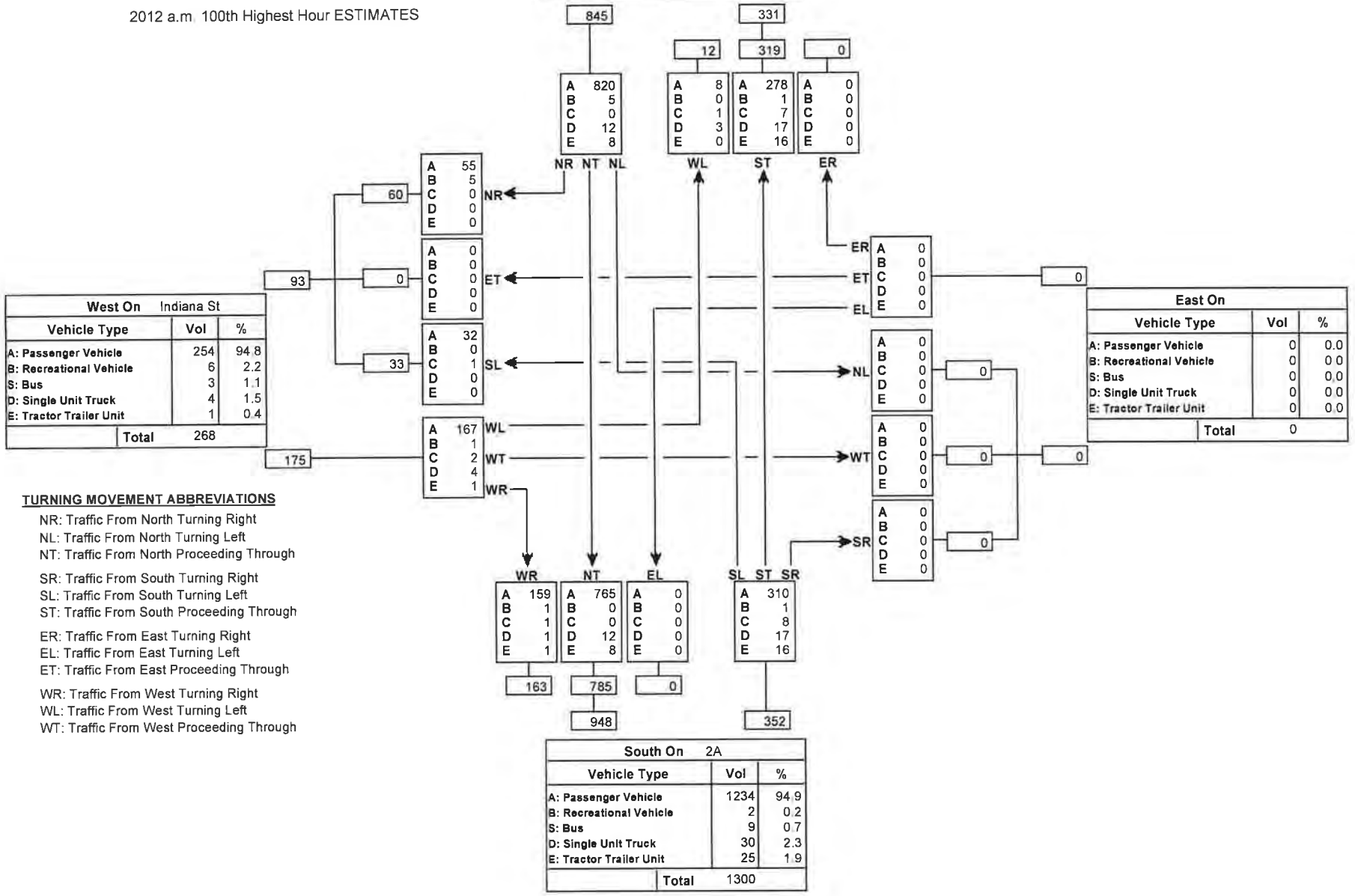
Turning Movement Summary Diagram

North On 2A		
Vehicle Type	Vol	%
A: Passenger Vehicle	1106	94.0
B: Recreational Vehicle	6	0.5
S: Bus	8	0.7
D: Single Unit Truck	32	2.7
E: Tractor Trailer Unit	24	2.0
Total	1176	

West On Indiana St		
Vehicle Type	Vol	%
A: Passenger Vehicle	254	94.8
B: Recreational Vehicle	6	2.2
S: Bus	3	1.1
D: Single Unit Truck	4	1.5
E: Tractor Trailer Unit	1	0.4
Total	268	

East On		
Vehicle Type	Vol	%
A: Passenger Vehicle	0	0.0
B: Recreational Vehicle	0	0.0
S: Bus	0	0.0
D: Single Unit Truck	0	0.0
E: Tractor Trailer Unit	0	0.0
Total	0	

South On 2A		
Vehicle Type	Vol	%
A: Passenger Vehicle	1234	94.9
B: Recreational Vehicle	2	0.2
S: Bus	9	0.7
D: Single Unit Truck	30	2.3
E: Tractor Trailer Unit	25	1.9
Total	1300	



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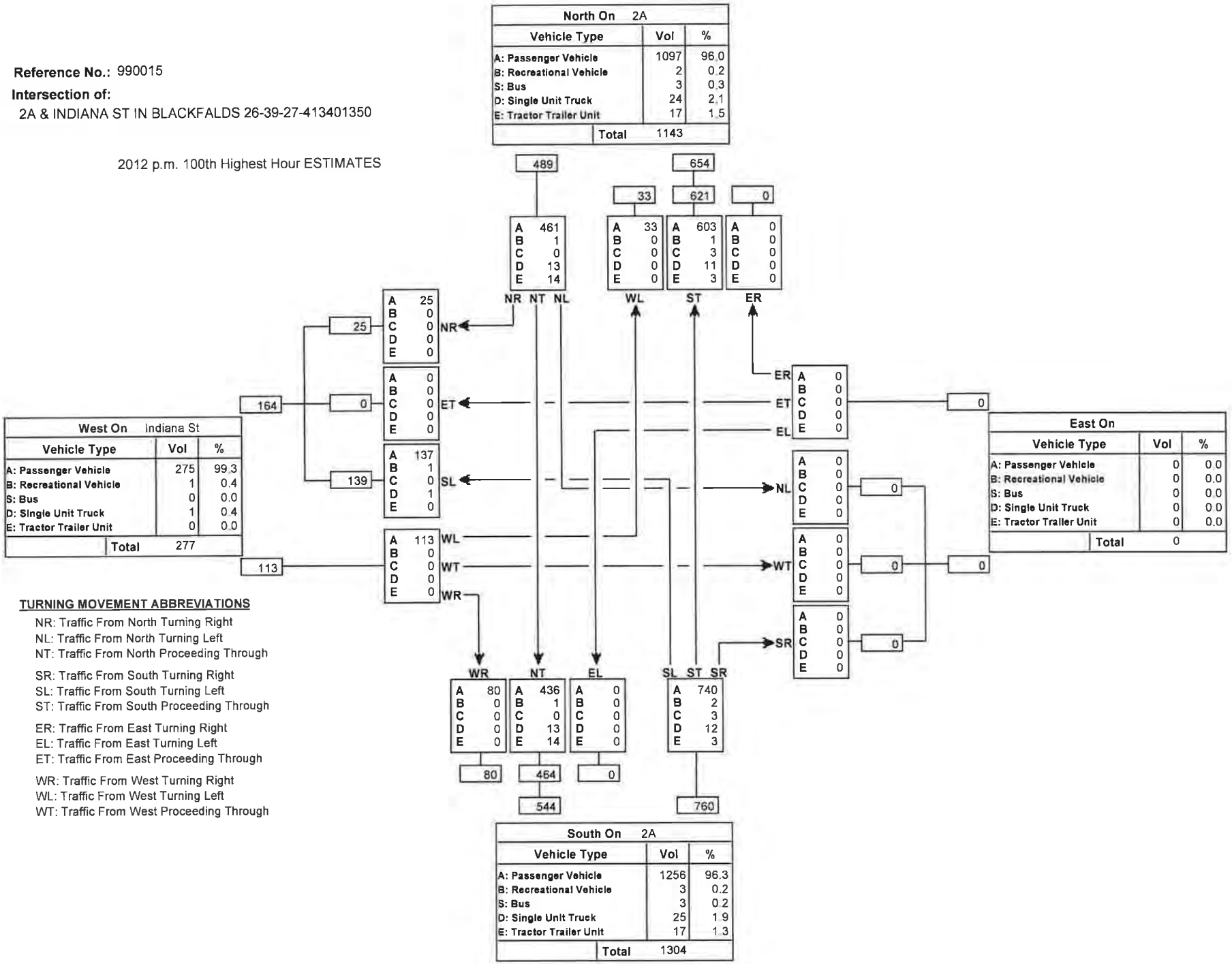
Reference No.: 990015

Intersection of:

2A & INDIANA ST IN BLACKFALDS 26-39-27-413401350

2012 p.m. 100th Highest Hour ESTIMATES

Turning Movement Summary Diagram



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WR: Traffic From West Turning Right
WL: Traffic From West Turning Left
WT: Traffic From West Proceeding Through

Turning Movement Summary Diagram

Reference No.: 89330

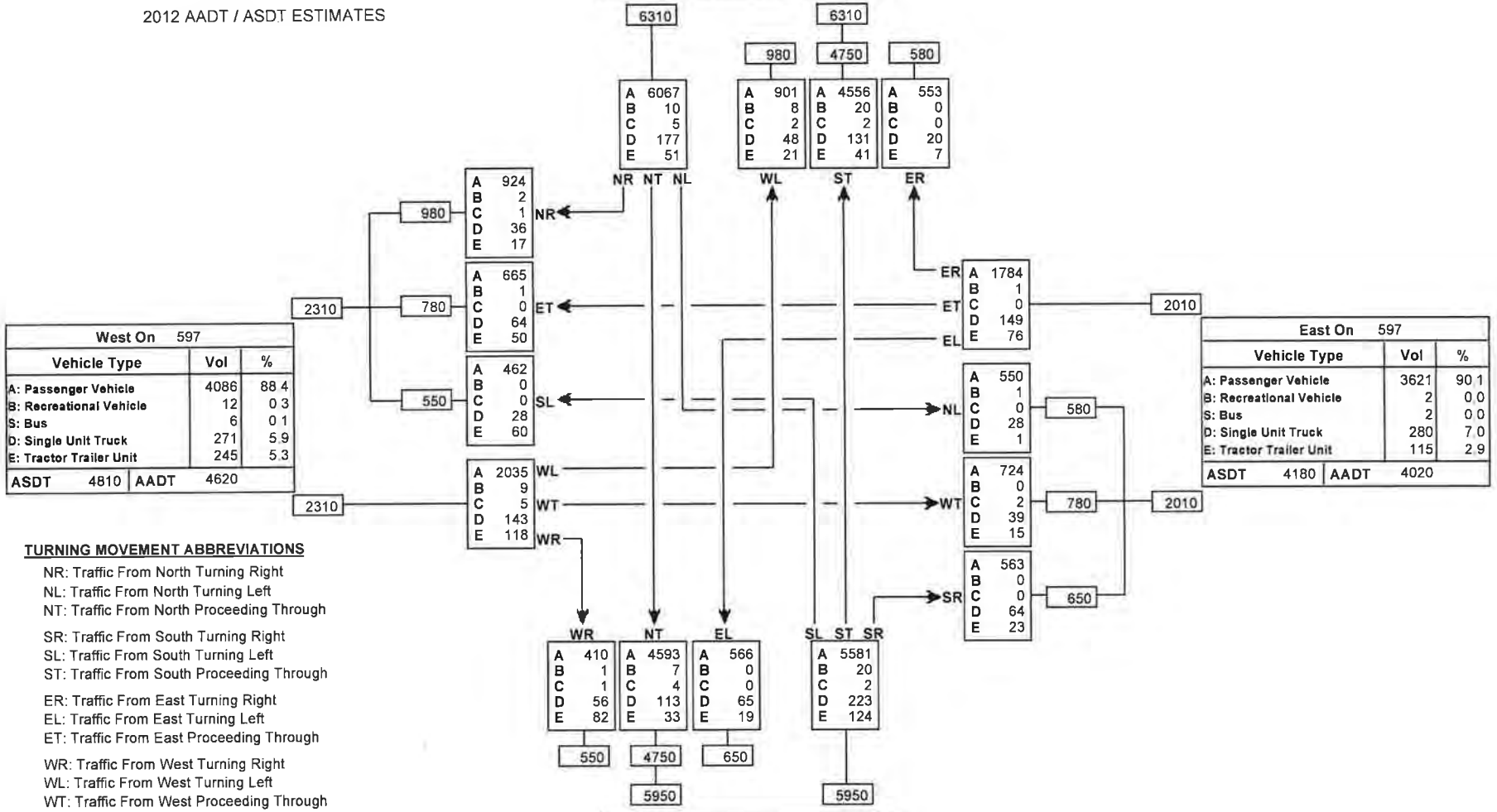
Intersection of:

2A & 597 S OF BLACKFALDS

Highway 2A / Highway 597

2012 AADT / ASDT ESTIMATES

North On 2A		
Vehicle Type	Vol	%
A: Passenger Vehicle	12077	95.7
B: Recreational Vehicle	38	0.3
S: Bus	9	0.1
D: Single Unit Truck	376	3.0
E: Tractor Trailer Unit	120	1.0
ASDT 13130	AADT 12620	



West On 597		
Vehicle Type	Vol	%
A: Passenger Vehicle	4086	88.4
B: Recreational Vehicle	12	0.3
S: Bus	6	0.1
D: Single Unit Truck	271	5.9
E: Tractor Trailer Unit	245	5.3
ASDT 4810	AADT 4620	

East On 597		
Vehicle Type	Vol	%
A: Passenger Vehicle	3621	90.1
B: Recreational Vehicle	2	0.0
S: Bus	2	0.0
D: Single Unit Truck	280	7.0
E: Tractor Trailer Unit	115	2.9
ASDT 4180	AADT 4020	

South On 2A		
Vehicle Type	Vol	%
A: Passenger Vehicle	11150	93.7
B: Recreational Vehicle	28	0.2
S: Bus	7	0.1
D: Single Unit Truck	457	3.8
E: Tractor Trailer Unit	258	2.2
ASDT 12380	AADT 11900	

TURNING MOVEMENT ABBREVIATIONS

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WT: Traffic From West Proceeding Through

TURNING MOVEMENT ABBREVIATIONS

AADT: Average Annual Daily Traffic
Average daily traffic expressed as vehicles per day fo
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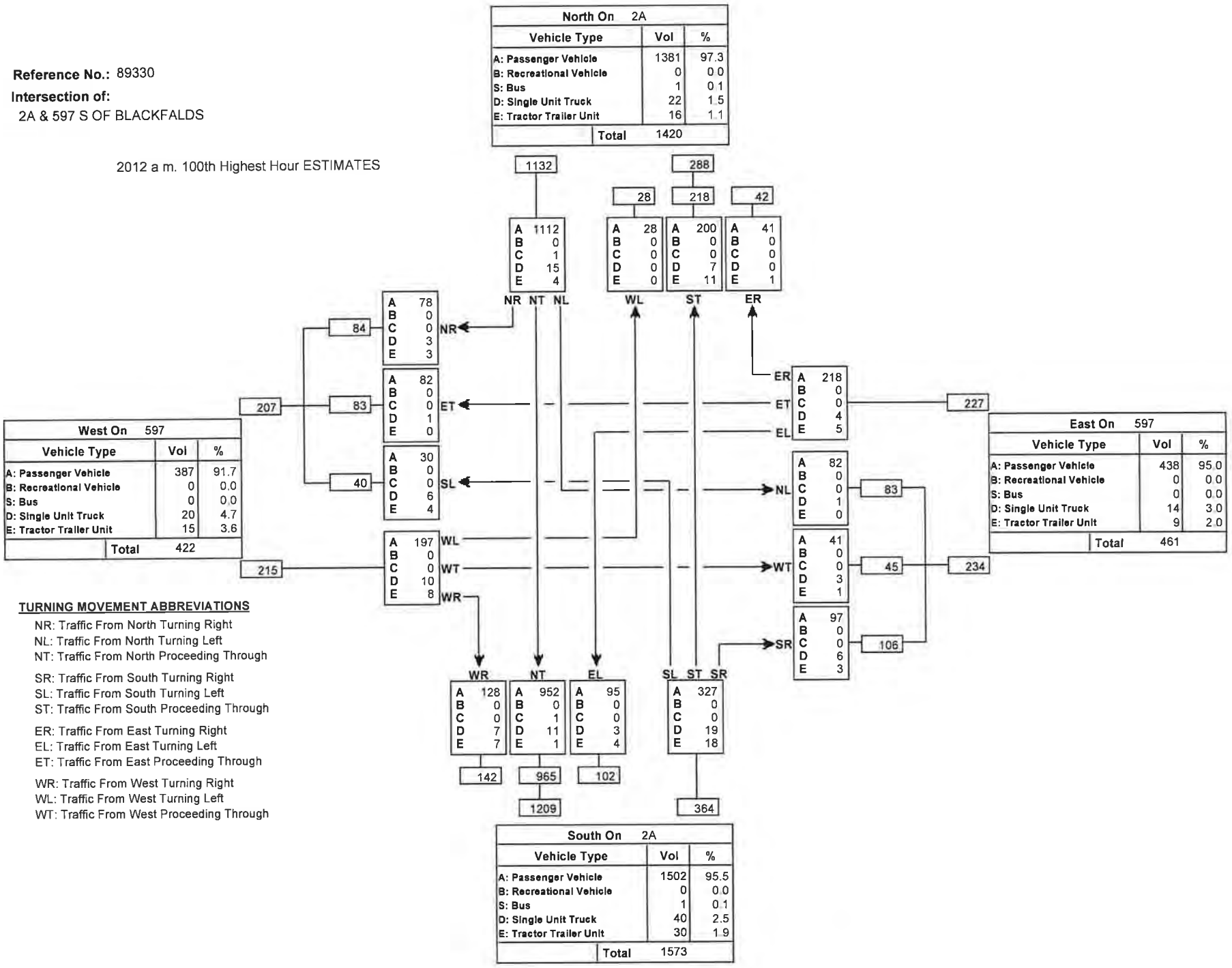
Turning Movement Summary Diagram

Reference No.: 89330

Intersection of:
2A & 597 S OF BLACKFALDS

2012 a m. 100th Highest Hour ESTIMATES



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Turning Movement Summary Diagram

Reference No.: 89330

Intersection of:
2A & 597 S OF BLACKFALDS

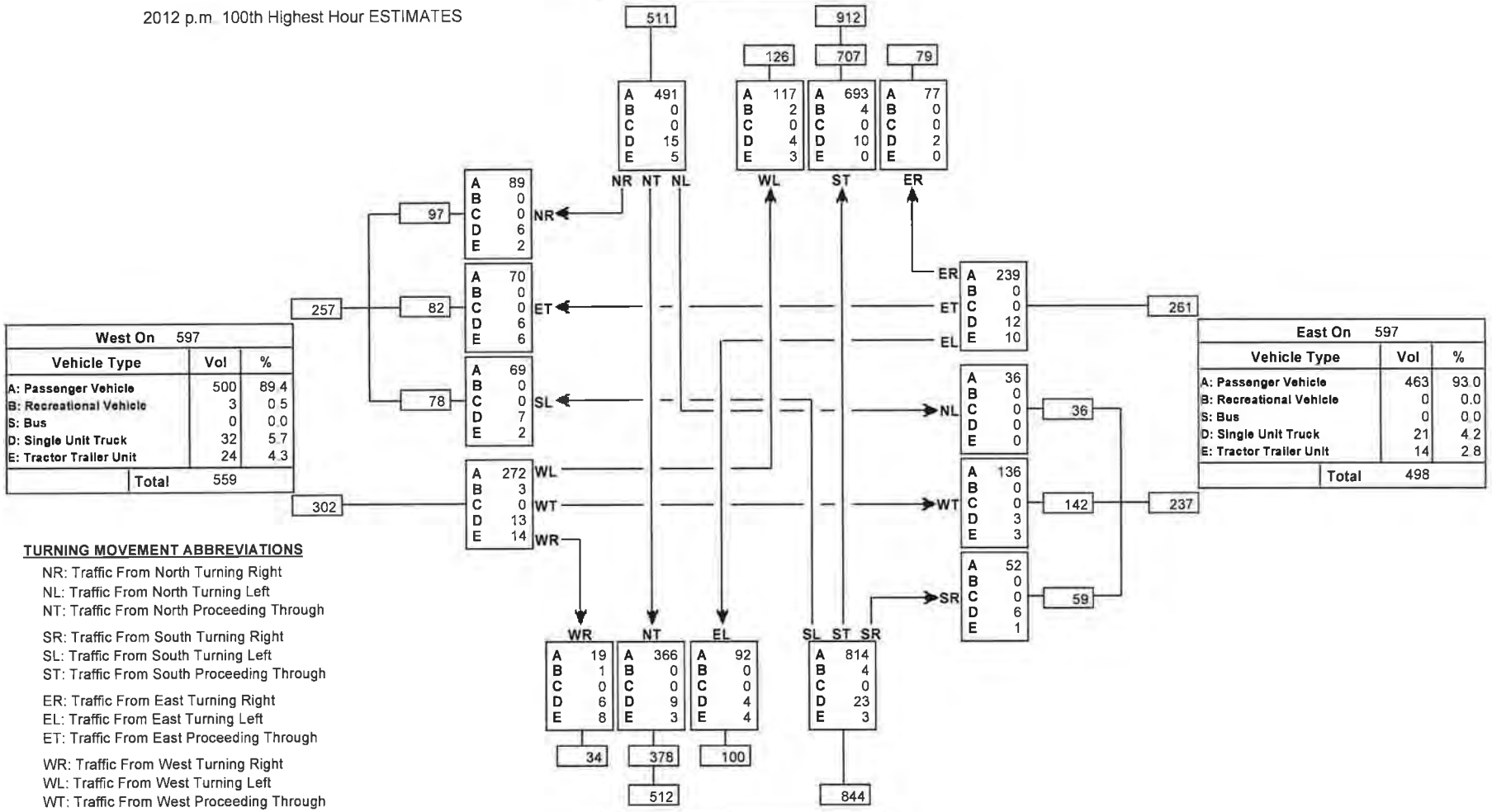
2012 p.m. 100th Highest Hour ESTIMATES

North On 2A		
Vehicle Type	Vol	%
A: Passenger Vehicle	1378	96.8
B: Recreational Vehicle	6	0.4
S: Bus	0	0.0
D: Single Unit Truck	31	2.2
E: Tractor Trailer Unit	8	0.6
Total	1423	

West On 597		
Vehicle Type	Vol	%
A: Passenger Vehicle	500	89.4
B: Recreational Vehicle	3	0.5
S: Bus	0	0.0
D: Single Unit Truck	32	5.7
E: Tractor Trailer Unit	24	4.3
Total	559	

East On 597		
Vehicle Type	Vol	%
A: Passenger Vehicle	463	93.0
B: Recreational Vehicle	0	0.0
S: Bus	0	0.0
D: Single Unit Truck	21	4.2
E: Tractor Trailer Unit	14	2.8
Total	498	

South On 2A		
Vehicle Type	Vol	%
A: Passenger Vehicle	1291	95.2
B: Recreational Vehicle	5	0.4
S: Bus	0	0.0
D: Single Unit Truck	42	3.1
E: Tractor Trailer Unit	18	1.3
Total	1356	



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WL: Traffic From West Turning Left
WT: Traffic From West Proceeding Through

Turning Movement Summary Diagram

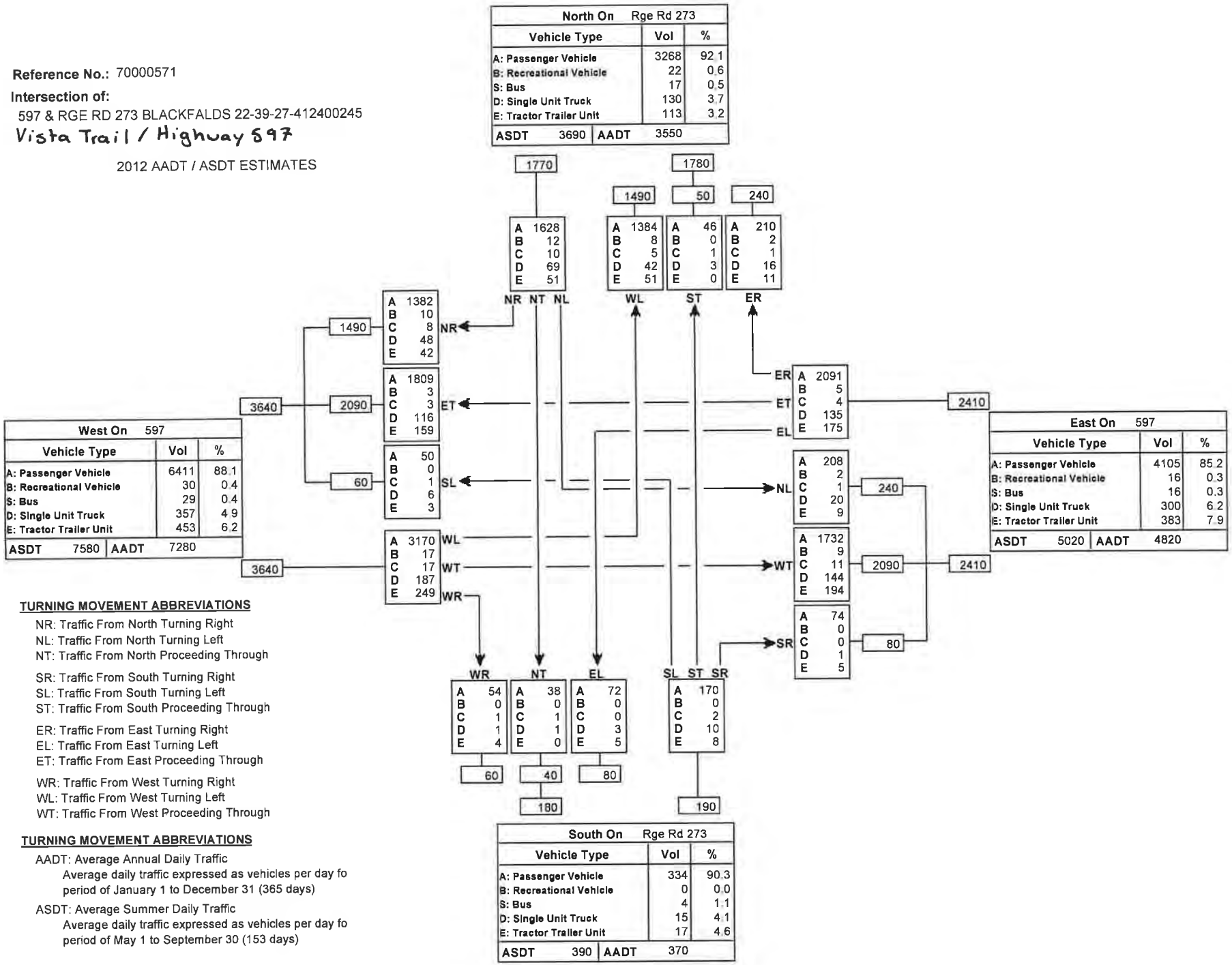
Reference No.: 70000571

Intersection of:

597 & RGE RD 273 BLACKFALDS 22-39-27-412400245

Vista Trail / Highway 597

2012 AADT / ASDT ESTIMATES



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TURNING MOVEMENT ABBREVIATIONS

AADT: Average Annual Daily Traffic
Average daily traffic expressed as vehicles per day fo period of January 1 to December 31 (365 days)

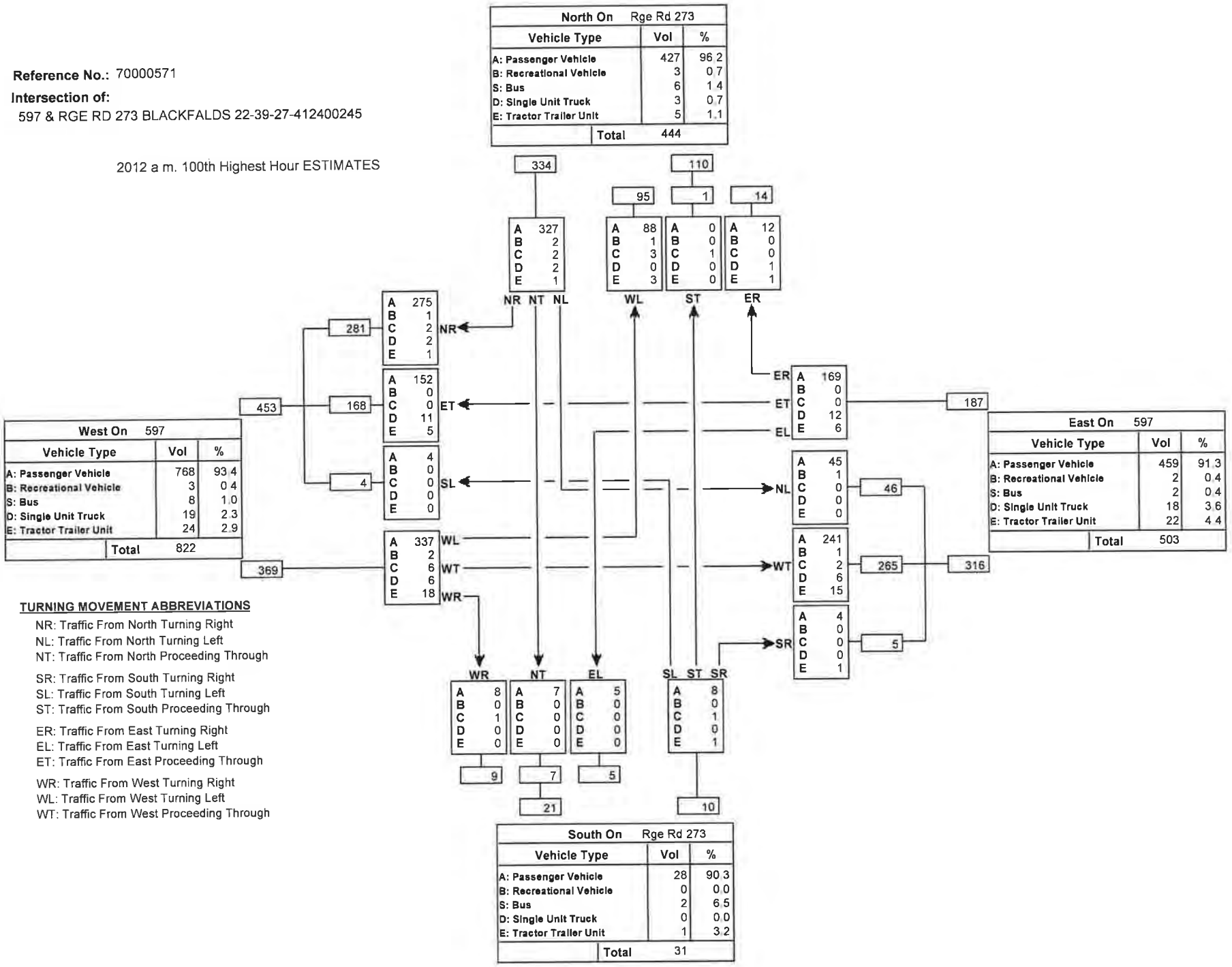
ASDT: Average Summer Daily Traffic
Average daily traffic expressed as vehicles per day fo period of May 1 to September 30 (153 days)

Turning Movement Summary Diagram

Reference No.: 70000571

Intersection of:
597 & RGE RD 273 BLACKFALDS 22-39-27-412400245

2012 a m. 100th Highest Hour ESTIMATES



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Turning Movement Summary Diagram

Reference No.: 70000571

Intersection of:
597 & RGE RD 273 BLACKFALDS 22-39-27-412400245

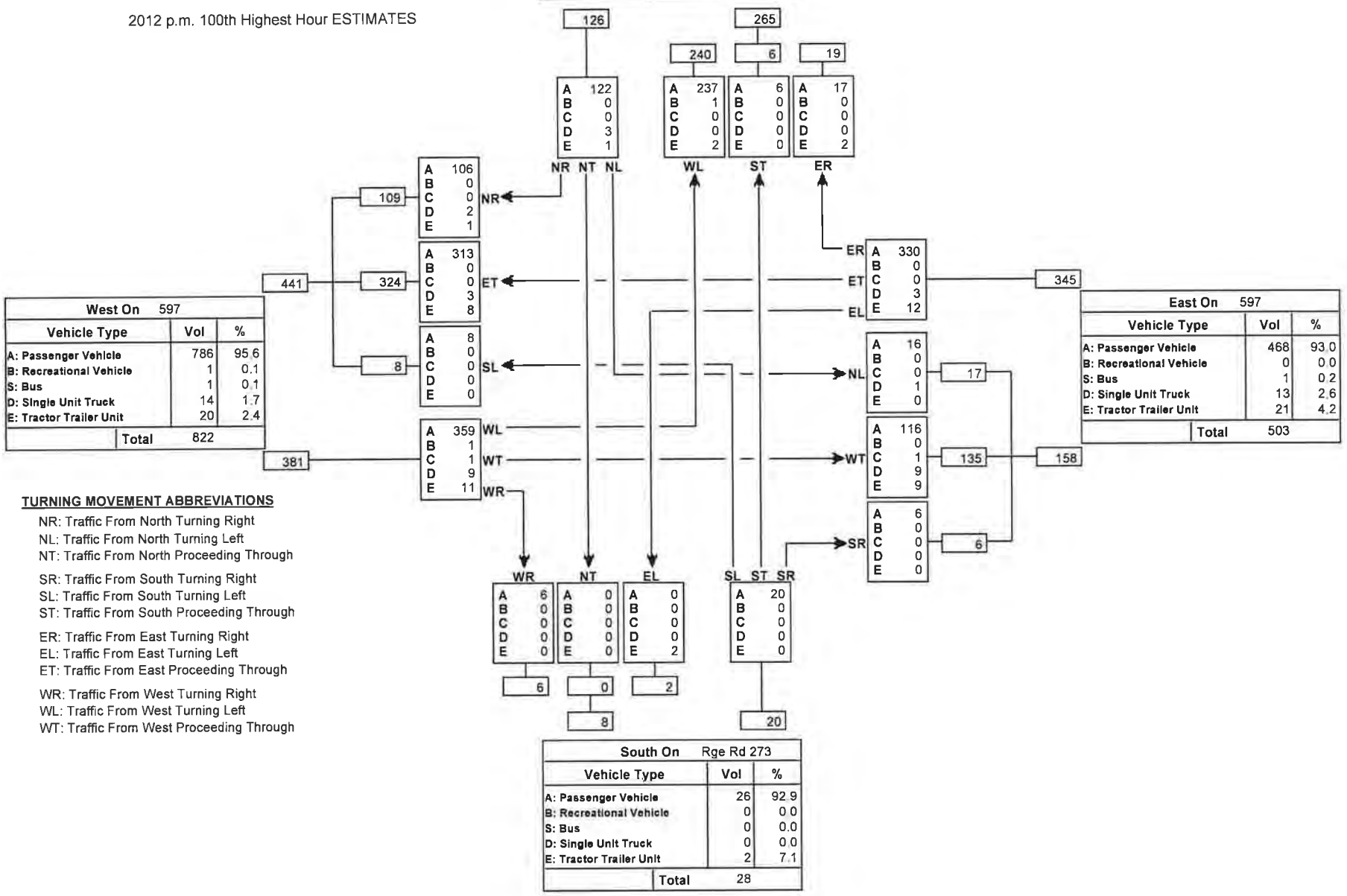
2012 p.m. 100th Highest Hour ESTIMATES

North On Rge Rd 273		
Vehicle Type	**Vol**	**%**
A: Passenger Vehicle	382	97.7
B: Recreational Vehicle	1	0.3
S: Bus	0	0.0
D: Single Unit Truck	3	0.8
E: Tractor Trailer Unit	5	1.3
Total	391	

West On 597		
Vehicle Type	**Vol**	**%**
A: Passenger Vehicle	786	95.6
B: Recreational Vehicle	1	0.1
S: Bus	1	0.1
D: Single Unit Truck	14	1.7
E: Tractor Trailer Unit	20	2.4
Total	822	

East On 597		
Vehicle Type	**Vol**	**%**
A: Passenger Vehicle	468	93.0
B: Recreational Vehicle	0	0.0
S: Bus	1	0.2
D: Single Unit Truck	13	2.6
E: Tractor Trailer Unit	21	4.2
Total	503	

South On Rge Rd 273		
Vehicle Type	**Vol**	**%**
A: Passenger Vehicle	26	92.9
B: Recreational Vehicle	0	0.0
S: Bus	0	0.0
D: Single Unit Truck	0	0.0
E: Tractor Trailer Unit	2	7.1
Total	28	



TURNING MOVEMENT ABBREVIATIONS

NR: Traffic From North Turning Right
NL: Traffic From North Turning Left
NT: Traffic From North Proceeding Through

SR: Traffic From South Turning Right
SL: Traffic From South Turning Left
ST: Traffic From South Proceeding Through

ER: Traffic From East Turning Right
EL: Traffic From East Turning Left
ET: Traffic From East Proceeding Through

WR: Traffic From West Turning Right
WL: Traffic From West Turning Left
WT: Traffic From West Proceeding Through

APPENDIX B HIGHWAY 2A CORRIDOR MODELLING

Stantec

Memo

To:	Town of Blackfalds & Alberta Transportation	From:	Stantec
	Alberta Transportation		Red Deer / Edmonton
File:	116239341	Date:	September 18, 2014

Reference: Highway 2A Corridor Modeling
Highway 597 Roundabout - Preliminary Modeling Update

INTRODUCTION

As demonstrated in the previous VISSIM model and summarized in the memo on August 21, 2014, the overall travel times for the northbound and southbound trips through Blackfalds is only moderately different between the Options 1,2, and 3 at the 16K population horizon. However, the impacts to the LOS of the roundabout were noted as somewhat of a concern. In particular, the PM Peak Eastbound left-turn movement at the Highway 597 roundabout was noted to have the most significant impact to its Level of Service (LOS) results, which were LOS of D, E, and F for Options 1, 2, and 3 respectively at the 20 year horizon.

Maintaining Broadway Avenue as a fully-opened intersection is imperative to the Town's ability to develop the land located adjacent to the northwest of the Highway 597 intersection. Without the full Broadway Avenue access, the land would remain stagnant. Alberta Transportation's interest and concerns in the roundabout operations are well understood. The operational efficiency of the roundabout is important not only to Alberta Transportation, but the Town of Blackfalds as well.

Stantec has since completed additional review of the model and explored alternative parameters that could impact the results. In particular, there were two sets of modeling adjustments that were heavily explored and remodeled accordingly:

- The ability for eastbound-left turning traffic towards Broadway Avenue to access Broadway Avenue by diverting through the proposed development via the access on Highway597, rather than from Highway 2A; and
- The simulated "driver behavior" parameters used for vehicles entering the roundabout.

The results of these modeled alternatives are discussed in detail below.

HIGHWAY 597 DIVERSION ACCESS TO BROADWAY AVENUE

Through recognition of the impact of having Broadway fully open to the Highway597 Eastbound traffic, Stantec explored the potential to divert that eastbound traffic through the future proposed subdivision as an alternative to entering the roundabout and entering Broadway Avenue from Highway 2A. It is reasonable to assume that with the new access, traffic that is destined to Broadway Avenue from Highway 597 would "shortcut" through the development. Therefore, we applied a "penalty" condition within the model that would simulate the potential benefit that the diversion would have on the roundabout.

> Conclusion**:** The diversion of eastbound traffic destined to Broadway Avenue through the development had no tangible benefit to the operations of the roundabout. This leads to the conclusion that the impacts of Option 3 on the roundabout operations are a result of traffic distributions from other parts of Town and highway traffic rather than just from eastbound Highway 597.

Reference: Highway 2A Corridor Modeling
Highway 597 Roundabout - Preliminary Modeling Update

DRIVER BEHAVIOR SIMULATION PARAMETERS

Roundabout modeling results are very sensitive to the driver behavior parameters used in the simulations. Throughout the modeling, the criteria used have been quite conservative and were based on aggressive projected traffic volumes and relatively cautious driving behaviors.

In the original simulations, Stantec utilized driving behaviors that are applicable for relatively cautious driver behaviors that would be appropriate when a roundabout is first introduced and drivers are still learning and adjusting to its operation. However, at the 20 year horizon, it is reasonable to assume that the drivers will be well experienced with the operations of the roundabout. Therefore, the experienced drivers can be expected to be more aggressive and efficient in traveling through the roundabout in comparison to traffic that is just getting introduced to it.

The roundabout was remodeled to incorporate a reduction in "*Front Gap Time*" from 0.5 to 0.3 seconds. The front gap time is the minimum gap in seconds between the rear of a vehicle in the roundabout and the front of a vehicle entering the roundabout. The remodeling also incorporated a reduction in the "*Safety Distance Factor*", which is related to merging maneuvers, from 1.5 (Conservative) to 1.2 (somewhat conservative). It should be noted that in the US, it is quite common for a safety distance factor of only 1.0 to be used by default.

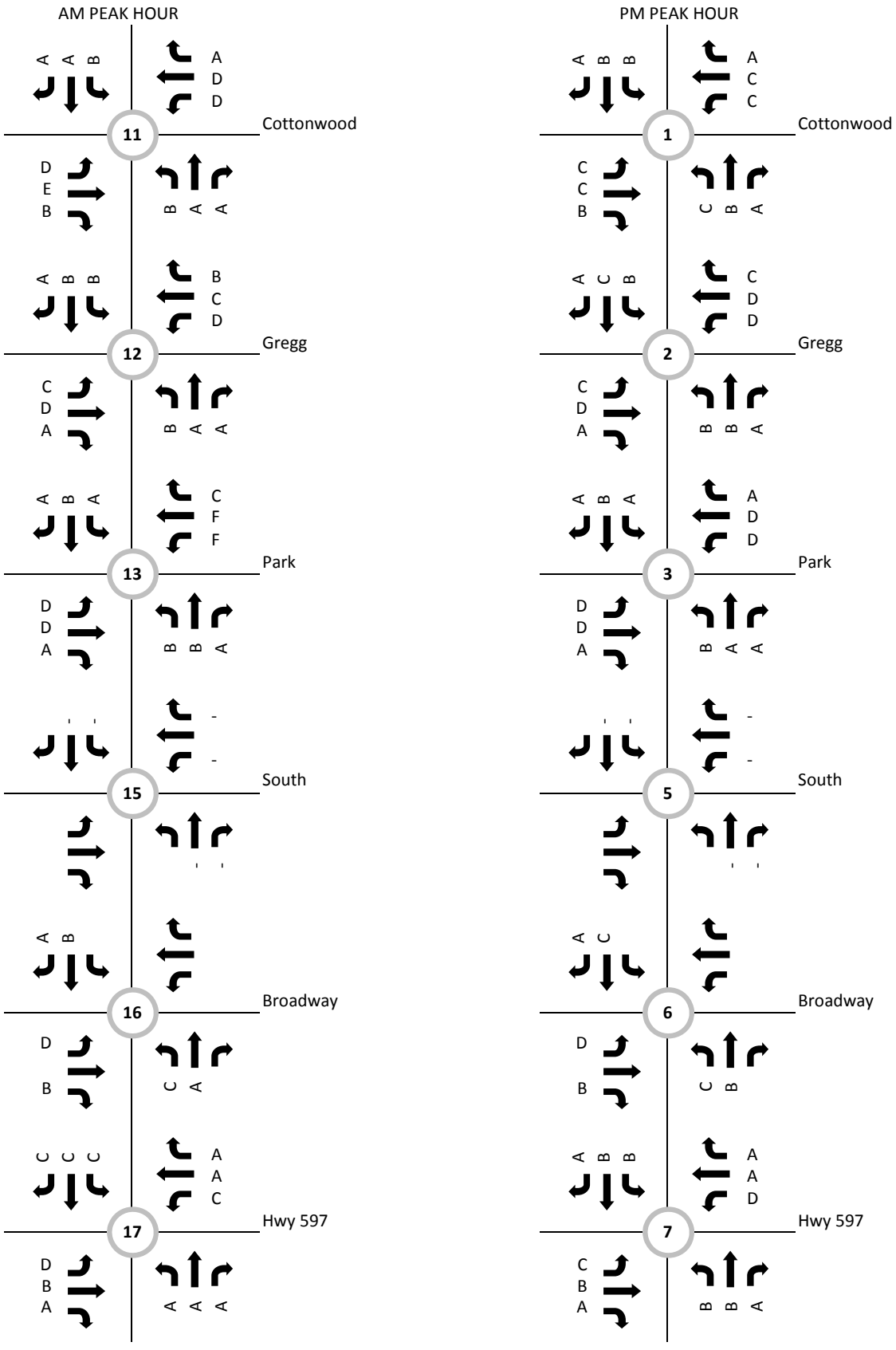
> Conclusion**:** Based on these adjustments, the Level of Service for the entire roundabout improved. In particular, the Eastbound Left turning movement improved to LOS C and D for Options 2 and 3, respectively.
>
> Please refer to the attached figures for detailed results of queuing and level of service. Please note that Option #1 was not remodeled with modified parameters.

SUMMARY

The previous modeling results concluded that at the 20 year horizon, the Highway 597 roundabout would begin to experience somewhat poorer traffic flows as a result of having Broadway Avenue fully open. In particular, there was a notable failure for the Eastbound-left turning movement. In recognition of the importance of this intersection to both Alberta Transportation and the Town of Blackfalds, the model has been reviewed and assessed for the level of conservatism.

In summary, the results of remodeling the roundabout with slightly less conservative driver behaviors raise the projected level of services for Option 2 from a level of service of E to C, and Option 3 from a level of service F to D. Based on the fact that the projected volumes are aggressive and that the model is still relatively conservative, the impact of having Broadway Avenue maintained as fully open to the operations of the roundabout are confidently considered relatively minor, even at the 20 year horizon. Therefore, Stantec still recommends that Broadway Avenue be considered to be maintained fully open to accommodate the new growth and development that is important to the Town of Blackfalds.

Attachment: Figures B.2, B.3, C.2, C.3 (September 2014 Update)



9/17/2014

September, 2014
1162 39355

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10160 - 112th Street
Edmonton AB

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Town of Blackfalds
Highway 2A Vissim Modeling

Figure No.
B.2

Title
Option 2
Level of Service

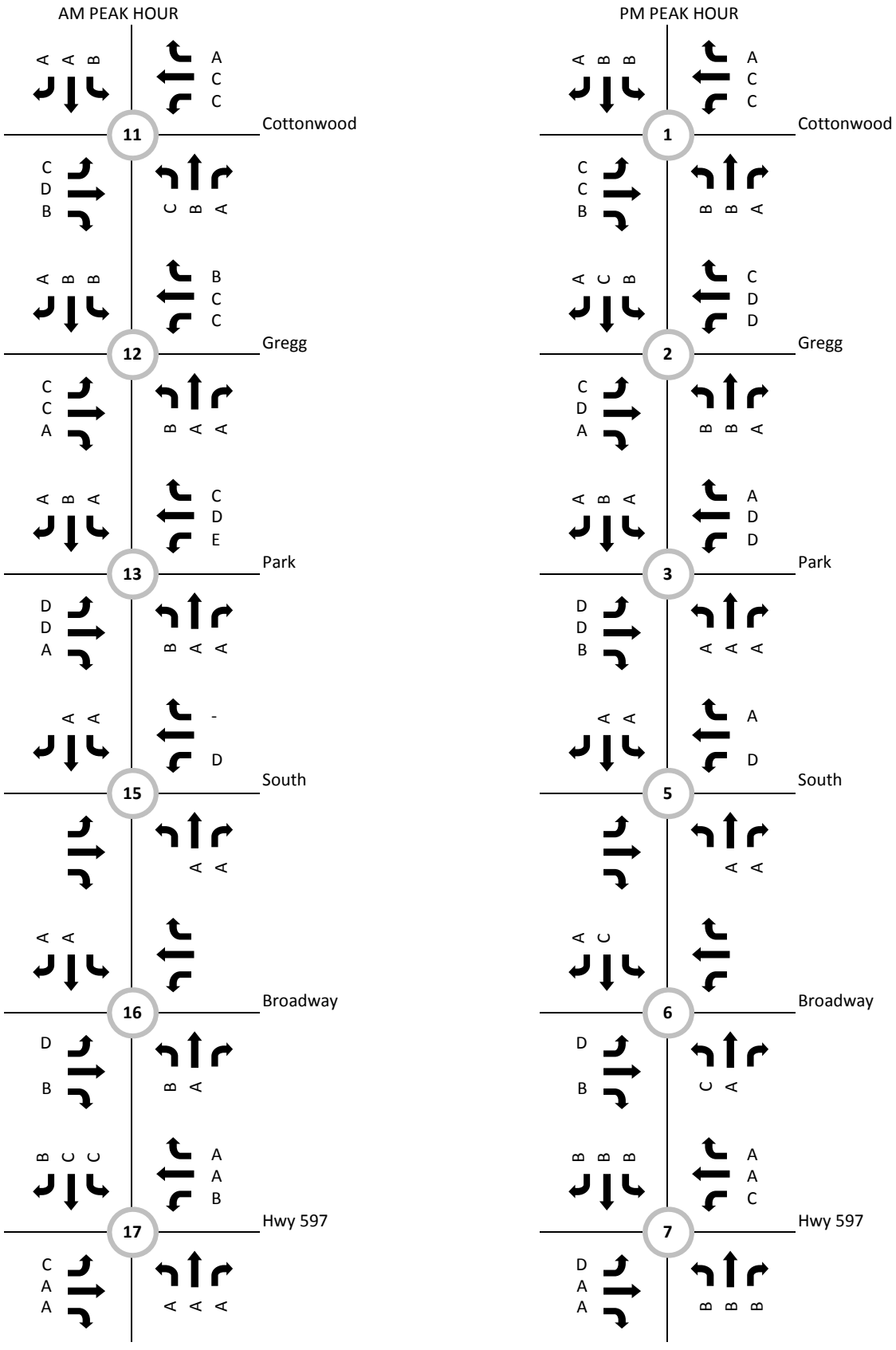

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Figure No.
B.3

Title
Option 3
Level of Service

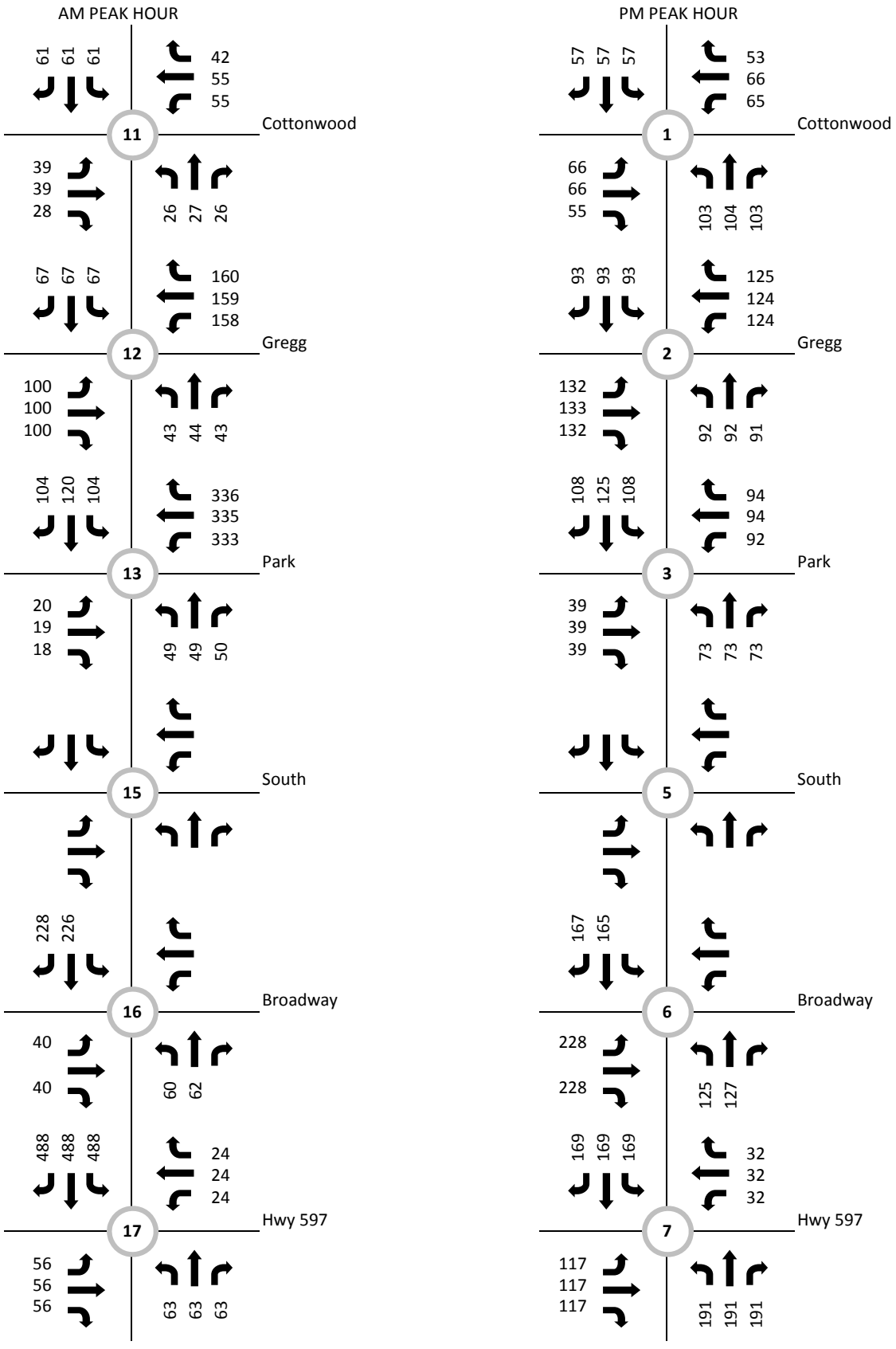

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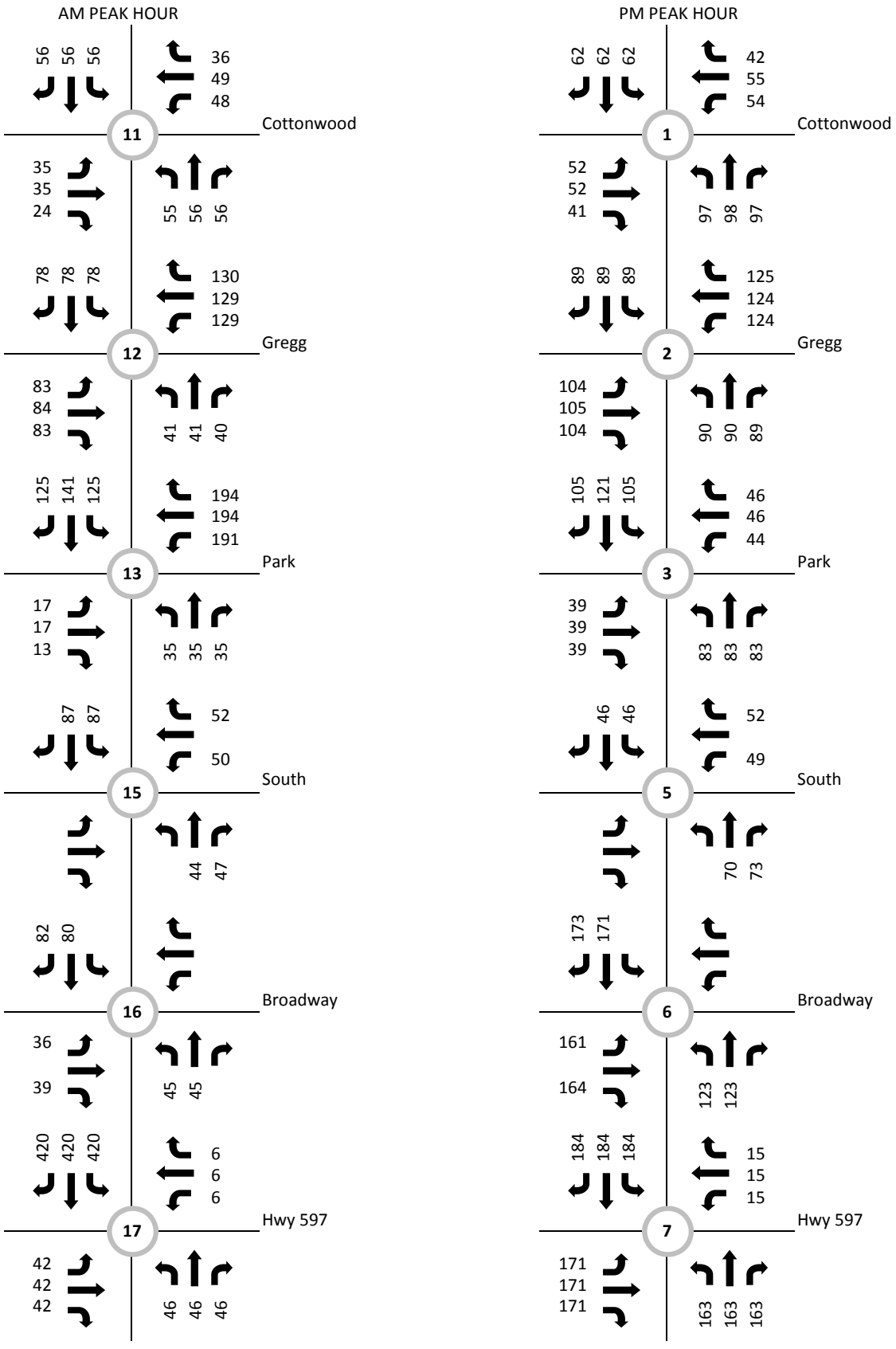
Figure No.
C.2

Title
Option 2
Maximum Queue



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Town of Blackfalds
Highway 2A Vissim Modeling

Figure No.
C.3

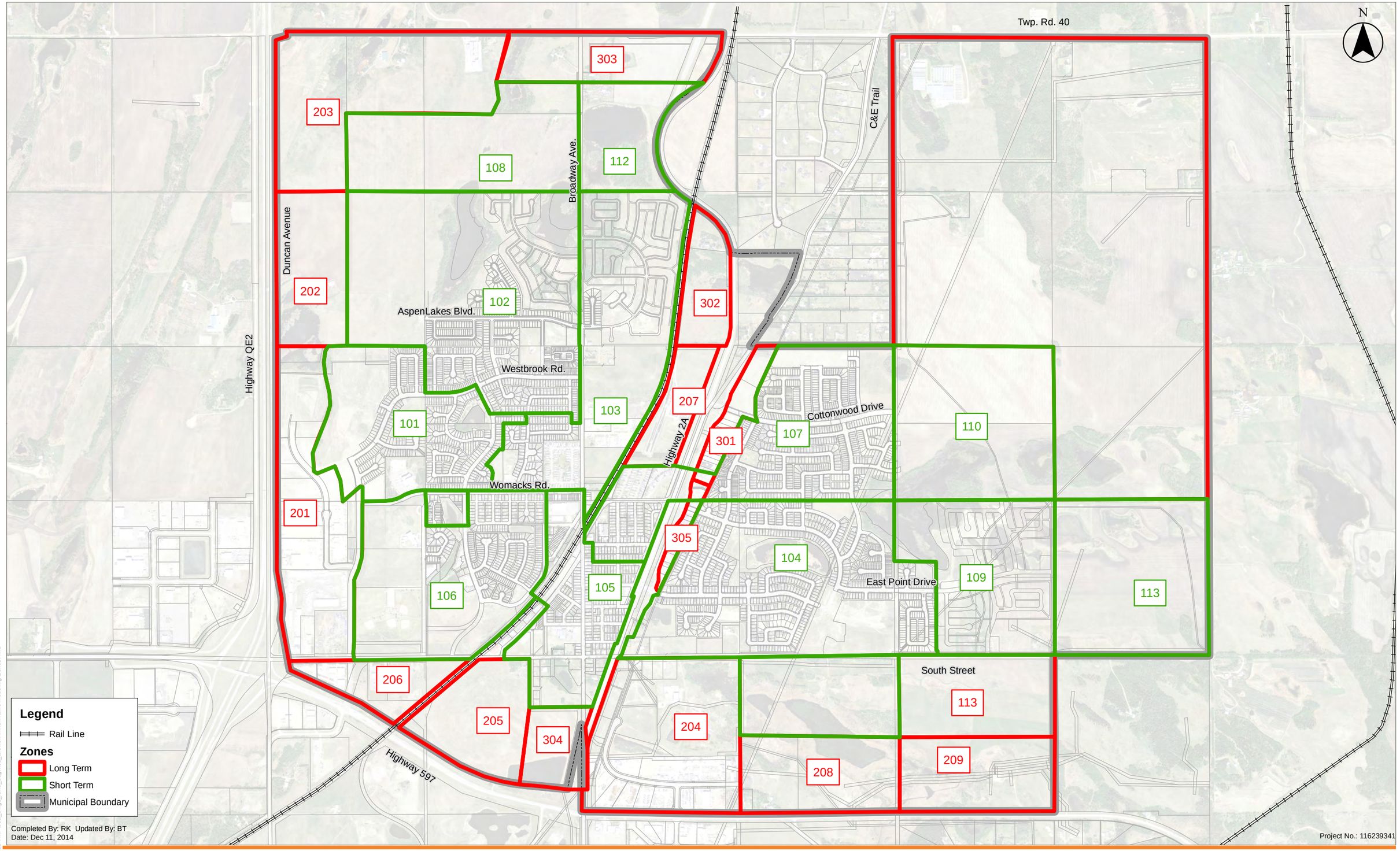
Title
Option 3
Maximum Queue

APPENDIX C TRAFFIC MODELLING PROCEDURE

Using the MDP as a guideline, the Town was divided into zones for analysis purposes as shown in Figure C.1. The projected low density residential (LDR), medium density residential (MDR), commercial, and industrial development that was modeled is shown in Table C.1. Residential development is shown in dwelling units (D.U.) and commercial and industrial developments are shown in gross hectares (ha).

The transportation model for the Town of Blackfalds combines the existing traffic generated by current developments with future traffic generated by projected developments. The modeling process can be described by the following:

1. The trip generation rates for the AM Peak Hour (Table C.2) and PM Peak Hour (Table C.3) were applied to the projected developments to estimate the traffic volumes generated by new development. All trip rates are based on ITE's *Trip Generation Manual* (9th ed.) except for highway commercial along Highway 2A, which was derived from local counts. The trip rates are shown for the three trip purposes modeled: home to work (HBW), home to non-work (HBO), and not home based (NHB)
2. The projected traffic was distributed throughout the Town and to external gates on Highway 2A and Highway 597 according to existing travel patterns and engineering judgment. The following external distribution was used for analysis:
    a. 32% to/from the north on Highway 2A.
    b. 21% to/from the west on Highway 597.
    c. 41% to/from the south on Highway 2A.
    d. 6% to/from the east on Highway 597.
3. Traffic was assigned to the proposed road network using Visum, which selects routes based on the shortest travel time. The modeled road network includes environmental capacity, number of lanes, posted speed, and prohibited turning movements.
4. Background traffic volumes were established using existing traffic counts. No growth rates were applied to background traffic.
5. The closure of the existing rail crossing at Broadway Avenue and implementation of the Gregg-Wolmacks crossing will change traffic patterns in west Blackfalds. This change has been assumed to have been implemented for all three analysis horizons. Existing traffic was reassigned assuming that 20% of the existing traffic crossing the tracks is destined for the downtown area adjacent to Broadway Avenue. The remaining traffic is assumed to use Gregg Street to access Highway 2A and developments east of Highway 2A.
6. The background and forecasted traffic volumes were combined to create volume forecasts for the three future analysis horizons.



Stantec

BLACKFALDS ALBERTA

Figure 3.1e: Traffic Modeling Zones

Transportation Master Plan

Table C.1 – Land Use Inputs

	12K Horizon				16.5K Horizon				22.5K Horizon			
Zones	LDR	MDR	Comm	Ind	LDR	MDR	Comm	Ind	LDR	MDR	Comm	Ind
101	272	52			324	60	1.6		324	60	1.6	
102	231	44			797	154.5			797	154.5		
103	318	61			473	94.5	0.7		473	94.5	0.7	
104	122				122				122			
105												
106					92				92			
107	155	30			155	122			155	122		
108									415	277		
109	277	113			628	253	0.4		628	253	0.4	
110	60				120				329	219		
111	80	88			145	97			145	97		
112									168	112		
113									489	326	1.4	
201								17.2				17.2
202												25.6
203												64.0
204												
205	60				140		8.0		140		8.0	
206			6.0				6.0				6.0	
207							10.0				15.0	
208												18.6
301			4.1				4.1				4.1	
302							3.0	4.1			3.0	4.1
303											21.4	
304			5.0				10.0				10.0	
305												
Total	1575	388	15.1	0.0	2996	781	43.6	21.3	4277	1715	71.4	129.4

Table C.2 – AM Trip Generation Rates

Land Use	Unit	Trip Rate	Split		Trip Type Split			Trip Generation Rates					
								HBW		HBO		NHB	
			In	Out	HBW	HBO	NHB	In	Out	In	Out	In	Out
Residential													
Single Family	D.U.	0.75	25%	75%	60%	40%	0%	0.11	0.34	0.08	0.23	0.00	0.00
Multi Family	D.U.	0.46	21%	79%	60%	40%	0%	0.06	0.22	0.04	0.15	0.00	0.00
Employment													
Commercial	ha	25.82	62%	38%	26%	40%	34%	4.16	2.55	6.40	3.93		
NHB retail			40%	60%								3.51	5.27
Hwy Commercial	ha	121.05	62%	38%	26%	40%	34%	19.51	11.96	30.02	18.40		
NHB retail			40%	60%								16.46	24.69
Industrial	ha	18.55	83%	17%	60%	10%	30%	9.24	1.89	1.54	0.32	4.62	0.95

Table C.3 – PM Trip Generation Rates

Land Use	Unit	Trip Rate	Split		Trip Type Split			Trip Generation Rates					
								HBW		HBO		NHB	
			In	Out	HBW	HBO	NHB	In	Out	In	Out	In	Out
Residential													
Single Family	D.U.	1.00	63%	37%	60%	40%	0%	0.38	0.22	0.25	0.15	0.00	0.00
Multi Family	D.U.	0.58	65%	35%	60%	40%	0%	0.23	0.12	0.15	0.08	0.00	0.00
Employment													
Commercial	ha	99.80	40%	60%	15%	40%	45%	5.99	8.98	15.97	23.95		
NHB retail			65%	35%								29.19	15.72
Hwy Commercial	ha	231.30	40%	60%	15%	40%	45%	13.88	20.82	37.01	55.51		
NHB retail			65%	35%								67.66	36.43
Industrial	ha	17.93	22%	78%	60%	10%	30%	2.37	8.39	0.39	1.40	1.18	4.20

APPENDIX D 12K HORIZON SYNCHRO MODELLING

Intersection	
Int Delay, s/veh	2.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Vol, veh/h	12	164	11	534	1037	62
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	-	-	-	-	-
Veh in Median Storage, #	1	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	8	8	5	5	8	8
Mvmt Flow	14	186	12	607	1178	70

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1542	624	1249	0	-	0
Stage 1	1214	-	-	-	-	-
Stage 2	328	-	-	-	-	-
Critical Hdwy	6.96	7.06	4.2	-	-	-
Critical Hdwy Stg 1	5.96	-	-	-	-	-
Critical Hdwy Stg 2	5.96	-	-	-	-	-
Follow-up Hdwy	3.58	3.38	2.25	-	-	-
Pot Cap-1 Maneuver	100	414	537	-	-	-
Stage 1	232	-	-	-	-	-
Stage 2	685	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	96	414	537	-	-	-
Mov Cap-2 Maneuver	188	-	-	-	-	-
Stage 1	232	-	-	-	-	-
Stage 2	660	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	24.2	0.4	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	537	-	383	-	-
HCM Lane V/C Ratio	0.023	-	0.522	-	-
HCM Control Delay (s)	11.9	0.2	24.2	-	-
HCM Lane LOS	B	A	C	-	-
HCM 95th %tile Q(veh)	0.1	-	2.9	-	-

Intersection	
Int Delay, s/veh	2.7

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Vol, veh/h	84	19	12	127	72	167
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	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	8	8	5	5	5	5
Mvmt Flow	95	22	14	144	82	190

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	349	177	272	0	-	0
Stage 1	177	-	-	-	-	-
Stage 2	172	-	-	-	-	-
Critical Hdwy	6.48	6.28	4.15	-	-	-
Critical Hdwy Stg 1	5.48	-	-	-	-	-
Critical Hdwy Stg 2	5.48	-	-	-	-	-
Follow-up Hdwy	3.572	3.372	2.245	-	-	-
Pot Cap-1 Maneuver	636	851	1274	-	-	-
Stage 1	839	-	-	-	-	-
Stage 2	844	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	628	851	1274	-	-	-
Mov Cap-2 Maneuver	628	-	-	-	-	-
Stage 1	839	-	-	-	-	-
Stage 2	834	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	11.6	0.7	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1274	-	660	-	-
HCM Lane V/C Ratio	0.011	-	0.177	-	-
HCM Control Delay (s)	7.9	0	11.6	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0	-	0.6	-	-

Intersection	
Int Delay, s/veh	0.8

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Vol, veh/h	4	7	70	5	5	71
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	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	5	5	5	5	5	5
Mvmt Flow	5	8	80	6	6	81

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	174	82	0	0	85	0
Stage 1	82	-	-	-	-	-
Stage 2	92	-	-	-	-	-
Critical Hdwy	6.45	6.25	-	-	4.15	-
Critical Hdwy Stg 1	5.45	-	-	-	-	-
Critical Hdwy Stg 2	5.45	-	-	-	-	-
Follow-up Hdwy	3.545	3.345	-	-	2.245	-
Pot Cap-1 Maneuver	809	969	-	-	1493	-
Stage 1	934	-	-	-	-	-
Stage 2	924	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	806	969	-	-	1493	-
Mov Cap-2 Maneuver	806	-	-	-	-	-
Stage 1	934	-	-	-	-	-
Stage 2	920	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9	0	0.5
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	903	1493	-
HCM Lane V/C Ratio	-	-	0.014	0.004	-
HCM Control Delay (s)	-	-	9	7.4	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0	0	-

Intersection	
Int Delay, s/veh	5.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Vol, veh/h	17	24	40	12	75	15
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	5	5	5	5	5	5
Mvmt Flow	19	27	45	14	85	17

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	240	52	0	0	59	0
Stage 1	52	-	-	-	-	-
Stage 2	188	-	-	-	-	-
Critical Hdwy	6.45	6.25	-	-	4.15	-
Critical Hdwy Stg 1	5.45	-	-	-	-	-
Critical Hdwy Stg 2	5.45	-	-	-	-	-
Follow-up Hdwy	3.545	3.345	-	-	2.245	-
Pot Cap-1 Maneuver	742	1007	-	-	1526	-
Stage 1	963	-	-	-	-	-
Stage 2	837	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	700	1007	-	-	1526	-
Mov Cap-2 Maneuver	700	-	-	-	-	-
Stage 1	963	-	-	-	-	-
Stage 2	790	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.5	0	6.2
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	852	1526	-
HCM Lane V/C Ratio	-	-	0.055	0.056	-
HCM Control Delay (s)	-	-	9.5	7.5	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.2	0.2	-

Intersection	
Int Delay, s/veh	5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR
Vol, veh/h	19	15	5	13	39	10	6	44	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-
Peak Hour Factor	88	88	88	88	88	88	88	88	88
Heavy Vehicles, %	8	8	8	8	8	8	5	5	5
Mvmt Flow	22	17	6	15	44	11	7	50	6

Major/Minor	Minor2			Minor1			Major1		
Conflicting Flow All	170	145	53	154	161	53	73	0	0
Stage 1	76	76	-	66	66	-	-	-	-
Stage 2	94	69	-	88	95	-	-	-	-
Critical Hdwy	7.18	6.58	6.28	7.18	6.58	6.28	4.15	-	-
Critical Hdwy Stg 1	6.18	5.58	-	6.18	5.58	-	-	-	-
Critical Hdwy Stg 2	6.18	5.58	-	6.18	5.58	-	-	-	-
Follow-up Hdwy	3.572	4.072	3.372	3.572	4.072	3.372	2.245	-	-
Pot Cap-1 Maneuver	780	735	998	799	721	998	1508	-	-
Stage 1	918	820	-	930	828	-	-	-	-
Stage 2	898	826	-	905	805	-	-	-	-
Platoon blocked, %								-	-
Mov Cap-1 Maneuver	727	725	998	773	712	998	1508	-	-
Mov Cap-2 Maneuver	727	725	-	773	712	-	-	-	-
Stage 1	913	813	-	925	824	-	-	-	-
Stage 2	836	822	-	874	799	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	10.1	10.2	0.8
HCM LOS	B	B	

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1508	-	-	752	760	1530	-	-
HCM Lane V/C Ratio	0.005	-	-	0.059	0.093	0.007	-	-
HCM Control Delay (s)	7.4	0	-	10.1	10.2	7.4	0	-
HCM Lane LOS	A	A	-	B	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.2	0.3	0	-	-

Intersection	
Int Delay, s/veh	

Movement	SBL	SBT	SBR
Vol, veh/h	10	30	34
Conflicting Peds, #/hr	0	0	0
Sign Control	Free	Free	Free
RT Channelized	-	-	None
Storage Length	-	-	-
Veh in Median Storage, #	-	0	-
Grade, %	-	0	-
Peak Hour Factor	88	88	88
Heavy Vehicles, %	5	5	5
Mvmt Flow	11	34	39

Major/Minor	Major2		
Conflicting Flow All	56	0	0
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	4.15	-	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	2.245	-	-
Pot Cap-1 Maneuver	1530	-	-
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	1530	-	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	SB
HCM Control Delay, s	1
HCM LOS	

Minor Lane/Major Mvmt

Intersection	
Int Delay, s/veh	4.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR
Vol, veh/h	3	1	38	0	1	1	35	28	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-
Peak Hour Factor	88	88	88	88	88	88	88	88	88
Heavy Vehicles, %	5	5	5	5	5	5	5	5	5
Mvmt Flow	3	1	43	0	1	1	40	32	0

Major/Minor	Minor2			Minor1			Major1		
Conflicting Flow All	157	155	44	177	161	32	50	0	0
Stage 1	44	44	-	111	111	-	-	-	-
Stage 2	113	111	-	66	50	-	-	-	-
Critical Hdwy	7.15	6.55	6.25	7.15	6.55	6.25	4.15	-	-
Critical Hdwy Stg 1	6.15	5.55	-	6.15	5.55	-	-	-	-
Critical Hdwy Stg 2	6.15	5.55	-	6.15	5.55	-	-	-	-
Follow-up Hdwy	3.545	4.045	3.345	3.545	4.045	3.345	2.245	-	-
Pot Cap-1 Maneuver	802	731	1018	779	726	1033	1537	-	-
Stage 1	963	852	-	887	798	-	-	-	-
Stage 2	885	798	-	937	847	-	-	-	-
Platoon blocked, %								-	-
Mov Cap-1 Maneuver	784	712	1018	730	707	1033	1537	-	-
Mov Cap-2 Maneuver	784	712	-	730	707	-	-	-	-
Stage 1	938	852	-	864	777	-	-	-	-
Stage 2	860	777	-	896	847	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	8.8	9.3	4.1
HCM LOS	A	A	

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1537	-	-	987	839	1561	-	-
HCM Lane V/C Ratio	0.026	-	-	0.048	0.003	-	-	-
HCM Control Delay (s)	7.4	0	-	8.8	9.3	0	-	-
HCM Lane LOS	A	A	-	A	A	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.2	0	0	-	-

Intersection	
Int Delay, s/veh	

Movement	SBL	SBT	SBR
Vol, veh/h	0	34	10
Conflicting Peds, #/hr	0	0	0
Sign Control	Free	Free	Free
RT Channelized	-	-	None
Storage Length	-	-	-
Veh in Median Storage, #	-	0	-
Grade, %	-	0	-
Peak Hour Factor	88	88	88
Heavy Vehicles, %	5	5	5
Mvmt Flow	0	39	11

Major/Minor	Major2		
Conflicting Flow All	32	0	0
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	4.15	-	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	2.245	-	-
Pot Cap-1 Maneuver	1561	-	-
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	1561	-	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	SB
HCM Control Delay, s	0
HCM LOS	

Minor Lane/Major Mvmt

Intersection	
Int Delay, s/veh	4.8

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Vol, veh/h	169	16	70	22	40	285
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	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	5	5	5	5	5	5
Mvmt Flow	192	18	80	25	45	324

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	345	52	0	0	105	0
Stage 1	92	-	-	-	-	-
Stage 2	253	-	-	-	-	-
Critical Hdwy	6.9	7	-	-	4.2	-
Critical Hdwy Stg 1	5.9	-	-	-	-	-
Critical Hdwy Stg 2	5.9	-	-	-	-	-
Follow-up Hdwy	3.55	3.35	-	-	2.25	-
Pot Cap-1 Maneuver	618	995	-	-	1462	-
Stage 1	912	-	-	-	-	-
Stage 2	757	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	595	995	-	-	1462	-
Mov Cap-2 Maneuver	595	-	-	-	-	-
Stage 1	912	-	-	-	-	-
Stage 2	728	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	13.8	0	1
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	616	1462	-
HCM Lane V/C Ratio	-	-	0.341	0.031	-
HCM Control Delay (s)	-	-	13.8	7.5	0.1
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	1.5	0.1	-

Intersection	
Int Delay, s/veh	1.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Vol, veh/h	6	10	47	89	372	28
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	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	25	25	5	5	8	8
Mvmt Flow	7	11	53	101	423	32

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	596	227	455	0	-	0
Stage 1	439	-	-	-	-	-
Stage 2	157	-	-	-	-	-
Critical Hdwy	7.3	7.4	4.2	-	-	-
Critical Hdwy Stg 1	6.3	-	-	-	-	-
Critical Hdwy Stg 2	6.3	-	-	-	-	-
Follow-up Hdwy	3.75	3.55	2.25	-	-	-
Pot Cap-1 Maneuver	385	710	1081	-	-	-
Stage 1	555	-	-	-	-	-
Stage 2	791	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	365	710	1081	-	-	-
Mov Cap-2 Maneuver	365	-	-	-	-	-
Stage 1	555	-	-	-	-	-
Stage 2	750	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	12.1	3	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1081	-	524	-	-
HCM Lane V/C Ratio	0.049	-	0.035	-	-
HCM Control Delay (s)	8.5	0.1	12.1	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0.2	-	0.1	-	-

Intersection	
Int Delay, s/veh	1.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR
Vol, veh/h	1	91	3	1	40	2	1	1	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-
Peak Hour Factor	88	88	88	88	88	88	88	88	88
Heavy Vehicles, %	5	5	5	5	5	5	5	5	5
Mvmt Flow	1	103	3	1	45	2	1	1	5

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	48	0	0	107	0	0	160	157	105
Stage 1	-	-	-	-	-	-	107	107	-
Stage 2	-	-	-	-	-	-	53	50	-
Critical Hdwy	4.15	-	-	4.15	-	-	7.15	6.55	6.25
Critical Hdwy Stg 1	-	-	-	-	-	-	6.15	5.55	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.15	5.55	-
Follow-up Hdwy	2.245	-	-	2.245	-	-	3.545	4.045	3.345
Pot Cap-1 Maneuver	1540	-	-	1465	-	-	799	730	941
Stage 1	-	-	-	-	-	-	891	801	-
Stage 2	-	-	-	-	-	-	952	847	-
Platoon blocked, %		-	-		-	-			
Mov Cap-1 Maneuver	1540	-	-	1465	-	-	791	729	941
Mov Cap-2 Maneuver	-	-	-	-	-	-	791	729	-
Stage 1	-	-	-	-	-	-	890	800	-
Stage 2	-	-	-	-	-	-	942	846	-

Approach	EB	WB	NB
HCM Control Delay, s	0.1	0.2	9.2
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	871	1540	-	-	1465	-	-	884
HCM Lane V/C Ratio	0.008	0.001	-	-	0.001	-	-	0.018
HCM Control Delay (s)	9.2	7.3	0	-	7.5	0	-	9.1
HCM Lane LOS	A	A	A	-	A	A	-	A
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	0.1

Intersection	
Int Delay, s/veh	

Movement	SBL	SBT	SBR
Vol, veh/h	6	1	7
Conflicting Peds, #/hr	0	0	0
Sign Control	Stop	Stop	Stop
RT Channelized	-	-	None
Storage Length	-	-	-
Veh in Median Storage, #	-	0	-
Grade, %	-	0	-
Peak Hour Factor	88	88	88
Heavy Vehicles, %	5	5	5
Mvmt Flow	7	1	8

Major/Minor	Minor2		
Conflicting Flow All	159	158	47
Stage 1	49	49	-
Stage 2	110	109	-
Critical Hdwy	7.15	6.55	6.25
Critical Hdwy Stg 1	6.15	5.55	-
Critical Hdwy Stg 2	6.15	5.55	-
Follow-up Hdwy	3.545	4.045	3.345
Pot Cap-1 Maneuver	800	729	1014
Stage 1	957	848	-
Stage 2	888	799	-
Platoon blocked, %			
Mov Cap-1 Maneuver	794	728	1014
Mov Cap-2 Maneuver	794	728	-
Stage 1	956	847	-
Stage 2	882	798	-

Approach	SB
HCM Control Delay, s	9.1
HCM LOS	A

Minor Lane/Major Mvmt

Intersection	
Int Delay, s/veh	6.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR
Vol, veh/h	118	84	31	22	246	37	45	23	24
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None
Storage Length	0	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-
Peak Hour Factor	88	88	88	88	88	88	88	88	88
Heavy Vehicles, %	10	10	10	8	8	8	7	7	7
Mvmt Flow	134	95	35	25	280	42	51	26	27

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	322	0	0	131	0	0	811	753	113
Stage 1	-	-	-	-	-	-	381	381	-
Stage 2	-	-	-	-	-	-	430	372	-
Critical Hdwy	4.2	-	-	4.18	-	-	7.17	6.57	6.27
Critical Hdwy Stg 1	-	-	-	-	-	-	6.17	5.57	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.17	5.57	-
Follow-up Hdwy	2.29	-	-	2.272	-	-	3.563	4.063	3.363
Pot Cap-1 Maneuver	1194	-	-	1418	-	-	292	333	926
Stage 1	-	-	-	-	-	-	631	605	-
Stage 2	-	-	-	-	-	-	594	610	-
Platoon blocked, %		-	-		-	-			
Mov Cap-1 Maneuver	1194	-	-	1418	-	-	204	289	926
Mov Cap-2 Maneuver	-	-	-	-	-	-	267	357	-
Stage 1	-	-	-	-	-	-	560	537	-
Stage 2	-	-	-	-	-	-	455	597	-

Approach	EB	WB	NB
HCM Control Delay, s	4.3	0.5	19.3
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	355	1194	-	-	1418	-	-	599
HCM Lane V/C Ratio	0.294	0.112	-	-	0.018	-	-	0.298
HCM Control Delay (s)	19.3	8.4	-	-	7.6	0	-	13.5
HCM Lane LOS	C	A	-	-	A	A	-	B
HCM 95th %tile Q(veh)	1.2	0.4	-	-	0.1	-	-	1.2

Intersection	
Int Delay, s/veh	

Movement	SBL	SBT	SBR
Vol, veh/h	18	16	123
Conflicting Peds, #/hr	0	0	0
Sign Control	Stop	Stop	Stop
RT Channelized	-	-	None
Storage Length	-	-	-
Veh in Median Storage, #	-	1	-
Grade, %	-	0	-
Peak Hour Factor	88	88	88
Heavy Vehicles, %	7	7	7
Mvmt Flow	20	18	140

Major/Minor	Minor2		
Conflicting Flow All	759	750	301
Stage 1	351	351	-
Stage 2	408	399	-
Critical Hdwy	7.17	6.57	6.27
Critical Hdwy Stg 1	6.17	5.57	-
Critical Hdwy Stg 2	6.17	5.57	-
Follow-up Hdwy	3.563	4.063	3.363
Pot Cap-1 Maneuver	317	334	727
Stage 1	655	623	-
Stage 2	610	594	-
Platoon blocked, %			
Mov Cap-1 Maneuver	261	290	727
Mov Cap-2 Maneuver	355	381	-
Stage 1	581	609	-
Stage 2	500	527	-

Approach	SB
HCM Control Delay, s	13.5
HCM LOS	B

Minor Lane/Major Mvmt

Intersection	
Int Delay, s/veh	2.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR
Vol, veh/h	50	44	0	0	218	29	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-
Peak Hour Factor	88	88	88	88	88	88	88	88	88
Heavy Vehicles, %	5	5	5	5	5	5	5	5	5
Mvmt Flow	57	50	0	0	248	33	0	0	0

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	281	0	0	50	0	0	463	445	50
Stage 1	-	-	-	-	-	-	164	164	-
Stage 2	-	-	-	-	-	-	299	281	-
Critical Hdwy	4.15	-	-	4.15	-	-	7.15	6.55	6.25
Critical Hdwy Stg 1	-	-	-	-	-	-	6.15	5.55	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.15	5.55	-
Follow-up Hdwy	2.245	-	-	2.245	-	-	3.545	4.045	3.345
Pot Cap-1 Maneuver	1264	-	-	1537	-	-	504	503	1010
Stage 1	-	-	-	-	-	-	831	757	-
Stage 2	-	-	-	-	-	-	703	673	-
Platoon blocked, %		-	-		-	-			
Mov Cap-1 Maneuver	1264	-	-	1537	-	-	442	480	1010
Mov Cap-2 Maneuver	-	-	-	-	-	-	442	480	-
Stage 1	-	-	-	-	-	-	793	722	-
Stage 2	-	-	-	-	-	-	638	673	-

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

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	1264	-	-	1537	-	-	767
HCM Lane V/C Ratio	-	0.045	-	-	-	-	-	0.092
HCM Control Delay (s)	0	8	0	-	0	-	-	10.2
HCM Lane LOS	A	A	A	-	A	-	-	B
HCM 95th %tile Q(veh)	-	0.1	-	-	0	-	-	0.3

Intersection	
Int Delay, s/veh	

Movement	SBL	SBT	SBR
Vol, veh/h	0	0	62
Conflicting Peds, #/hr	0	0	0
Sign Control	Stop	Stop	Stop
RT Channelized	-	-	None
Storage Length	-	-	-
Veh in Median Storage, #	-	0	-
Grade, %	-	0	-
Peak Hour Factor	88	88	88
Heavy Vehicles, %	5	5	5
Mvmt Flow	0	0	70

Major/Minor	Minor2		
Conflicting Flow All	428	428	264
Stage 1	264	264	-
Stage 2	164	164	-
Critical Hdwy	7.15	6.55	6.25
Critical Hdwy Stg 1	6.15	5.55	-
Critical Hdwy Stg 2	6.15	5.55	-
Follow-up Hdwy	3.545	4.045	3.345
Pot Cap-1 Maneuver	532	515	767
Stage 1	735	685	-
Stage 2	831	757	-
Platoon blocked, %			
Mov Cap-1 Maneuver	513	491	767
Mov Cap-2 Maneuver	513	491	-
Stage 1	701	685	-
Stage 2	793	722	-

Approach	SB
HCM Control Delay, s	10.2
HCM LOS	B

Minor Lane/Major Mvmt

Intersection	
Int Delay, s/veh	5.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR
Vol, veh/h	135	38	4	0	39	3	5	4	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None
Storage Length	500	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-
Peak Hour Factor	88	88	88	88	88	88	88	88	88
Heavy Vehicles, %	8	8	5	5	5	5	5	5	5
Mvmt Flow	153	43	5	0	44	3	6	5	0

Major/Minor	Minor2			Minor1			Major1		
Conflicting Flow All	158	134	116	158	248	5	230	0	0
Stage 1	118	118	-	16	16	-	-	-	-
Stage 2	40	16	-	142	232	-	-	-	-
Critical Hdwy	7.18	6.58	6.25	7.15	6.55	6.25	4.15	-	-
Critical Hdwy Stg 1	6.18	5.58	-	6.15	5.55	-	-	-	-
Critical Hdwy Stg 2	6.18	5.58	-	6.15	5.55	-	-	-	-
Follow-up Hdwy	3.572	4.072	3.345	3.545	4.045	3.345	2.245	-	-
Pot Cap-1 Maneuver	795	746	928	801	649	1069	1320	-	-
Stage 1	872	787	-	996	876	-	-	-	-
Stage 2	960	870	-	854	707	-	-	-	-
Platoon blocked, %								-	-
Mov Cap-1 Maneuver	747	742	928	758	645	1069	1320	-	-
Mov Cap-2 Maneuver	747	742	-	758	645	-	-	-	-
Stage 1	868	786	-	991	872	-	-	-	-
Stage 2	904	866	-	802	706	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	10.9	10.8	4.3
HCM LOS	B	B	

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1320	-	-	747	756	664	1565	-	-
HCM Lane V/C Ratio	0.004	-	-	0.205	0.063	0.072	0.001	-	-
HCM Control Delay (s)	7.7	0	-	11.1	10.1	10.8	7.3	0	-
HCM Lane LOS	A	A	-	B	B	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.8	0.2	0.2	0	-	-

Intersection	
Int Delay, s/veh	

Movement	SBL	SBT	SBR
Vol, veh/h	1	2	200
Conflicting Peds, #/hr	0	0	0
Sign Control	Free	Free	Free
RT Channelized	-	-	None
Storage Length	-	-	-
Veh in Median Storage, #	-	0	-
Grade, %	-	0	-
Peak Hour Factor	88	88	88
Heavy Vehicles, %	10	5	10
Mvmt Flow	1	2	227

Major/Minor	Major2		
Conflicting Flow All	5	0	0
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	4.2	-	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	2.29	-	-
Pot Cap-1 Maneuver	1565	-	-
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	1565	-	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	SB
HCM Control Delay, s	0
HCM LOS	

Minor Lane/Major Mvmt

Intersection	
Int Delay, s/veh	2.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR
Vol, veh/h	169	228	92	1	90	0	9	1	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None
Storage Length	500	-	-	0	-	-	500	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-
Peak Hour Factor	88	88	88	88	88	88	88	88	88
Heavy Vehicles, %	8	10	18	18	13	8	18	18	18
Mvmt Flow	192	259	105	1	102	0	10	1	1

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	102	0	0	364	0	0	809	800	311
Stage 1	-	-	-	-	-	-	695	695	-
Stage 2	-	-	-	-	-	-	114	105	-
Critical Hdwy	4.18	-	-	4.28	-	-	7.28	6.68	6.38
Critical Hdwy Stg 1	-	-	-	-	-	-	6.28	5.68	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.28	5.68	-
Follow-up Hdwy	2.272	-	-	2.362	-	-	3.662	4.162	3.462
Pot Cap-1 Maneuver	1453	-	-	1111	-	-	281	300	693
Stage 1	-	-	-	-	-	-	408	420	-
Stage 2	-	-	-	-	-	-	853	778	-
Platoon blocked, %		-	-		-	-			
Mov Cap-1 Maneuver	1453	-	-	1111	-	-	247	260	693
Mov Cap-2 Maneuver	-	-	-	-	-	-	302	310	-
Stage 1	-	-	-	-	-	-	354	365	-
Stage 2	-	-	-	-	-	-	836	777	-

Approach	EB	WB	NB
HCM Control Delay, s	2.7	0.1	16.6
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	302	428	1453	-	-	1111	-	-	317	937
HCM Lane V/C Ratio	0.034	0.005	0.132	-	-	0.001	-	-	0.004	0.019
HCM Control Delay (s)	17.3	13.5	7.9	-	-	8.2	-	-	16.4	8.9
HCM Lane LOS	C	B	A	-	-	A	-	-	C	A
HCM 95th %tile Q(veh)	0.1	0	0.5	-	-	0	-	-	0	0.1

Intersection	
Int Delay, s/veh	

Movement	SBL	SBT	SBR
Vol, veh/h	1	0	16
Conflicting Peds, #/hr	0	0	0
Sign Control	Stop	Stop	Stop
RT Channelized	-	-	None
Storage Length	0	-	-
Veh in Median Storage, #	-	1	-
Grade, %	-	0	-
Peak Hour Factor	88	88	88
Heavy Vehicles, %	8	8	8
Mvmt Flow	1	0	18

Major/Minor	Minor2		
Conflicting Flow All	802	853	102
Stage 1	105	105	-
Stage 2	697	748	-
Critical Hdwy	7.18	6.58	6.28
Critical Hdwy Stg 1	6.18	5.58	-
Critical Hdwy Stg 2	6.18	5.58	-
Follow-up Hdwy	3.572	4.072	3.372
Pot Cap-1 Maneuver	295	290	937
Stage 1	886	797	-
Stage 2	422	411	-
Platoon blocked, %			
Mov Cap-1 Maneuver	264	251	937
Mov Cap-2 Maneuver	317	309	-
Stage 1	769	796	-
Stage 2	364	357	-

Approach	SB
HCM Control Delay, s	9.3
HCM LOS	A

Minor Lane/Major Mvmt

Intersection	
Int Delay, s/veh	1.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	28	483	228	1	4	64
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	1	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	5	5	5	5	5	5
Mvmt Flow	32	549	259	1	5	73

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	260	0	-	0	598	130
Stage 1	-	-	-	-	260	-
Stage 2	-	-	-	-	338	-
Critical Hdwy	4.2	-	-	-	6.9	7
Critical Hdwy Stg 1	-	-	-	-	5.9	-
Critical Hdwy Stg 2	-	-	-	-	5.9	-
Follow-up Hdwy	2.25	-	-	-	3.55	3.35
Pot Cap-1 Maneuver	1280	-	-	-	427	886
Stage 1	-	-	-	-	751	-
Stage 2	-	-	-	-	685	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1280	-	-	-	412	886
Mov Cap-2 Maneuver	-	-	-	-	507	-
Stage 1	-	-	-	-	751	-
Stage 2	-	-	-	-	660	-

Approach	EB	WB	SB
HCM Control Delay, s	0.5	0	9.7
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1280	-	-	-	849
HCM Lane V/C Ratio	0.025	-	-	-	0.091
HCM Control Delay (s)	7.9	0.1	-	-	9.7
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0.1	-	-	-	0.3

Intersection	
Int Delay, s/veh	2.9

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Vol, veh/h	645	108	131	254	40	99
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	500	500	-	-	0
Veh in Median Storage, #	0	-	-	0	1	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	5	5	5	5	5	5
Mvmt Flow	733	123	149	289	45	112

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	733	0	1175	733
Stage 1	-	-	-	-	733	-
Stage 2	-	-	-	-	442	-
Critical Hdwy	-	-	4.15	-	6.675	6.275
Critical Hdwy Stg 1	-	-	-	-	5.475	-
Critical Hdwy Stg 2	-	-	-	-	5.875	-
Follow-up Hdwy	-	-	2.245	-	3.5475	3.3475
Pot Cap-1 Maneuver	-	-	858	-	194	413
Stage 1	-	-	-	-	467	-
Stage 2	-	-	-	-	609	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	858	-	160	413
Mov Cap-2 Maneuver	-	-	-	-	294	-
Stage 1	-	-	-	-	467	-
Stage 2	-	-	-	-	503	-

Approach	EB	WB	NB
HCM Control Delay, s	0	3.4	17.6
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	294	413	-	-	858	-
HCM Lane V/C Ratio	0.155	0.272	-	-	0.174	-
HCM Control Delay (s)	19.5	16.9	-	-	10.1	-
HCM Lane LOS	C	C	-	-	B	-
HCM 95th %tile Q(veh)	0.5	1.1	-	-	0.6	-

Intersection	
Intersection Delay, s/veh	11
Intersection LOS	B

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	1	3	6	0	151	16	11	0	46	99	72
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles, %	5	18	18	18	5	5	5	5	5	5	5	5
Mvmt Flow	0	1	3	7	0	172	18	12	0	52	112	82
Number of Lanes	0	0	1	0	0	0	1	1	0	0	2	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	2	1	2
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	2	2	1
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	2	2	2
HCM Control Delay	9.7	12.7	9.8
HCM LOS	A	B	A

Lane	NBLn1	NBLn2	EBLn1	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	48%	0%	10%	90%	0%	8%	0%
Vol Thru, %	52%	41%	30%	10%	0%	92%	98%
Vol Right, %	0%	59%	60%	0%	100%	0%	2%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	96	122	10	167	11	178	167
LT Vol	50	50	3	16	0	164	164
Through Vol	0	72	6	0	11	0	3
RT Vol	46	0	1	151	0	14	0
Lane Flow Rate	109	138	11	190	12	202	190
Geometry Grp	7	7	6	7	7	7	7
Degree of Util (X)	0.183	0.207	0.021	0.352	0.019	0.314	0.292
Departure Headway (Hd)	6.065	5.401	6.514	6.681	5.517	5.699	5.646
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	594	667	551	541	651	635	640
Service Time	3.78	3.117	4.534	4.392	3.228	3.399	3.346
HCM Lane V/C Ratio	0.184	0.207	0.02	0.351	0.018	0.318	0.297
HCM Control Delay	10.1	9.5	9.7	13	8.3	11	10.7
HCM Lane LOS	B	A	A	B	A	B	B
HCM 95th-tile Q	0.7	0.8	0.1	1.6	0.1	1.3	1.2

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Vol, veh/h	0	14	328	3
Peak Hour Factor	0.88	0.88	0.88	0.88
Heavy Vehicles, %	5	5	5	5
Mvmt Flow	0	16	373	3
Number of Lanes	0	0	2	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	2
Conflicting Approach Left	WB
Conflicting Lanes Left	2
Conflicting Approach Right	EB
Conflicting Lanes Right	1
HCM Control Delay	10.9
HCM LOS	B

Lane

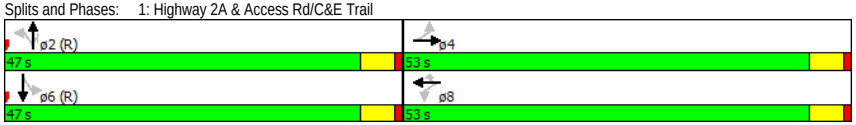
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	291	1	180	2	414	156	96	367	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		50.0	0.0		50.0	0.0		50.0	0.0		50.0
Storage Lanes	1		0	1		1	0		1	0		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95	0.95
Frt						0.850			0.850			
Flt Protected				0.950							0.990	
Satd. Flow (prot)	1830	1830	0	1659	1830	1484	0	3380	1484	0	3333	0
Flt Permitted				0.757				0.954			0.751	
Satd. Flow (perm)	1830	1830	0	1322	1830	1484	0	3225	1484	0	2528	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						205			177			
Link Speed (k/h)		50			50			80			80	
Link Distance (m)		55.8			82.3			547.5			300.8	
Travel Time (s)		4.0			5.9			24.6			13.5	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles (%)	5%	5%	5%	10%	5%	10%	5%	8%	10%	10%	8%	5%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	331	1	205	0	472	177	0	526	0
Turn Type	Perm			Perm	NA	Perm	Perm	NA	Perm	Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8		8	2		2	6		
Detector Phase	4	4		8	8	8	2	2	2	6	6	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0	10.0	20.0	20.0	20.0	20.0	20.0	
Minimum Split (s)	30.0	30.0		30.0	30.0	30.0	25.0	25.0	25.0	25.0	25.0	
Total Split (s)	53.0	53.0		53.0	53.0	53.0	47.0	47.0	47.0	47.0	47.0	
Total Split (%)	53.0%	53.0%		53.0%	53.0%	53.0%	47.0%	47.0%	47.0%	47.0%	47.0%	
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0		0.0	0.0		0.0	
Total Lost Time (s)	5.0	5.0		5.0	5.0	5.0		5.0	5.0		5.0	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	None	None		None	None	None	C-Min	C-Min	C-Min	C-Min	C-Min	
Act Effct Green (s)				32.1	32.1	32.1		57.9	57.9		57.9	
Actuated g/C Ratio				0.32	0.32	0.32		0.58	0.58		0.58	
v/c Ratio				0.78	0.00	0.33		0.25	0.19		0.36	
Control Delay				42.8	18.0	4.2		4.5	1.2		13.7	
Queue Delay				0.0	0.0	0.0		0.0	0.0		0.0	
Total Delay				42.8	18.0	4.2		4.5	1.2		13.7	
LOS				D	B	A		A	A		B	
Approach Delay					28.0			3.6			13.7	
Approach LOS					C			A			B	
Queue Length 50th (m)				57.4	0.1	0.0		10.1	0.0		26.8	
Queue Length 95th (m)				72.3	1.1	11.3		16.9	4.2		47.6	
Internal Link Dist (m)		31.8			58.3			523.5			276.8	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Bay Length (m)						50.0			50.0			
Base Capacity (vph)				634	878	818		1867	933		1463	
Starvation Cap Reductn				0	0	0		0	0		0	
Spillback Cap Reductn				0	0	0		0	0		0	
Storage Cap Reductn				0	0	0		0	0		0	
Reduced v/c Ratio				0.52	0.00	0.25		0.25	0.19		0.36	

Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 91 (91%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 55
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.78
Intersection Signal Delay: 14.4 Intersection LOS: B
Intersection Capacity Utilization 62.0% ICU Level of Service B
Analysis Period (min) 15

Splits and Phases: 1: Highway 2A & Access Rd/C&E Trail

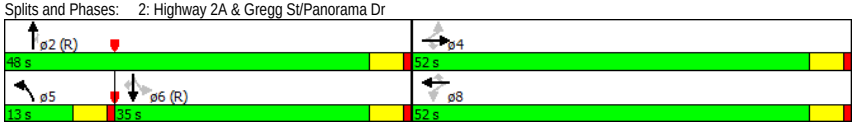


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	221	177	119	252	148	24	114	280	103	18	428	136
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		50.0	0.0		50.0	80.0		50.0	50.0		50.0
Storage Lanes	1		1	1		1	2		1	1		1
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00	1.00	0.97	0.95	1.00	1.00	0.95	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1738	3476	1555	1738	1830	1555	3372	3476	1555	1738	3476	1555
Flt Permitted	0.610			0.626			0.950			0.559		
Satd. Flow (perm)	1116	3476	1555	1145	1830	1555	3372	3476	1555	1023	3476	1555
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			135			76			117			155
Link Speed (k/h)		50			50			60			60	
Link Distance (m)		48.3			64.5			472.7			547.5	
Travel Time (s)		3.5			4.6			28.4			32.9	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Shared Lane Traffic (%)												
Lane Group Flow (vph)	251	201	135	286	168	27	130	318	117	20	486	155
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Prot	NA	Perm	Perm	NA	Perm
Protected Phases		4			8		5	2			6	
Permitted Phases	4		4	8		8			2	6		6
Detector Phase	4	4	4	8	8	8	5	2	2	6	6	6
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	8.0	20.0	20.0	20.0	20.0	20.0
Minimum Split (s)	31.0	31.0	31.0	31.0	31.0	31.0	13.0	31.0	31.0	31.0	31.0	31.0
Total Split (s)	52.0	52.0	52.0	52.0	52.0	52.0	13.0	48.0	48.0	35.0	35.0	35.0
Total Split (%)	52.0%	52.0%	52.0%	52.0%	52.0%	52.0%	13.0%	48.0%	48.0%	35.0%	35.0%	35.0%
Yellow 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
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag							Lead			Lag	Lag	Lag
Lead-Lag Optimize?							Yes			Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Min	C-Min	C-Min	C-Min	C-Min
Act Effct Green (s)	31.8	31.8	31.8	31.8	31.8	31.8	9.5	58.2	58.2	43.8	43.8	43.8
Actuated g/C Ratio	0.32	0.32	0.32	0.32	0.32	0.32	0.10	0.58	0.58	0.44	0.44	0.44
v/c Ratio	0.71	0.18	0.23	0.79	0.29	0.05	0.41	0.16	0.12	0.04	0.32	0.20
Control Delay	40.0	23.3	4.3	42.2	22.9	0.2	40.6	21.2	14.1	16.7	16.2	4.0
Queue Delay	0.0	0.0	0.0	1.7	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	40.0	23.3	4.3	43.8	23.4	0.2	40.6	21.2	14.1	16.7	16.2	4.0
LOS	D	C	A	D	C	A	D	C	B	B	B	A
Approach Delay		26.0			34.2			24.2			13.4	
Approach LOS		C			C			C			B	
Queue Length 50th (m)	42.2	14.6	0.0	44.6	21.8	0.0	12.5	18.8	0.0	2.2	30.4	4.5
Queue Length 95th (m)	56.1	18.3	9.6	61.5	27.5	0.0	0.0	45.4	24.5	m5.6	40.3	8.8
Internal Link Dist (m)		24.3			40.5			448.7			523.5	
Turn Bay Length (m)			50.0			50.0	80.0		50.0	50.0		50.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Base Capacity (vph)	524	1633	802	538	860	771	318	2023	954	448	1523	768
Starvation Cap Reductn	0	0	0	122	398	0	0	0	0	0	0	0
Spillback Cap Reductn	0	352	0	0	0	0	0	0	11	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.48	0.16	0.17	0.69	0.36	0.04	0.41	0.16	0.12	0.04	0.32	0.20

Intersection Summary		
Area Type:	Other	
Cycle Length: 100		
Actuated Cycle Length: 100		
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Green, Master Intersection		
Natural Cycle: 75		
Control Type: Actuated-Coordinated		
Maximum v/c Ratio: 0.79		
Intersection Signal Delay: 23.7	Intersection LOS: C	
Intersection Capacity Utilization 72.3%	ICU Level of Service C	
Analysis Period (min) 15		
m Volume for 95th percentile queue is metered by upstream signal.		

Splits and Phases: 2: Highway 2A & Gregg St/Panorama Dr



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	11	37	101	200	37	16	13	465	107	6	813	19
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	0.0		0.0	0.0		50.0
Storage Lanes	0		1	0		1	0		1	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850		0.997	
Flt Protected		0.989			0.960			0.999		0.950		
Satd. Flow (prot)	0	1810	1555	0	1756	1555	0	3379	1555	1738	1824	0
Flt Permitted		0.915			0.722			0.923		0.438		
Satd. Flow (perm)	0	1674	1555	0	1321	1555	0	3122	1555	801	1824	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			115			22			122		2	
Link Speed (k/h)		50			50			60			60	
Link Distance (m)		54.4			44.4			100.1			472.7	
Travel Time (s)		3.9			3.2			6.0			28.4	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%	5%	8%	5%	5%	5%	5%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	54	115	0	269	18	0	543	122	7	946	0
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2		2	6		
Detector Phase	4	4	4	8	8	8	2	2	2	6	6	
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	20.0	20.0	20.0	20.0	20.0	
Minimum Split (s)	31.0	31.0	31.0	31.0	31.0	31.0	27.0	27.0	27.0	27.0	27.0	
Total Split (s)	37.0	37.0	37.0	37.0	37.0	37.0	63.0	63.0	63.0	63.0	63.0	
Total Split (%)	37.0%	37.0%	37.0%	37.0%	37.0%	37.0%	63.0%	63.0%	63.0%	63.0%	63.0%	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)		0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	
Total Lost Time (s)		5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	None	None	None	None	None	None	C-Min	C-Min	C-Min	C-Min	C-Min	
Act Effct Green (s)		25.0	25.0		25.0	25.0		65.0	65.0	65.0	65.0	
Actuated g/C Ratio		0.25	0.25		0.25	0.25		0.65	0.65	0.65	0.65	
v/c Ratio		0.13	0.24		0.82	0.04		0.27	0.12	0.01	0.80	
Control Delay		27.4	6.2		54.1	8.9		8.6	2.0	9.2	20.2	
Queue Delay		0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	
Total Delay		27.4	6.2		54.1	8.9		8.6	2.0	9.2	20.2	
LOS		C	A		D	A		A	A	A	C	
Approach Delay		12.9			51.3			7.4			20.1	
Approach LOS		B			D			A			C	
Queue Length 50th (m)		8.1	0.1		48.7	0.0		21.7	0.0	0.5	178.8	
Queue Length 95th (m)		m15.4	m10.4		69.6	4.2		34.7	6.5	m1.6	#239.8	
Internal Link Dist (m)		30.4			20.4			76.1			448.7	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Bay Length (m)												
Base Capacity (vph)		535	575		422	512		2029	1053	520	1186	
Starvation Cap Reductn		0	0		0	0		0	0	0	0	
Spillback Cap Reductn		0	0		0	0		0	0	0	0	
Storage Cap Reductn		0	0		0	0		0	0	0	0	
Reduced v/c Ratio		0.10	0.20		0.64	0.04		0.27	0.12	0.01	0.80	

Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 80
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.82
Intersection Signal Delay: 19.8 Intersection LOS: B
Intersection Capacity Utilization 81.4% ICU Level of Service D
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 3: Highway 2A & ParkSt/Park St

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	184	21	512	66	15	1172
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	0.0		80.0	0.0	
Storage Lanes	1	1		0	0	
Taper Length (m)	2.5				2.5	
Lane Util. Factor	1.00	1.00	0.95	0.95	0.95	0.95
Frt		0.850	0.983			
Flt Protected	0.950					0.999
Satd. Flow (prot)	1521	1361	3228	0	0	3467
Flt Permitted	0.950					0.945
Satd. Flow (perm)	1521	1361	3228	0	0	3279
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		24	30			
Link Speed (k/h)	50		60			60
Link Distance (m)	50.6		327.8			219.5
Travel Time (s)	3.6		19.7			13.2
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles (%)	20%	20%	10%	20%	20%	5%
Shared Lane Traffic (%)						
Lane Group Flow (vph)	209	24	657	0	0	1349
Turn Type	Prot	Perm	NA		Perm	NA
Protected Phases	8		2			6
Permitted Phases		8			6	
Detector Phase	8	8	2		6	6
Switch Phase						
Minimum Initial (s)	8.0	8.0	20.0		20.0	20.0
Minimum Split (s)	27.0	27.0	25.0		25.0	25.0
Total Split (s)	28.0	28.0	72.0		72.0	72.0
Total Split (%)	28.0%	28.0%	72.0%		72.0%	72.0%
Yellow Time (s)	4.0	4.0	4.0		4.0	4.0
All-Red Time (s)	1.0	1.0	1.0		1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0			0.0
Total Lost Time (s)	5.0	5.0	5.0			5.0
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	None	None	Min		Min	Min
Act Effct Green (s)	14.0	14.0	34.9			34.9
Actuated g/C Ratio	0.23	0.23	0.58			0.58
v/c Ratio	0.59	0.07	0.35			0.70
Control Delay	30.0	10.4	6.8			11.3
Queue Delay	0.0	0.0	0.0			0.0
Total Delay	30.0	10.4	6.8			11.3
LOS	C	B	A			B
Approach Delay	28.0		6.8			11.3
Approach LOS	C		A			B
Queue Length 50th (m)	19.4	0.0	15.1			44.4
Queue Length 95th (m)	47.7	5.4	31.0			85.3
Internal Link Dist (m)	26.6		303.8			195.5

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Turn Bay Length (m)						
Base Capacity (vph)	629	577	3080			3127
Starvation Cap Reductn	0	0	0			0
Spillback Cap Reductn	0	0	0			0
Storage Cap Reductn	0	0	0			0
Reduced v/c Ratio	0.33	0.04	0.21			0.43

Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 59.7			
Natural Cycle: 60			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.70			
Intersection Signal Delay: 11.7		Intersection LOS: B	
Intersection Capacity Utilization 61.5%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 5: Highway 2A & South St

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	60	78	96	567	1486	95
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	0.0	50.0			80.0
Storage Lanes	1	1	1			0
Taper Length (m)	2.5		2.5			
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95
Frt		0.850			0.991	
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1738	1555	1738	3476	3445	0
Flt Permitted	0.950		0.059			
Satd. Flow (perm)	1738	1555	108	3476	3445	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		89			9	
Link Speed (k/h)	50			60	60	
Link Distance (m)	79.1			148.6	327.8	
Travel Time (s)	5.7			8.9	19.7	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Shared Lane Traffic (%)						
Lane Group Flow (vph)	68	89	109	644	1797	0
Turn Type	Prot	Perm	pm+pt	NA	NA	
Protected Phases	4		5	2	6	
Permitted Phases		4	2			
Detector Phase	4	4	5	2	6	
Switch Phase						
Minimum Initial (s)	10.0	10.0	8.0	20.0	20.0	
Minimum Split (s)	31.0	31.0	13.0	25.0	25.0	
Total Split (s)	31.0	31.0	13.0	69.0	56.0	
Total Split (%)	31.0%	31.0%	13.0%	69.0%	56.0%	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?			Yes		Yes	
Recall Mode	None	None	None	C-Min	C-Min	
Act Effct Green (s)	13.3	13.3	79.7	80.7	66.7	
Actuated g/C Ratio	0.13	0.13	0.80	0.81	0.67	
v/c Ratio	0.29	0.31	0.50	0.23	0.78	
Control Delay	40.4	10.3	20.6	3.9	17.3	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay	40.4	10.3	20.6	3.9	17.3	
LOS	D	B	C	A	B	
Approach Delay	23.4			6.3	17.3	
Approach LOS	C			A	B	
Queue Length 50th (m)	12.6	0.0	3.6	12.3	112.3	
Queue Length 95th (m)	20.4	10.7	23.7	33.9	#228.3	
Internal Link Dist (m)	55.1			124.6	303.8	
Turn Bay Length (m)			50.0			

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Base Capacity (vph)	451	470	216	2803	2299	
Starvation Cap Reductn	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	
Reduced v/c Ratio	0.15	0.19	0.50	0.23	0.78	

Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Green
Natural Cycle: 100
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.78
Intersection Signal Delay: 14.6 Intersection LOS: B
Intersection Capacity Utilization 71.6% ICU Level of Service C
Analysis Period (min) 15
\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 6: Highway 2A & Broadway Ave

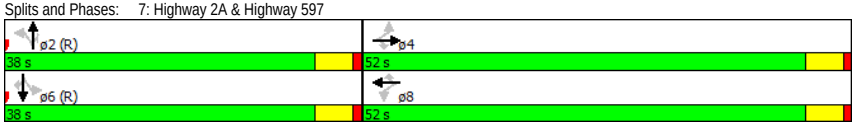
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	29	57	201	103	87	64	57	355	106	146	1281	85
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		50.0	0.0		50.0	50.0		50.0	50.0		50.0
Storage Lanes	0		1	0		1	1		1	1		1
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected		0.983			0.974		0.950			0.950		
Satd. Flow (prot)	0	1712	1512	0	1697	1555	1690	1779	1512	1738	1830	1555
Flt Permitted		0.840			0.778		0.067			0.493		
Satd. Flow (perm)	0	1463	1512	0	1355	1555	119	1779	1512	902	1830	1555
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			24			73			120			32
Link Speed (k/h)		50			50			60			60	
Link Distance (m)		67.4			78.0			157.9			368.2	
Travel Time (s)		4.9			5.6			9.5			22.1	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles (%)	5%	13%	8%	8%	13%	5%	8%	8%	8%	5%	5%	5%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	98	228	0	216	73	65	403	120	166	1456	97
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2		2	6		6
Detector Phase	4	4	4	8	8	8	2	2	2	6	6	6
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	20.0	20.0	20.0	20.0	20.0	20.0
Minimum Split (s)	24.0	24.0	24.0	24.0	24.0	24.0	26.0	26.0	26.0	26.0	26.0	26.0
Total Split (s)	52.0	52.0	52.0	52.0	52.0	52.0	38.0	38.0	38.0	38.0	38.0	38.0
Total Split (%)	57.8%	57.8%	57.8%	57.8%	57.8%	57.8%	42.2%	42.2%	42.2%	42.2%	42.2%	42.2%
Yellow 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
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	None	None	None	None	None	None	C-Max	C-Max	C-Max	C-Max	C-Max	C-Max
Act Effct Green (s)		20.1	20.1		20.1	20.1	59.9	59.9	59.9	59.9	59.9	59.9
Actuated g/C Ratio		0.22	0.22		0.22	0.22	0.67	0.67	0.67	0.67	0.67	0.67
v/c Ratio		0.30	0.64		0.72	0.18	0.82	0.34	0.11	0.28	1.20	0.09
Control Delay		29.5	35.7		44.8	7.0	86.7	8.6	1.9	9.1	115.4	5.2
Queue Delay		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay		29.5	35.7		44.8	7.0	86.7	8.6	1.9	9.1	115.4	5.2
LOS		C	D		D	A	F	A	A	A	F	A
Approach Delay		33.8			35.2			15.9			98.9	
Approach LOS		C			D			B			F	
Queue Length 50th (m)		14.2	32.1		34.7	0.0	7.3	26.4	0.0	10.3	~307.4	3.5
Queue Length 95th (m)		23.6	47.1		50.0	8.6	#23.9	53.2	6.3	25.7	#402.7	10.8
Internal Link Dist (m)		43.4			54.0			133.9			344.2	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Bay Length (m)			50.0			50.0	50.0		50.0	50.0		50.0
Base Capacity (vph)		764	801		707	846	79	1185	1047	600	1218	1046
Starvation Cap Reductn		0	0		0	0	0	0	0	0	0	0
Spillback Cap Reductn		0	0		0	0	0	0	0	0	0	0
Storage Cap Reductn		0	0		0	0	0	0	0	0	0	0
Reduced v/c Ratio		0.13	0.28		0.31	0.09	0.82	0.34	0.11	0.28	1.20	0.09

Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 120
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.20
Intersection Signal Delay: 68.6 Intersection LOS: E
Intersection Capacity Utilization 113.5% ICU Level of Service H
Analysis Period (min) 15
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 7: Highway 2A & Highway 597



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	14	232	5	16	105	173	5	5	58	462	5	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	50.0		0.0	0.0		0.0	50.0		0.0	50.0		0.0
Storage Lanes	0		0	0		1	0		0	0		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.997				0.850		0.886			0.996	
Flt Protected		0.997			0.993			0.996			0.954	
Satd. Flow (prot)	0	1819	0	0	1817	1555	0	1615	0	0	1738	0
Flt Permitted		0.979			0.947			0.967			0.678	
Satd. Flow (perm)	0	1786	0	0	1733	1555	0	1568	0	0	1236	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		1				197		66			4	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		860.4			145.8			110.5			601.0	
Travel Time (s)		61.9			10.5			8.0			43.3	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	286	0	0	137	197	0	78	0	0	548	0
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8		8	2			6		
Detector Phase	4	4		8	8	8	2	2		6	6	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0	10.0	20.0	20.0		20.0	20.0	
Minimum Split (s)	23.0	23.0		23.0	23.0	23.0	25.0	25.0		25.0	25.0	
Total Split (s)	24.0	24.0		24.0	24.0	24.0	56.0	56.0		56.0	56.0	
Total Split (%)	30.0%	30.0%		30.0%	30.0%	30.0%	70.0%	70.0%		70.0%	70.0%	
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0	0.0		0.0			0.0	
Total Lost Time (s)		5.0			5.0	5.0		5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	Min	Min		Min	Min	Min	None	None		None	None	
Act Effct Green (s)		14.3			14.3	14.3		31.7			31.7	
Actuated g/C Ratio		0.25			0.25	0.25		0.56			0.56	
v/c Ratio		0.63			0.31	0.36		0.09			0.79	
Control Delay		28.7			22.7	6.3		2.4			19.6	
Queue Delay		0.0			0.0	0.0		0.0			0.0	
Total Delay		28.7			22.7	6.3		2.4			19.6	
LOS		C			C	A		A			B	
Approach Delay		28.7			13.1			2.4			19.6	
Approach LOS		C			B			A			B	
Queue Length 50th (m)		24.6			10.8	0.0		0.5			36.9	
Queue Length 95th (m)		62.8			31.4	14.2		4.6			80.2	
Internal Link Dist (m)		836.4			121.8			86.5			577.0	
Turn Bay Length (m)												

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Base Capacity (vph)		640			621	684		1370			1073	
Starvation Cap Reductn		0			0	0		0			0	
Spillback Cap Reductn		0			0	0		0			0	
Storage Cap Reductn		0			0	0		0			0	
Reduced v/c Ratio		0.45			0.22	0.29		0.06			0.51	

Intersection Summary			
Area Type:	Other		
Cycle Length: 80			
Actuated Cycle Length: 56.7			
Natural Cycle: 60			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.79			
Intersection Signal Delay: 18.8		Intersection LOS: B	
Intersection Capacity Utilization 61.7%		ICU Level of Service B	
Analysis Period (min) 15			

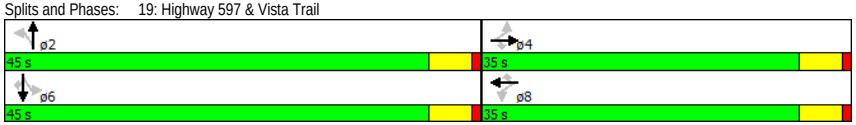
Splits and Phases: 9: Womacks Road & Broadway Ave

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	181	372	11	7	282	41	5	1	6	133	9	499
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	50.0		50.0	50.0		50.0	0.0		0.0	0.0		0.0
Storage Lanes	1		1	1		1	0		0	0		1
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850		0.932				0.850
Flt Protected	0.950			0.950				0.979			0.955	
Satd. Flow (prot)	1690	3230	1555	1738	3174	1512	0	1669	0	0	1702	1512
Flt Permitted	0.558			0.505				0.906			0.729	
Satd. Flow (perm)	993	3230	1555	924	3174	1512	0	1545	0	0	1299	1512
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			27			47		7				361
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		267.0			499.4			80.3			111.2	
Travel Time (s)		19.2			36.0			5.8			8.0	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles (%)	8%	13%	5%	5%	15%	8%	5%	5%	5%	8%	5%	8%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	206	423	12	8	320	47	0	14	0	0	161	567
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA		Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2			6		6
Detector Phase	4	4	4	8	8	8	2	2		6	6	6
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0		10.0	10.0	10.0
Minimum Split (s)	23.0	23.0	23.0	23.0	23.0	23.0	34.0	34.0		34.0	34.0	34.0
Total Split (s)	35.0	35.0	35.0	35.0	35.0	35.0	45.0	45.0		45.0	45.0	45.0
Total Split (%)	43.8%	43.8%	43.8%	43.8%	43.8%	43.8%	56.3%	56.3%		56.3%	56.3%	56.3%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0		1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0		0.0			0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0		5.0			5.0	5.0
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	Min	Min	Min	Min	Min	Min	None	None		None	None	None
Act Effct Green (s)	16.6	16.6	16.6	16.6	16.6	16.6		17.2			17.2	17.2
Actuated g/C Ratio	0.37	0.37	0.37	0.37	0.37	0.37		0.38			0.38	0.38
v/c Ratio	0.56	0.36	0.02	0.02	0.27	0.08		0.02			0.32	0.71
Control Delay	19.9	12.1	2.6	11.7	11.6	4.9		7.8			12.5	10.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0			0.0	0.0
Total Delay	19.9	12.1	2.6	11.7	11.6	4.9		7.8			12.5	10.1
LOS	B	B	A	B	B	A		A			B	B
Approach Delay		14.4			10.8			7.8			10.7	
Approach LOS		B			B			A			B	
Queue Length 50th (m)	10.2	10.1	0.0	0.3	7.3	0.0		0.3			7.1	9.2
Queue Length 95th (m)	39.1	29.9	1.6	2.9	22.9	5.4		3.2			24.4	44.2
Internal Link Dist (m)		243.0			475.4			56.3			87.2	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Bay Length (m)	50.0		50.0	50.0		50.0						
Base Capacity (vph)	741	2411	1168	690	2370	1141		1336			1122	1355
Starvation Cap Reductn	0	0	0	0	0	0		0			0	0
Spillback Cap Reductn	0	0	0	0	0	0		0			0	0
Storage Cap Reductn	0	0	0	0	0	0		0			0	0
Reduced v/c Ratio	0.28	0.18	0.01	0.01	0.14	0.04		0.01			0.14	0.42

Intersection Summary			
Area Type:	Other		
Cycle Length: 80			
Actuated Cycle Length: 45			
Natural Cycle: 60			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.71			
Intersection Signal Delay: 12.0		Intersection LOS: B	
Intersection Capacity Utilization 60.1%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 19: Highway 597 & Vista Trail

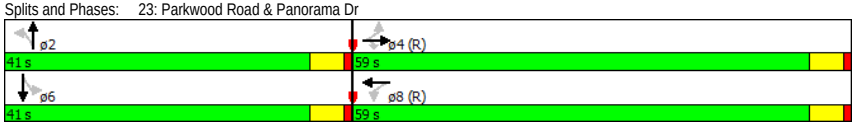


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	217	48	45	19	234	83	14	33	7	21	18	202
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	50.0		0.0	50.0		0.0
Storage Lanes	0		1	0		0	1		0	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850		0.967			0.974			0.862	
Flt Protected		0.961			0.997		0.950			0.950		
Satd. Flow (prot)	0	1758	1555	0	1764	0	1706	1749	0	1706	1548	0
Flt Permitted		0.554			0.974		0.342			0.727		
Satd. Flow (perm)	0	1014	1555	0	1723	0	614	1749	0	1305	1548	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			51		26			8			230	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		64.5			305.1			482.1			552.3	
Travel Time (s)		4.6			22.0			34.7			39.8	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%	7%	7%	7%	7%	7%	7%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	302	51	0	382	0	16	46	0	24	250	0
Turn Type	Perm	NA	Perm	Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8			2			6		
Detector Phase	4	4	4	8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	23.0	23.0	23.0	23.0	23.0		23.0	23.0		23.0	23.0	
Total Split (s)	59.0	59.0	59.0	59.0	59.0		41.0	41.0		41.0	41.0	
Total Split (%)	59.0%	59.0%	59.0%	59.0%	59.0%		41.0%	41.0%		41.0%	41.0%	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0	0.0		0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		5.0	5.0		5.0		5.0	5.0		5.0	5.0	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	C-Min	C-Min	C-Min	C-Min	C-Min		None	None		None	None	
Act Effct Green (s)		78.3	78.3		78.3		11.7	11.7		11.7	11.7	
Actuated g/C Ratio		0.78	0.78		0.78		0.12	0.12		0.12	0.12	
v/c Ratio		0.38	0.04		0.28		0.22	0.22		0.16	0.65	
Control Delay		12.9	5.4		3.7		45.4	35.0		40.3	15.2	
Queue Delay		2.3	0.0		0.0		0.1	0.0		0.0	0.2	
Total Delay		15.2	5.4		3.7		45.5	35.0		40.3	15.4	
LOS		B	A		A		D	D		D	B	
Approach Delay		13.8			3.7			37.7			17.6	
Approach LOS		B			A			D			B	
Queue Length 50th (m)		44.6	0.0		13.3		3.0	7.2		4.4	4.0	
Queue Length 95th (m)		80.2	8.9		31.1		8.4	14.3		10.5	21.6	
Internal Link Dist (m)		40.5			281.1			458.1			528.3	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Bay Length (m)							50.0			50.0		
Base Capacity (vph)		794	1228		1354		221	634		469	704	
Starvation Cap Reductn		356	0		0		0	0		0	0	
Spillback Cap Reductn		0	0		43		32	0		0	90	
Storage Cap Reductn		0	0		0		0	0		0	0	
Reduced v/c Ratio		0.69	0.04		0.29		0.08	0.07		0.05	0.41	

Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 100			
Offset: 0 (0%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green			
Natural Cycle: 55			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.65			
Intersection Signal Delay: 12.5		Intersection LOS: B	
Intersection Capacity Utilization 58.9%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 23: Parkwood Road & Panorama Dr



Intersection	
Int Delay, s/veh	2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Vol, veh/h	33	49	58	1242	724	35
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	-	-	-	-	-
Veh in Median Storage, #	1	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	8	8	5	5	8	8
Mvmt Flow	36	53	63	1350	787	38

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1607	413	825	0	-	0
Stage 1	806	-	-	-	-	-
Stage 2	801	-	-	-	-	-
Critical Hdwy	6.96	7.06	4.2	-	-	-
Critical Hdwy Stg 1	5.96	-	-	-	-	-
Critical Hdwy Stg 2	5.96	-	-	-	-	-
Follow-up Hdwy	3.58	3.38	2.25	-	-	-
Pot Cap-1 Maneuver	90	572	782	-	-	-
Stage 1	385	-	-	-	-	-
Stage 2	387	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	61	572	782	-	-	-
Mov Cap-2 Maneuver	169	-	-	-	-	-
Stage 1	385	-	-	-	-	-
Stage 2	262	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	22.7	1.9	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	782	-	292	-	-
HCM Lane V/C Ratio	0.081	-	0.305	-	-
HCM Control Delay (s)	10	1.5	22.7	-	-
HCM Lane LOS	B	A	C	-	-
HCM 95th %tile Q(veh)	0.3	-	1.3	-	-

Intersection	
Int Delay, s/veh	7.2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Vol, veh/h	270	32	15	97	120	201
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	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	8	8	5	5	5	5
Mvmt Flow	293	35	16	105	130	218

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	378	240	349	0	-	0
Stage 1	240	-	-	-	-	-
Stage 2	138	-	-	-	-	-
Critical Hdwy	6.48	6.28	4.15	-	-	-
Critical Hdwy Stg 1	5.48	-	-	-	-	-
Critical Hdwy Stg 2	5.48	-	-	-	-	-
Follow-up Hdwy	3.572	3.372	2.245	-	-	-
Pot Cap-1 Maneuver	612	784	1193	-	-	-
Stage 1	786	-	-	-	-	-
Stage 2	874	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	603	784	1193	-	-	-
Mov Cap-2 Maneuver	603	-	-	-	-	-
Stage 1	786	-	-	-	-	-
Stage 2	862	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	17.2	1.1	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1193	-	618	-	-
HCM Lane V/C Ratio	0.014	-	0.531	-	-
HCM Control Delay (s)	8.1	0	17.2	-	-
HCM Lane LOS	A	A	C	-	-
HCM 95th %tile Q(veh)	0	-	3.1	-	-

Intersection	
Int Delay, s/veh	1.5

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Vol, veh/h	7	33	79	35	24	200
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	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	5	5	5	5	5	5
Mvmt Flow	8	36	86	38	26	217

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	375	105	0	0	124	0
Stage 1	105	-	-	-	-	-
Stage 2	270	-	-	-	-	-
Critical Hdwy	6.45	6.25	-	-	4.15	-
Critical Hdwy Stg 1	5.45	-	-	-	-	-
Critical Hdwy Stg 2	5.45	-	-	-	-	-
Follow-up Hdwy	3.545	3.345	-	-	2.245	-
Pot Cap-1 Maneuver	620	941	-	-	1444	-
Stage 1	912	-	-	-	-	-
Stage 2	768	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	608	941	-	-	1444	-
Mov Cap-2 Maneuver	608	-	-	-	-	-
Stage 1	912	-	-	-	-	-
Stage 2	753	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.4	0	0.8
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	859	1444	-
HCM Lane V/C Ratio	-	-	0.051	0.018	-
HCM Control Delay (s)	-	-	9.4	7.5	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.2	0.1	-

Intersection	
Int Delay, s/veh	2.7

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Vol, veh/h	6	60	58	45	70	180
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	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	5	5	5	5	5	5
Mvmt Flow	7	65	63	49	76	196

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	436	88	0	0	112	0
Stage 1	88	-	-	-	-	-
Stage 2	348	-	-	-	-	-
Critical Hdwy	6.45	6.25	-	-	4.15	-
Critical Hdwy Stg 1	5.45	-	-	-	-	-
Critical Hdwy Stg 2	5.45	-	-	-	-	-
Follow-up Hdwy	3.545	3.345	-	-	2.245	-
Pot Cap-1 Maneuver	572	962	-	-	1459	-
Stage 1	928	-	-	-	-	-
Stage 2	708	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	539	962	-	-	1459	-
Mov Cap-2 Maneuver	539	-	-	-	-	-
Stage 1	928	-	-	-	-	-
Stage 2	667	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.4	0	2.1
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	898	1459	-
HCM Lane V/C Ratio	-	-	0.08	0.052	-
HCM Control Delay (s)	-	-	9.4	7.6	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.3	0.2	-

Intersection	
Int Delay, s/veh	6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR
Vol, veh/h	55	40	1	14	27	32	1	80	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	8	8	8	8	8	8	5	5	5
Mvmt Flow	60	43	1	15	29	35	1	87	1

Major/Minor	Minor2			Minor1			Major1		
Conflicting Flow All	256	224	66	246	238	88	80	0	0
Stage 1	134	134	-	90	90	-	-	-	-
Stage 2	122	90	-	156	148	-	-	-	-
Critical Hdwy	7.18	6.58	6.28	7.18	6.58	6.28	4.15	-	-
Critical Hdwy Stg 1	6.18	5.58	-	6.18	5.58	-	-	-	-
Critical Hdwy Stg 2	6.18	5.58	-	6.18	5.58	-	-	-	-
Follow-up Hdwy	3.572	4.072	3.372	3.572	4.072	3.372	2.245	-	-
Pot Cap-1 Maneuver	685	665	981	695	653	954	1499	-	-
Stage 1	855	774	-	903	809	-	-	-	-
Stage 2	868	809	-	832	763	-	-	-	-
Platoon blocked, %								-	-
Mov Cap-1 Maneuver	625	648	981	646	637	954	1499	-	-
Mov Cap-2 Maneuver	625	648	-	646	637	-	-	-	-
Stage 1	854	755	-	902	808	-	-	-	-
Stage 2	805	808	-	764	745	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	11.8	10.4	0.1
HCM LOS	B	B	

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1499	-	-	637	748	1489	-	-
HCM Lane V/C Ratio	0.001	-	-	0.164	0.106	0.023	-	-
HCM Control Delay (s)	7.4	0	-	11.8	10.4	7.5	0	-
HCM Lane LOS	A	A	-	B	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.6	0.4	0.1	-	-

Intersection	
Int Delay, s/veh	

Movement	SBL	SBT	SBR
Vol, veh/h	31	48	26
Conflicting Peds, #/hr	0	0	0
Sign Control	Free	Free	Free
RT Channelized	-	-	None
Storage Length	-	-	-
Veh in Median Storage, #	-	0	-
Grade, %	-	0	-
Peak Hour Factor	92	92	92
Heavy Vehicles, %	5	5	5
Mvmt Flow	34	52	28

Major/Minor	Major2		
Conflicting Flow All	88	0	0
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	4.15	-	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	2.245	-	-
Pot Cap-1 Maneuver	1489	-	-
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	1489	-	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	SB
HCM Control Delay, s	2.2
HCM LOS	

Minor Lane/Major Mvmt

Intersection	
Int Delay, s/veh	4.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR
Vol, veh/h	6	0	85	0	0	1	96	78	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	5	5	5	5	5	5	5	5	5
Mvmt Flow	7	0	92	0	0	1	104	85	1

Major/Minor	Minor2			Minor1			Major1		
Conflicting Flow All	404	404	104	449	411	85	113	0	0
Stage 1	109	109	-	294	294	-	-	-	-
Stage 2	295	295	-	155	117	-	-	-	-
Critical Hdwy	7.15	6.55	6.25	7.15	6.55	6.25	4.15	-	-
Critical Hdwy Stg 1	6.15	5.55	-	6.15	5.55	-	-	-	-
Critical Hdwy Stg 2	6.15	5.55	-	6.15	5.55	-	-	-	-
Follow-up Hdwy	3.545	4.045	3.345	3.545	4.045	3.345	2.245	-	-
Pot Cap-1 Maneuver	552	531	943	515	526	966	1458	-	-
Stage 1	889	799	-	708	664	-	-	-	-
Stage 2	707	664	-	840	793	-	-	-	-
Platoon blocked, %								-	-
Mov Cap-1 Maneuver	519	491	943	438	486	966	1458	-	-
Mov Cap-2 Maneuver	519	491	-	438	486	-	-	-	-
Stage 1	822	798	-	655	614	-	-	-	-
Stage 2	653	614	-	757	792	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	9.5	8.7	4.2
HCM LOS	A	A	

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1458	-	-	895	966	1492	-	-
HCM Lane V/C Ratio	0.072	-	-	0.111	0.001	0.001	-	-
HCM Control Delay (s)	7.7	0	-	9.5	8.7	7.4	0	-
HCM Lane LOS	A	A	-	A	A	A	A	-
HCM 95th %tile Q(veh)	0.2	-	-	0.4	0	0	-	-

Intersection	
Int Delay, s/veh	

Movement	SBL	SBT	SBR
Vol, veh/h	2	88	16
Conflicting Peds, #/hr	0	0	0
Sign Control	Free	Free	Free
RT Channelized	-	-	None
Storage Length	-	-	-
Veh in Median Storage, #	-	0	-
Grade, %	-	0	-
Peak Hour Factor	92	92	92
Heavy Vehicles, %	5	5	5
Mvmt Flow	2	96	17

Major/Minor	Major2		
Conflicting Flow All	86	0	0
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	4.15	-	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	2.245	-	-
Pot Cap-1 Maneuver	1492	-	-
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	1492	-	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	SB
HCM Control Delay, s	0.1
HCM LOS	

Minor Lane/Major Mvmt

Intersection	
Int Delay, s/veh	2.8

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Vol, veh/h	79	46	270	139	29	151
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	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	5	5	5	5	5	5
Mvmt Flow	86	50	293	151	32	164

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	514	222	0	0	445	0
Stage 1	369	-	-	-	-	-
Stage 2	145	-	-	-	-	-
Critical Hdwy	6.9	7	-	-	4.2	-
Critical Hdwy Stg 1	5.9	-	-	-	-	-
Critical Hdwy Stg 2	5.9	-	-	-	-	-
Follow-up Hdwy	3.55	3.35	-	-	2.25	-
Pot Cap-1 Maneuver	483	772	-	-	1091	-
Stage 1	661	-	-	-	-	-
Stage 2	858	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	468	772	-	-	1091	-
Mov Cap-2 Maneuver	468	-	-	-	-	-
Stage 1	661	-	-	-	-	-
Stage 2	831	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	13.7	0	1.4
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	547	1091	-
HCM Lane V/C Ratio	-	-	0.248	0.029	-
HCM Control Delay (s)	-	-	13.7	8.4	0.1
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	1	0.1	-

Intersection	
Int Delay, s/veh	0.9

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Vol, veh/h	14	33	6	340	162	6
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	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	25	25	5	5	8	8
Mvmt Flow	15	36	7	370	176	7

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	377	91	183	0	-	0
Stage 1	179	-	-	-	-	-
Stage 2	198	-	-	-	-	-
Critical Hdwy	7.3	7.4	4.2	-	-	-
Critical Hdwy Stg 1	6.3	-	-	-	-	-
Critical Hdwy Stg 2	6.3	-	-	-	-	-
Follow-up Hdwy	3.75	3.55	2.25	-	-	-
Pot Cap-1 Maneuver	540	879	1368	-	-	-
Stage 1	769	-	-	-	-	-
Stage 2	751	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	537	879	1368	-	-	-
Mov Cap-2 Maneuver	537	-	-	-	-	-
Stage 1	769	-	-	-	-	-
Stage 2	746	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	10.2	0.1	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1368	-	739	-	-
HCM Lane V/C Ratio	0.005	-	0.069	-	-
HCM Control Delay (s)	7.6	0	10.2	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0	-	0.2	-	-

Intersection	
Int Delay, s/veh	1.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR
Vol, veh/h	1	106	1	5	76	10	3	1	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	5	5	5	5	5	5	5	5	5
Mvmt Flow	1	115	1	5	83	11	3	1	5

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	93	0	0	116	0	0	223	222	116
Stage 1	-	-	-	-	-	-	118	118	-
Stage 2	-	-	-	-	-	-	105	104	-
Critical Hdwy	4.15	-	-	4.15	-	-	7.15	6.55	6.25
Critical Hdwy Stg 1	-	-	-	-	-	-	6.15	5.55	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.15	5.55	-
Follow-up Hdwy	2.245	-	-	2.245	-	-	3.545	4.045	3.345
Pot Cap-1 Maneuver	1483	-	-	1454	-	-	726	671	928
Stage 1	-	-	-	-	-	-	879	792	-
Stage 2	-	-	-	-	-	-	893	803	-
Platoon blocked, %		-	-		-	-			
Mov Cap-1 Maneuver	1483	-	-	1454	-	-	714	668	928
Mov Cap-2 Maneuver	-	-	-	-	-	-	714	668	-
Stage 1	-	-	-	-	-	-	878	791	-
Stage 2	-	-	-	-	-	-	878	800	-

Approach	EB	WB	NB
HCM Control Delay, s	0.1	0.4	9.5
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	812	1483	-	-	1454	-	-	802
HCM Lane V/C Ratio	0.012	0.001	-	-	0.004	-	-	0.028
HCM Control Delay (s)	9.5	7.4	0	-	7.5	0	-	9.6
HCM Lane LOS	A	A	A	-	A	A	-	A
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	0.1

Intersection	
Int Delay, s/veh	

Movement	SBL	SBT	SBR
Vol, veh/h	10	2	9
Conflicting Peds, #/hr	0	0	0
Sign Control	Stop	Stop	Stop
RT Channelized	-	-	None
Storage Length	-	-	-
Veh in Median Storage, #	-	0	-
Grade, %	-	0	-
Peak Hour Factor	92	92	92
Heavy Vehicles, %	5	5	5
Mvmt Flow	11	2	10

Major/Minor	Minor2		
Conflicting Flow All	220	217	88
Stage 1	99	99	-
Stage 2	121	118	-
Critical Hdwy	7.15	6.55	6.25
Critical Hdwy Stg 1	6.15	5.55	-
Critical Hdwy Stg 2	6.15	5.55	-
Follow-up Hdwy	3.545	4.045	3.345
Pot Cap-1 Maneuver	730	676	962
Stage 1	900	807	-
Stage 2	876	792	-
Platoon blocked, %			
Mov Cap-1 Maneuver	722	673	962
Mov Cap-2 Maneuver	722	673	-
Stage 1	899	804	-
Stage 2	869	791	-

Approach	SB
HCM Control Delay, s	9.6
HCM LOS	A

Minor Lane/Major Mvmt

Intersection	
Int Delay, s/veh	11.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR
Vol, veh/h	222	222	50	25	139	34	39	45	42
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None
Storage Length	0	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	10	10	10	8	8	8	7	7	7
Mvmt Flow	241	241	54	27	151	37	42	49	46

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	188	0	0	296	0	0	1091	993	268
Stage 1	-	-	-	-	-	-	751	751	-
Stage 2	-	-	-	-	-	-	340	242	-
Critical Hdwy	4.2	-	-	4.18	-	-	7.17	6.57	6.27
Critical Hdwy Stg 1	-	-	-	-	-	-	6.17	5.57	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.17	5.57	-
Follow-up Hdwy	2.29	-	-	2.272	-	-	3.563	4.063	3.363
Pot Cap-1 Maneuver	1339	-	-	1232	-	-	188	241	759
Stage 1	-	-	-	-	-	-	395	411	-
Stage 2	-	-	-	-	-	-	664	696	-
Platoon blocked, %		-	-		-	-			
Mov Cap-1 Maneuver	1339	-	-	1232	-	-	113	193	759
Mov Cap-2 Maneuver	-	-	-	-	-	-	173	259	-
Stage 1	-	-	-	-	-	-	324	337	-
Stage 2	-	-	-	-	-	-	473	679	-

Approach	EB	WB	NB
HCM Control Delay, s	3.7	1	30.1
HCM LOS			D

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	277	1339	-	-	1232	-	-	465
HCM Lane V/C Ratio	0.494	0.18	-	-	0.022	-	-	0.622
HCM Control Delay (s)	30.1	8.3	-	-	8	0	-	24.6
HCM Lane LOS	D	A	-	-	A	A	-	C
HCM 95th %tile Q(veh)	2.6	0.7	-	-	0.1	-	-	4.1

Intersection	
Int Delay, s/veh	

Movement	SBL	SBT	SBR
Vol, veh/h	52	18	196
Conflicting Peds, #/hr	0	0	0
Sign Control	Stop	Stop	Stop
RT Channelized	-	-	None
Storage Length	-	-	-
Veh in Median Storage, #	-	1	-
Grade, %	-	0	-
Peak Hour Factor	92	92	92
Heavy Vehicles, %	7	7	7
Mvmt Flow	57	20	213

Major/Minor	Minor2		
Conflicting Flow All	1022	1002	170
Stage 1	224	224	-
Stage 2	798	778	-
Critical Hdwy	7.17	6.57	6.27
Critical Hdwy Stg 1	6.17	5.57	-
Critical Hdwy Stg 2	6.17	5.57	-
Follow-up Hdwy	3.563	4.063	3.363
Pot Cap-1 Maneuver	210	238	861
Stage 1	767	709	-
Stage 2	372	399	-
Platoon blocked, %			
Mov Cap-1 Maneuver	143	190	861
Mov Cap-2 Maneuver	190	256	-
Stage 1	629	691	-
Stage 2	245	327	-

Approach	SB
HCM Control Delay, s	24.6
HCM LOS	C

Minor Lane/Major Mvmt

Intersection	
Int Delay, s/veh	3.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR
Vol, veh/h	101	207	0	0	108	9	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	5	5	5	5	5	5	5	5	5
Mvmt Flow	110	225	0	0	117	10	0	0	0

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	127	0	0	225	0	0	598	572	225
Stage 1	-	-	-	-	-	-	445	445	-
Stage 2	-	-	-	-	-	-	153	127	-
Critical Hdwy	4.15	-	-	4.15	-	-	7.15	6.55	6.25
Critical Hdwy Stg 1	-	-	-	-	-	-	6.15	5.55	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.15	5.55	-
Follow-up Hdwy	2.245	-	-	2.245	-	-	3.545	4.045	3.345
Pot Cap-1 Maneuver	1441	-	-	1326	-	-	410	426	807
Stage 1	-	-	-	-	-	-	586	570	-
Stage 2	-	-	-	-	-	-	842	785	-
Platoon blocked, %		-	-		-	-			
Mov Cap-1 Maneuver	1441	-	-	1326	-	-	357	389	807
Mov Cap-2 Maneuver	-	-	-	-	-	-	357	389	-
Stage 1	-	-	-	-	-	-	535	520	-
Stage 2	-	-	-	-	-	-	785	785	-

Approach	EB	WB	NB
HCM Control Delay, s	2.5	0	0
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	1441	-	-	1326	-	-	628
HCM Lane V/C Ratio	-	0.076	-	-	-	-	-	0.154
HCM Control Delay (s)	0	7.7	0	-	0	-	-	11.8
HCM Lane LOS	A	A	A	-	A	-	-	B
HCM 95th %tile Q(veh)	-	0.2	-	-	0	-	-	0.5

Intersection	
Int Delay, s/veh	

Movement	SBL	SBT	SBR
Vol, veh/h	32	0	57
Conflicting Peds, #/hr	0	0	0
Sign Control	Stop	Stop	Stop
RT Channelized	-	-	None
Storage Length	-	-	-
Veh in Median Storage, #	-	0	-
Grade, %	-	0	-
Peak Hour Factor	92	92	92
Heavy Vehicles, %	5	5	5
Mvmt Flow	35	0	62

Major/Minor	Minor2		
Conflicting Flow All	567	567	122
Stage 1	122	122	-
Stage 2	445	445	-
Critical Hdwy	7.15	6.55	6.25
Critical Hdwy Stg 1	6.15	5.55	-
Critical Hdwy Stg 2	6.15	5.55	-
Follow-up Hdwy	3.545	4.045	3.345
Pot Cap-1 Maneuver	430	429	921
Stage 1	875	789	-
Stage 2	586	570	-
Platoon blocked, %			
Mov Cap-1 Maneuver	401	392	921
Mov Cap-2 Maneuver	401	392	-
Stage 1	799	789	-
Stage 2	535	520	-

Approach	SB
HCM Control Delay, s	11.8
HCM LOS	B

Minor Lane/Major Mvmt

Intersection	
Int Delay, s/veh	8.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR
Vol, veh/h	360	91	26	0	107	1	27	3	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None
Storage Length	500	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	8	8	5	5	5	5	5	5	5
Mvmt Flow	391	99	28	0	116	1	29	3	0

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	117	0	0	127	0	0	1142	1013	113
Stage 1	-	-	-	-	-	-	896	896	-
Stage 2	-	-	-	-	-	-	246	117	-
Critical Hdwy	4.18	-	-	4.15	-	-	7.15	6.55	6.25
Critical Hdwy Stg 1	-	-	-	-	-	-	6.15	5.55	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.15	5.55	-
Follow-up Hdwy	2.272	-	-	2.245	-	-	3.545	4.045	3.345
Pot Cap-1 Maneuver	1435	-	-	1441	-	-	175	236	932
Stage 1	-	-	-	-	-	-	331	355	-
Stage 2	-	-	-	-	-	-	751	793	-
Platoon blocked, %		-	-		-	-			
Mov Cap-1 Maneuver	1435	-	-	1441	-	-	98	172	932
Mov Cap-2 Maneuver	-	-	-	-	-	-	123	214	-
Stage 1	-	-	-	-	-	-	241	258	-
Stage 2	-	-	-	-	-	-	539	793	-

Approach	EB	WB	NB
HCM Control Delay, s	6.4	0	42.5
HCM LOS			E

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	128	1435	-	-	1441	-	-	869
HCM Lane V/C Ratio	0.255	0.273	-	-	-	-	-	0.298
HCM Control Delay (s)	42.5	8.4	-	-	0	-	-	10.9
HCM Lane LOS	E	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	1	1.1	-	-	0	-	-	1.3

Intersection	
Int Delay, s/veh	

Movement	SBL	SBT	SBR
Vol, veh/h	0	4	234
Conflicting Peds, #/hr	0	0	0
Sign Control	Stop	Stop	Stop
RT Channelized	-	-	None
Storage Length	-	-	-
Veh in Median Storage, #	-	1	-
Grade, %	-	0	-
Peak Hour Factor	92	92	92
Heavy Vehicles, %	10	5	10
Mvmt Flow	0	4	254

Major/Minor	Minor2		
Conflicting Flow All	1014	1027	117
Stage 1	117	117	-
Stage 2	897	910	-
Critical Hdwy	7.2	6.55	6.3
Critical Hdwy Stg 1	6.2	5.55	-
Critical Hdwy Stg 2	6.2	5.55	-
Follow-up Hdwy	3.59	4.045	3.39
Pot Cap-1 Maneuver	210	232	914
Stage 1	869	793	-
Stage 2	324	349	-
Platoon blocked, %			
Mov Cap-1 Maneuver	164	169	914
Mov Cap-2 Maneuver	205	223	-
Stage 1	632	793	-
Stage 2	233	254	-

Approach	SB
HCM Control Delay, s	10.9
HCM LOS	B

Minor Lane/Major Mvmt

Intersection	
Int Delay, s/veh	11.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR
Vol, veh/h	26	151	17	3	198	0	102	1	6
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None
Storage Length	500	-	-	0	-	-	500	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	8	10	18	18	13	8	18	18	18
Mvmt Flow	28	164	18	3	215	0	111	1	7

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	215	0	0	183	0	0	669	452	173
Stage 1	-	-	-	-	-	-	230	230	-
Stage 2	-	-	-	-	-	-	439	222	-
Critical Hdwy	4.18	-	-	4.28	-	-	7.28	6.68	6.38
Critical Hdwy Stg 1	-	-	-	-	-	-	6.28	5.68	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.28	5.68	-
Follow-up Hdwy	2.272	-	-	2.362	-	-	3.662	4.162	3.462
Pot Cap-1 Maneuver	1320	-	-	1301	-	-	350	480	831
Stage 1	-	-	-	-	-	-	738	685	-
Stage 2	-	-	-	-	-	-	567	691	-
Platoon blocked, %		-	-		-	-			
Mov Cap-1 Maneuver	1320	-	-	1301	-	-	159	469	831
Mov Cap-2 Maneuver	-	-	-	-	-	-	206	518	-
Stage 1	-	-	-	-	-	-	722	670	-
Stage 2	-	-	-	-	-	-	262	689	-

Approach	EB	WB	NB
HCM Control Delay, s	1	0.1	39.2
HCM LOS			E

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	206	765	1320	-	-	1301	-	-	562	809
HCM Lane V/C Ratio	0.538	0.01	0.021	-	-	0.003	-	-	0.01	0.537
HCM Control Delay (s)	41.2	9.8	7.8	-	-	7.8	-	-	11.5	14.5
HCM Lane LOS	E	A	A	-	-	A	-	-	B	B
HCM 95th %tile Q(veh)	2.8	0	0.1	-	-	0	-	-	0	3.3

Intersection	
Int Delay, s/veh	

Movement	SBL	SBT	SBR
Vol, veh/h	5	1	399
Conflicting Peds, #/hr	0	0	0
Sign Control	Stop	Stop	Stop
RT Channelized	-	-	None
Storage Length	0	-	-
Veh in Median Storage, #	-	1	-
Grade, %	-	0	-
Peak Hour Factor	92	92	92
Heavy Vehicles, %	8	8	8
Mvmt Flow	5	1	434

Major/Minor	Minor2		
Conflicting Flow All	456	461	215
Stage 1	222	222	-
Stage 2	234	239	-
Critical Hdwy	7.18	6.58	6.28
Critical Hdwy Stg 1	6.18	5.58	-
Critical Hdwy Stg 2	6.18	5.58	-
Follow-up Hdwy	3.572	4.072	3.372
Pot Cap-1 Maneuver	505	489	810
Stage 1	767	709	-
Stage 2	756	697	-
Platoon blocked, %			
Mov Cap-1 Maneuver	491	478	810
Mov Cap-2 Maneuver	562	534	-
Stage 1	751	707	-
Stage 2	733	682	-

Approach	SB
HCM Control Delay, s	14.5
HCM LOS	B

Minor Lane/Major Mvmt

33: Highway 597 & East Railway Street

Intersection	
Int Delay, s/veh	2.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	92	238	317	6	3	65
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	1	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	5	5	5	5	5	5
Mvmt Flow	100	259	345	7	3	71

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	351	0	-	0	677	176
Stage 1	-	-	-	-	348	-
Stage 2	-	-	-	-	329	-
Critical Hdwy	4.2	-	-	-	6.9	7
Critical Hdwy Stg 1	-	-	-	-	5.9	-
Critical Hdwy Stg 2	-	-	-	-	5.9	-
Follow-up Hdwy	2.25	-	-	-	3.55	3.35
Pot Cap-1 Maneuver	1183	-	-	-	380	827
Stage 1	-	-	-	-	677	-
Stage 2	-	-	-	-	693	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1183	-	-	-	342	827
Mov Cap-2 Maneuver	-	-	-	-	452	-
Stage 1	-	-	-	-	677	-
Stage 2	-	-	-	-	624	-

Approach	EB	WB	SB
HCM Control Delay, s	2.5	0	10
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1183	-	-	-	798
HCM Lane V/C Ratio	0.085	-	-	-	0.093
HCM Control Delay (s)	8.3	0.2	-	-	10
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0.3	-	-	-	0.3

34: Broadway Avenue & Gregg St

Intersection	
Int Delay, s/veh	5.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Vol, veh/h	364	93	175	806	131	278
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	500	500	-	-	0
Veh in Median Storage, #	0	-	-	0	1	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	5	5	5	5	5	5
Mvmt Flow	396	101	190	876	142	302

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	396	0	1214	198
Stage 1	-	-	-	-	396	-
Stage 2	-	-	-	-	818	-
Critical Hdwy	-	-	4.2	-	6.9	7
Critical Hdwy Stg 1	-	-	-	-	5.9	-
Critical Hdwy Stg 2	-	-	-	-	5.9	-
Follow-up Hdwy	-	-	2.25	-	3.55	3.35
Pot Cap-1 Maneuver	-	-	1138	-	170	801
Stage 1	-	-	-	-	640	-
Stage 2	-	-	-	-	387	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1138	-	~ 142	801
Mov Cap-2 Maneuver	-	-	-	-	250	-
Stage 1	-	-	-	-	640	-
Stage 2	-	-	-	-	322	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.6	20.1
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	250	801	-	-	1138	-
HCM Lane V/C Ratio	0.57	0.377	-	-	0.167	-
HCM Control Delay (s)	36.9	12.2	-	-	8.8	-
HCM Lane LOS	E	B	-	-	A	-
HCM 95th %tile Q(veh)	3.2	1.8	-	-	0.6	-

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

Intersection	
Int Delay, s/veh	2.6

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	2	221	200	250	111	20
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	5	5	5	5	5	5
Mvmt Flow	2	240	217	272	121	22

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	489	0	-	0	598	353
Stage 1	-	-	-	-	353	-
Stage 2	-	-	-	-	245	-
Critical Hdwy	4.15	-	-	-	6.45	6.25
Critical Hdwy Stg 1	-	-	-	-	5.45	-
Critical Hdwy Stg 2	-	-	-	-	5.45	-
Follow-up Hdwy	2.245	-	-	-	3.545	3.345
Pot Cap-1 Maneuver	1059	-	-	-	460	684
Stage 1	-	-	-	-	705	-
Stage 2	-	-	-	-	789	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1059	-	-	-	459	684
Mov Cap-2 Maneuver	-	-	-	-	459	-
Stage 1	-	-	-	-	705	-
Stage 2	-	-	-	-	787	-

Approach	EB	WB	SB
HCM Control Delay, s	0.1	0	15.5
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1059	-	-	-	483
HCM Lane V/C Ratio	0.002	-	-	-	0.295
HCM Control Delay (s)	8.4	0	-	-	15.5
HCM Lane LOS	A	A	-	-	C
HCM 95th %tile Q(veh)	0	-	-	-	1.2

Intersection	
Intersection Delay, s/veh	14.5
Intersection LOS	B

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	10	26	42	0	86	1	32	0	2	333	282
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
Heavy Vehicles, %	5	18	18	18	5	5	5	5	5	5	5	5
Mvmt Flow	0	11	28	46	0	93	1	35	0	2	362	307
Number of Lanes	0	0	1	0	0	0	1	1	0	0	2	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	2	1	2
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	2	2	1
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	2	2	2
HCM Control Delay	11.2	11.2	16.9
HCM LOS	B	B	C

Lane	NBLn1	NBLn2	EBLn1	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	1%	0%	13%	99%	0%	22%	0%
Vol Thru, %	99%	37%	33%	1%	0%	78%	98%
Vol Right, %	0%	63%	54%	0%	100%	0%	2%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	169	449	78	87	32	104	83
LT Vol	167	167	26	1	0	81	81
Through Vol	0	282	42	0	32	0	2
RT Vol	2	0	10	86	0	23	0
Lane Flow Rate	183	488	85	95	35	113	90
Geometry Grp	7	7	6	7	7	7	7
Degree of Util (X)	0.286	0.701	0.161	0.193	0.059	0.196	0.153
Departure Headway (Hd)	5.623	5.173	6.82	7.358	6.145	6.251	6.122
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	639	702	526	488	582	574	586
Service Time	3.351	2.9	4.864	5.104	3.89	3.99	3.86
HCM Lane V/C Ratio	0.286	0.695	0.162	0.195	0.06	0.197	0.154
HCM Control Delay	10.6	19.2	11.2	11.9	9.3	10.5	10
HCM Lane LOS	B	C	B	B	A	B	A
HCM 95th-tile Q	1.2	5.8	0.6	0.7	0.2	0.7	0.5

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Vol, veh/h	0	23	162	2
Peak Hour Factor	0.92	0.92	0.92	0.92
Heavy Vehicles, %	5	5	5	5
Mvmt Flow	0	25	176	2
Number of Lanes	0	0	2	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	2
Conflicting Approach Left	WB
Conflicting Lanes Left	2
Conflicting Approach Right	EB
Conflicting Lanes Right	1
HCM Control Delay	10.3
HCM LOS	B

Lane

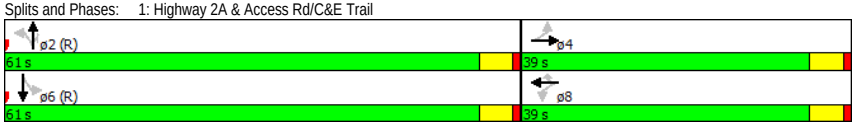
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	2	4	233	0	95	2	534	311	171	493	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		50.0	0.0		50.0	0.0		50.0	0.0		50.0
Storage Lanes	1		0	1		1	0		1	0		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95	0.95
Frt		0.900				0.850			0.850			
Flt Protected				0.950							0.987	
Satd. Flow (prot)	1830	1647	0	1659	1830	1484	0	3380	1484	0	3320	0
Flt Permitted				0.754				0.954			0.664	
Satd. Flow (perm)	1830	1647	0	1317	1830	1484	0	3225	1484	0	2233	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		4				284			338			
Link Speed (k/h)		50			50			80			80	
Link Distance (m)		55.8			80.9			547.5			300.8	
Travel Time (s)		4.0			5.8			24.6			13.5	
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
Heavy Vehicles (%)	5%	5%	5%	10%	5%	10%	5%	8%	10%	10%	8%	5%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	6	0	253	0	103	0	582	338	0	722	0
Turn Type	Perm	NA		Perm		Perm	Perm	NA	Perm	Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8		8	2		2	6		
Detector Phase	4	4		8	8	8	2	2	2	6	6	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0	10.0	20.0	20.0	20.0	20.0	20.0	
Minimum Split (s)	30.0	30.0		30.0	30.0	30.0	25.0	25.0	25.0	25.0	25.0	
Total Split (s)	39.0	39.0		39.0	39.0	39.0	61.0	61.0	61.0	61.0	61.0	
Total Split (%)	39.0%	39.0%		39.0%	39.0%	39.0%	61.0%	61.0%	61.0%	61.0%	61.0%	
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0		0.0	0.0		0.0	
Total Lost Time (s)	5.0	5.0		5.0	5.0	5.0		5.0	5.0		5.0	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	None	None		None	None	None	C-Min	C-Min	C-Min	C-Min	C-Min	
Act Effct Green (s)		24.5		24.5		24.5		65.5	65.5		65.5	
Actuated g/C Ratio		0.24		0.24		0.24		0.66	0.66		0.66	
v/c Ratio		0.01		0.79		0.18		0.28	0.31		0.49	
Control Delay		17.7		51.7		0.7		3.7	1.2		11.4	
Queue Delay		0.0		0.0		0.0		0.0	0.0		0.0	
Total Delay		17.7		51.7		0.7		3.7	1.2		11.4	
LOS		B		D		A		A	A		B	
Approach Delay		17.7						2.8			11.4	
Approach LOS		B						A			B	
Queue Length 50th (m)		0.3		45.9		0.0		6.1	0.1		34.0	
Queue Length 95th (m)		3.0		65.9		0.0		22.2	6.3		61.0	
Internal Link Dist (m)		31.8			56.9			523.5			276.8	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Bay Length (m)						50.0			50.0			
Base Capacity (vph)		562		447		692		2112	1088		1463	
Starvation Cap Reductn		0		0		0		0	0		0	
Spillback Cap Reductn		0		0		0		0	0		0	
Storage Cap Reductn		0		0		0		0	0		0	
Reduced v/c Ratio		0.01		0.57		0.15		0.28	0.31		0.49	

Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 88 (88%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 60
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.79
Intersection Signal Delay: 12.0 Intersection LOS: B
Intersection Capacity Utilization 67.3% ICU Level of Service C
Analysis Period (min) 15

Splits and Phases: 1: Highway 2A & Access Rd/C&E Trail



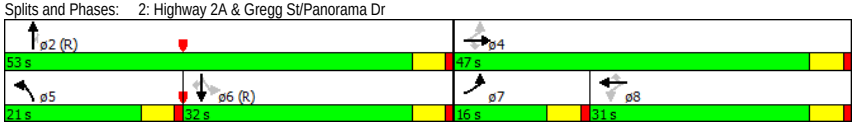
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	248	251	143	158	256	17	404	506	226	32	456	323
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		50.0	0.0		0.0	80.0		50.0	50.0		50.0
Storage Lanes	1		1	1		1	2		1	1		1
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00	1.00	0.97	0.95	1.00	1.00	0.95	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1738	3476	1555	1738	1830	1555	3372	3476	1555	1738	3476	1555
Flt Permitted	0.259			0.584			0.950			0.446		
Satd. Flow (perm)	474	3476	1555	1069	1830	1555	3372	3476	1555	816	3476	1555
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			155			131			246			351
Link Speed (k/h)		50			50			60			60	
Link Distance (m)		48.3			64.3			472.7			547.5	
Travel Time (s)		3.5			4.6			28.4			32.9	
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)	270	273	155	172	278	18	439	550	246	35	496	351
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	Prot	NA	Perm	Perm	NA	Perm
Protected Phases	7	4			8		5	2			6	
Permitted Phases	4		4	8		8			2	6		6
Detector Phase	7	4	4	8	8	8	5	2	2	6	6	6
Switch Phase												
Minimum Initial (s)	8.0	10.0	10.0	10.0	10.0	10.0	8.0	20.0	20.0	20.0	20.0	20.0
Minimum Split (s)	13.0	31.0	31.0	31.0	31.0	31.0	13.0	31.0	31.0	31.0	31.0	31.0
Total Split (s)	16.0	47.0	47.0	31.0	31.0	31.0	21.0	53.0	53.0	32.0	32.0	32.0
Total Split (%)	16.0%	47.0%	47.0%	31.0%	31.0%	31.0%	21.0%	53.0%	53.0%	32.0%	32.0%	32.0%
Yellow 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
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead			Lag	Lag	Lag	Lead			Lag	Lag	Lag
Lead-Lag Optimize?	Yes			Yes	Yes	Yes	Yes			Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Min	C-Min	C-Min	C-Min	C-Min
Act Effct Green (s)	40.4	40.4	40.4	20.8	20.8	20.8	16.3	49.6	49.6	28.4	28.4	28.4
Actuated g/C Ratio	0.40	0.40	0.40	0.21	0.21	0.21	0.16	0.50	0.50	0.28	0.28	0.28
v/c Ratio	0.72	0.19	0.22	0.77	0.73	0.04	0.80	0.32	0.27	0.15	0.50	0.51
Control Delay	33.9	19.1	3.7	58.5	47.2	0.2	47.8	21.3	8.2	28.1	30.7	6.6
Queue Delay	0.0	0.0	0.0	2.8	4.4	0.0	0.0	0.0	0.1	0.2	0.0	0.0
Total Delay	33.9	19.1	3.7	61.3	51.6	0.2	47.8	21.3	8.2	28.2	30.7	6.6
LOS	C	B	A	E	D	A	D	C	A	C	C	A
Approach Delay		21.4			53.2			28.1			21.0	
Approach LOS		C			D			C			C	
Queue Length 50th (m)	34.3	16.7	0.0	30.3	48.6	0.0	47.2	47.2	9.1	6.1	48.5	11.8
Queue Length 95th (m)	#67.4	25.5	11.1	52.8	64.8	m0.0	#64.0	58.0	35.5	m9.5	48.7	12.9
Internal Link Dist (m)		24.3			40.3			448.7			523.5	
Turn Bay Length (m)			50.0				80.0		50.0	50.0		50.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Base Capacity (vph)	375	1480	751	277	475	501	563	1746	903	241	1026	706
Starvation Cap Reductn	0	0	0	42	129	0	0	0	0	0	0	0
Spillback Cap Reductn	0	69	0	0	0	0	0	0	96	36	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.72	0.19	0.21	0.73	0.80	0.04	0.78	0.32	0.30	0.17	0.48	0.50

Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Green, Master Intersection
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.80
Intersection Signal Delay: 28.4 Intersection LOS: C
Intersection Capacity Utilization 77.2% ICU Level of Service D
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: Highway 2A & Gregg St/Panorama Dr



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	30	66	36	94	29	5	0	1023	177	11	676	17
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	0.0		0.0	0.0		50.0
Storage Lanes	0		1	0		1	0		1	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850		0.996	
Flt Protected		0.985			0.963					0.950		
Satd. Flow (prot)	0	1802	1555	0	1762	1555	0	3380	1555	1738	1822	0
Flt Permitted		0.866			0.702					0.229		
Satd. Flow (perm)	0	1584	1555	0	1284	1555	0	3380	1555	419	1822	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			39			22			192		2	
Link Speed (k/h)		50			50			60			60	
Link Distance (m)		54.4			44.4			100.1			472.7	
Travel Time (s)		3.9			3.2			6.0			28.4	
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
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%	5%	8%	5%	5%	5%	5%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	105	39	0	134	5	0	1112	192	12	753	0
Turn Type	Perm	NA	Perm	Perm	NA	Perm		NA	Perm	Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2		2	6		
Detector Phase	4	4	4	8	8	8	2	2	2	6	6	
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	20.0	20.0	20.0	20.0	20.0	
Minimum Split (s)	31.0	31.0	31.0	31.0	31.0	31.0	25.0	25.0	25.0	25.0	25.0	
Total Split (s)	33.0	33.0	33.0	33.0	33.0	33.0	67.0	67.0	67.0	67.0	67.0	
Total Split (%)	33.0%	33.0%	33.0%	33.0%	33.0%	33.0%	67.0%	67.0%	67.0%	67.0%	67.0%	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)		0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	
Total Lost Time (s)		5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	None	None	None	None	None	None	C-Min	C-Min	C-Min	C-Min	C-Min	
Act Effct Green (s)		16.5	16.5		16.5	16.5		73.5	73.5	73.5	73.5	
Actuated g/C Ratio		0.16	0.16		0.16	0.16		0.74	0.74	0.74	0.74	
v/c Ratio		0.40	0.13		0.63	0.02		0.45	0.16	0.04	0.56	
Control Delay		39.2	10.3		51.1	0.2		3.8	1.0	3.8	9.0	
Queue Delay		0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	
Total Delay		39.2	10.3		51.1	0.2		3.8	1.0	3.8	9.0	
LOS		D	B		D	A		A	A	A	A	
Approach Delay		31.4			49.3			3.4			8.9	
Approach LOS		C			D			A			A	
Queue Length 50th (m)		18.3	0.2		24.8	0.0		35.7	2.4	0.2	48.7	
Queue Length 95th (m)		m29.1	m6.9		38.8	0.3		38.6	5.2	m0.9	158.5	
Internal Link Dist (m)		30.4			20.4			76.1			448.7	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Bay Length (m)												
Base Capacity (vph)		443	463		359	451		2483	1193	307	1339	
Starvation Cap Reductn		0	0		0	0		0	0	0	0	
Spillback Cap Reductn		0	0		0	0		0	0	0	0	
Storage Cap Reductn		0	0		0	0		0	0	0	0	
Reduced v/c Ratio		0.24	0.08		0.37	0.01		0.45	0.16	0.04	0.56	

Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 100			
Offset: 35 (35%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 65			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.63			
Intersection Signal Delay: 9.6		Intersection LOS: A	
Intersection Capacity Utilization 74.1%		ICU Level of Service D	
Analysis Period (min) 15			

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 3: Highway 2A & ParkSt/Park St

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	119	16	1414	221	22	763
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	0.0		80.0	0.0	
Storage Lanes	1	1		1	0	
Taper Length (m)	2.5				2.5	
Lane Util. Factor	1.00	1.00	0.95	1.00	0.95	0.95
Frt		0.850		0.850		
Flt Protected	0.950					0.999
Satd. Flow (prot)	1521	1361	3318	1361	0	3459
Flt Permitted	0.950					0.872
Satd. Flow (perm)	1521	1361	3318	1361	0	3019
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		17		240		
Link Speed (k/h)	50		60			60
Link Distance (m)	50.6		327.8			219.5
Travel Time (s)	3.6		19.7			13.2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	20%	20%	10%	20%	20%	5%
Shared Lane Traffic (%)						
Lane Group Flow (vph)	129	17	1537	240	0	853
Turn Type	Perm	Perm	NA	Perm	Perm	NA
Protected Phases			2			6
Permitted Phases	8	8		2	6	
Detector Phase	8	8	2	2	6	6
Switch Phase						
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	27.0	27.0	23.0	23.0	23.0	23.0
Total Split (s)	27.0	27.0	73.0	73.0	73.0	73.0
Total Split (%)	27.0%	27.0%	73.0%	73.0%	73.0%	73.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0		0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0		5.0
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	None	None	C-Min	C-Min	C-Min	C-Min
Act Effct Green (s)	14.3	14.3	75.7	75.7		75.7
Actuated g/C Ratio	0.14	0.14	0.76	0.76		0.76
v/c Ratio	0.59	0.08	0.61	0.22		0.37
Control Delay	50.4	15.4	4.6	0.4		5.7
Queue Delay	0.0	0.0	0.0	0.0		0.0
Total Delay	50.4	15.4	4.6	0.4		5.7
LOS	D	B	A	A		A
Approach Delay	46.4		4.0			5.7
Approach LOS	D		A			A
Queue Length 50th (m)	23.9	0.0	44.6	0.0		4.8
Queue Length 95th (m)	38.5	5.5	39.8	0.6		70.9
Internal Link Dist (m)	26.6		303.8			195.5

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Turn Bay Length (m)				80.0		
Base Capacity (vph)	334	312	2512	1089		2285
Starvation Cap Reductn	0	0	0	0		0
Spillback Cap Reductn	0	0	0	0		0
Storage Cap Reductn	0	0	0	0		0
Reduced v/c Ratio	0.39	0.05	0.61	0.22		0.37

Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 88 (88%), Referenced to phase 2:NBT and 6:SBTL, Start of Green
Natural Cycle: 60
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.61
Intersection Signal Delay: 6.8 — Intersection LOS: A
Intersection Capacity Utilization 54.0% — ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 5: Highway 2A & South St

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	216	118	303	1479	820	153
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	0.0	50.0			80.0
Storage Lanes	1	1	1			0
Taper Length (m)	2.5		2.5			
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95
Frt		0.850			0.976	
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1738	1555	1738	3476	3393	0
Flt Permitted	0.950		0.158			
Satd. Flow (perm)	1738	1555	289	3476	3393	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		128			25	
Link Speed (k/h)	50			60	60	
Link Distance (m)	79.1			148.6	327.8	
Travel Time (s)	5.7			8.9	19.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Lane Group Flow (vph)	235	128	329	1608	1057	0
Turn Type	Prot	Perm	pm+pt	NA	NA	
Protected Phases	4		5	2	6	
Permitted Phases		4	2			
Detector Phase	4	4	5	2	6	
Switch Phase						
Minimum Initial (s)	8.0	8.0	4.0	20.0	20.0	
Minimum Split (s)	31.0	31.0	9.0	31.0	25.5	
Total Split (s)	31.0	31.0	25.0	69.0	44.0	
Total Split (%)	31.0%	31.0%	25.0%	69.0%	44.0%	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?			Yes		Yes	
Recall Mode	None	None	None	C-Min	C-Min	
Act Effct Green (s)	18.9	18.9	71.1	71.1	49.3	
Actuated g/C Ratio	0.19	0.19	0.71	0.71	0.49	
v/c Ratio	0.72	0.32	0.73	0.65	0.63	
Control Delay	50.0	7.9	22.3	10.2	19.6	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay	50.0	7.9	22.3	10.2	19.6	
LOS	D	A	C	B	B	
Approach Delay	35.1			12.2	19.6	
Approach LOS	D			B	B	
Queue Length 50th (m)	43.2	0.0	25.1	75.8	80.8	
Queue Length 95th (m)	62.2	13.4	60.5	125.2	124.0	
Internal Link Dist (m)	55.1			124.6	303.8	
Turn Bay Length (m)			50.0			

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Base Capacity (vph)	451	499	501	2472	1685	
Starvation Cap Reductn	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	
Reduced v/c Ratio	0.52	0.26	0.66	0.65	0.63	

Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 7 (7%), Referenced to phase 2:NBTL and 6:SBT, Start of Green
Natural Cycle: 80
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.73
Intersection Signal Delay: 17.0 Intersection LOS: B
Intersection Capacity Utilization 68.8% ICU Level of Service C
Analysis Period (min) 15

Splits and Phases: 6: Highway 2A & Broadway Ave

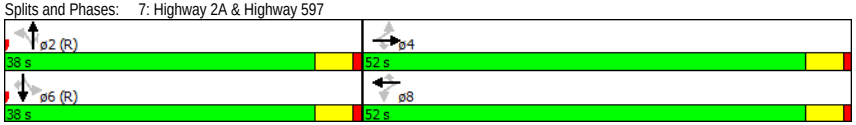
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	126	148	62	101	93	157	132	1145	60	80	630	97
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		50.0	0.0		50.0	50.0		50.0	50.0		50.0
Storage Lanes	0		1	0		1	1		1	1		1
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected		0.978			0.975		0.950			0.950		
Satd. Flow (prot)	0	1719	1512	0	1697	1555	1690	1779	1512	1738	1830	1555
Flt Permitted		0.656			0.501		0.271			0.075		
Satd. Flow (perm)	0	1153	1512	0	872	1555	482	1779	1512	137	1830	1555
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			67			24			25			73
Link Speed (k/h)		50			50			60			60	
Link Distance (m)		67.4			78.0			157.9			368.2	
Travel Time (s)		4.9			5.6			9.5			22.1	
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
Heavy Vehicles (%)	5%	13%	8%	8%	13%	5%	8%	8%	8%	5%	5%	5%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	298	67	0	211	171	143	1245	65	87	685	105
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2		2	6		6
Detector Phase	4	4	4	8	8	8	2	2	2	6	6	6
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	20.0	20.0	20.0	20.0	20.0	20.0
Minimum Split (s)	24.0	24.0	24.0	24.0	24.0	24.0	26.0	26.0	26.0	26.0	26.0	26.0
Total Split (s)	52.0	52.0	52.0	52.0	52.0	52.0	38.0	38.0	38.0	38.0	38.0	38.0
Total Split (%)	57.8%	57.8%	57.8%	57.8%	57.8%	57.8%	42.2%	42.2%	42.2%	42.2%	42.2%	42.2%
Yellow 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
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	None	None	None	None	None	None	C-Max	C-Max	C-Max	C-Max	C-Max	C-Max
Act Effct Green (s)		26.7	26.7		26.7	26.7	53.3	53.3	53.3	53.3	53.3	53.3
Actuated g/C Ratio		0.30	0.30		0.30	0.30	0.59	0.59	0.59	0.59	0.59	0.59
v/c Ratio		0.87	0.14		0.82	0.36	0.50	1.18	0.07	1.09	0.63	0.11
Control Delay		54.0	5.3		52.3	21.5	22.0	113.7	7.7	154.2	17.5	4.9
Queue Delay		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay		54.0	5.3		52.3	21.5	22.0	113.7	7.7	154.2	17.5	4.9
LOS		D	A		D	C	C	F	A	F	B	A
Approach Delay		45.1			38.5			100.0			29.6	
Approach LOS		D			D			F			C	
Queue Length 50th (m)		48.7	0.0		33.8	19.7	13.2	~260.6	2.7	~16.9	70.8	2.1
Queue Length 95th (m)		67.5	7.2		51.2	29.8	#45.8	#374.2	10.3	#38.2	142.2	11.2
Internal Link Dist (m)		43.4			54.0			133.9			344.2	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Bay Length (m)			50.0			50.0	50.0		50.0	50.0		50.0
Base Capacity (vph)		602	821		455	823	285	1053	905	80	1083	950
Starvation Cap Reductn		0	0		0	0	0	0	0	0	0	0
Spillback Cap Reductn		0	0		0	0	0	0	0	0	0	0
Storage Cap Reductn		0	0		0	0	0	0	0	0	0	0
Reduced v/c Ratio		0.50	0.08		0.46	0.21	0.50	1.18	0.07	1.09	0.63	0.11

Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.18
Intersection Signal Delay: 65.8 Intersection LOS: E
Intersection Capacity Utilization 118.8% ICU Level of Service H
Analysis Period (min) 15
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 7: Highway 2A & Highway 597

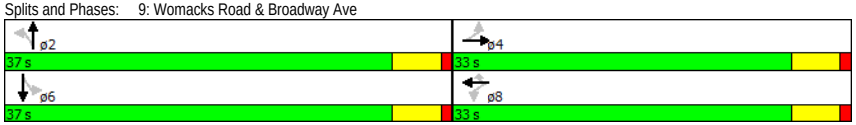


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	32	146	5	58	249	543	5	5	5	321	5	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	50.0		0.0	0.0		0.0	50.0		0.0	50.0		0.0
Storage Lanes	0		0	0		1	0		0	0		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.997				0.850		0.955			0.993	
Flt Protected		0.991			0.991			0.984			0.955	
Satd. Flow (prot)	0	1808	0	0	1813	1555	0	1719	0	0	1735	0
Flt Permitted		0.899			0.904			0.907			0.729	
Satd. Flow (perm)	0	1640	0	0	1654	1555	0	1585	0	0	1324	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		2				590		5			5	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		860.4			145.8			110.5			601.0	
Travel Time (s)		61.9			10.5			8.0			43.3	
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)	0	199	0	0	334	590	0	15	0	0	374	0
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8		8	2			6		
Detector Phase	4	4		8	8	8	2	2		6	6	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0	10.0	20.0	20.0		20.0	20.0	
Minimum Split (s)	23.0	23.0		23.0	23.0	23.0	25.0	25.0		25.0	25.0	
Total Split (s)	33.0	33.0		33.0	33.0	33.0	37.0	37.0		37.0	37.0	
Total Split (%)	47.1%	47.1%		47.1%	47.1%	47.1%	52.9%	52.9%		52.9%	52.9%	
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0	0.0		0.0			0.0	
Total Lost Time (s)		5.0			5.0	5.0		5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	Min	Min		Min	Min	Min	None	None		None	None	
Act Effct Green (s)		18.0			18.0	18.0		23.3			23.3	
Actuated g/C Ratio		0.35			0.35	0.35		0.45			0.45	
v/c Ratio		0.35			0.58	0.64		0.02			0.62	
Control Delay		14.5			18.5	5.0		8.5			17.7	
Queue Delay		0.0			0.0	0.0		0.0			0.0	
Total Delay		14.5			18.5	5.0		8.5			17.7	
LOS		B			B	A		A			B	
Approach Delay		14.5			9.9			8.5			17.7	
Approach LOS		B			A			A			B	
Queue Length 50th (m)		11.4			21.2	0.0		0.5			23.8	
Queue Length 95th (m)		31.0			53.8	17.4		3.5			61.3	
Internal Link Dist (m)		836.4			121.8			86.5			577.0	
Turn Bay Length (m)												

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Base Capacity (vph)		924			931	1133		1022			854	
Starvation Cap Reductn		0			0	0		0			0	
Spillback Cap Reductn		0			0	0		0			0	
Storage Cap Reductn		0			0	0		0			0	
Reduced v/c Ratio		0.22			0.36	0.52		0.01			0.44	

Intersection Summary			
Area Type:	Other		
Cycle Length: 70			
Actuated Cycle Length: 51.7			
Natural Cycle: 50			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.64			
Intersection Signal Delay: 12.4		Intersection LOS: B	
Intersection Capacity Utilization 72.5%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 9: Womacks Road & Broadway Ave



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	487	256	8	2	472	103	10	8	7	67	0	238
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	50.0		50.0	50.0		50.0	0.0		0.0	0.0		0.0
Storage Lanes	1		1	1		1	0		0	0		1
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850		0.961				0.850
Flt Protected	0.950			0.950				0.981			0.950	
Satd. Flow (prot)	1690	3230	1555	1738	3174	1512	0	1725	0	0	1690	1512
Flt Permitted	0.292			0.581				0.894			0.739	
Satd. Flow (perm)	519	3230	1555	1063	3174	1512	0	1572	0	0	1315	1512
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			22			112		8				259
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		267.0			499.4			80.3			111.2	
Travel Time (s)		19.2			36.0			5.8			8.0	
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
Heavy Vehicles (%)	8%	13%	5%	5%	15%	8%	5%	5%	5%	8%	5%	8%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	529	278	9	2	513	112	0	28	0	0	73	259
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA		Perm	NA	Perm
Protected Phases	7	4			8			2			6	
Permitted Phases	4		4	8		8	2			6		6
Detector Phase	7	4	4	8	8	8	2	2		6	6	6
Switch Phase												
Minimum Initial (s)	8.0	20.0	20.0	20.0	20.0	20.0	10.0	10.0		8.0	8.0	8.0
Minimum Split (s)	13.0	25.0	25.0	25.0	25.0	25.0	34.0	34.0		34.0	34.0	34.0
Total Split (s)	39.0	66.0	66.0	27.0	27.0	27.0	34.0	34.0		34.0	34.0	34.0
Total Split (%)	39.0%	66.0%	66.0%	27.0%	27.0%	27.0%	34.0%	34.0%		34.0%	34.0%	34.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0		1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0		0.0			0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0		5.0			5.0	5.0
Lead/Lag	Lead			Lag	Lag	Lag						
Lead-Lag Optimize?	Yes			Yes	Yes	Yes						
Recall Mode	None	None	None	None	None	None	Min	Min		Min	Min	Min
Act Effct Green (s)	52.2	52.2	52.2	20.9	20.9	20.9		13.3			13.3	13.3
Actuated g/C Ratio	0.69	0.69	0.69	0.28	0.28	0.28		0.18			0.18	0.18
v/c Ratio	0.70	0.13	0.01	0.01	0.59	0.22		0.10			0.32	0.54
Control Delay	14.0	4.9	1.2	27.0	29.6	7.6		22.7			32.6	8.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0			0.0	0.0
Total Delay	14.0	4.9	1.2	27.0	29.6	7.6		22.7			32.6	8.5
LOS	B	A	A	C	C	A		C			C	A
Approach Delay		10.7			25.6			22.7			13.8	
Approach LOS		B			C			C			B	
Queue Length 50th (m)	23.6	4.7	0.0	0.2	31.7	0.0		2.4			9.3	0.0
Queue Length 95th (m)	94.7	16.6	0.9	2.2	67.0	13.2		9.2			21.7	17.4
Internal Link Dist (m)		243.0			475.4			56.3			87.2	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Bay Length (m)	50.0		50.0	50.0		50.0						
Base Capacity (vph)	897	2670	1289	317	948	530		624			518	752
Starvation Cap Reductn	0	0	0	0	0	0		0			0	0
Spillback Cap Reductn	0	0	0	0	0	0		0			0	0
Storage Cap Reductn	0	0	0	0	0	0		0			0	0
Reduced v/c Ratio	0.59	0.10	0.01	0.01	0.54	0.21		0.04			0.14	0.34

Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 75.8
Natural Cycle: 90
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.70
Intersection Signal Delay: 16.7 — Intersection LOS: B
Intersection Capacity Utilization 64.5% — ICU Level of Service C
Analysis Period (min) 15

Splits and Phases: 19: Highway 597 & Vista Trail

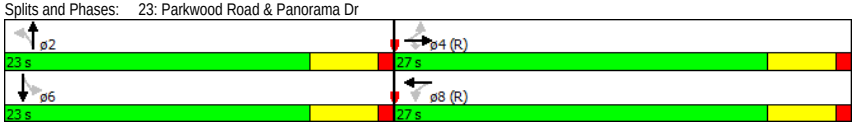
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	288	192	42	13	136	51	46	50	35	63	37	258
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	50.0		0.0	50.0		0.0
Storage Lanes	0		1	0		0	1		0	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850		0.966			0.938			0.869	
Flt Protected		0.971			0.997		0.950			0.950		
Satd. Flow (prot)	0	1777	1555	0	1762	0	1706	1684	0	1706	1560	0
Flt Permitted		0.696			0.966		0.408			0.697		
Satd. Flow (perm)	0	1273	1555	0	1707	0	733	1684	0	1251	1560	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			46		44			38			280	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		64.3			305.1			483.3			551.5	
Travel Time (s)		4.6			22.0			34.8			39.7	
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
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%	7%	7%	7%	7%	7%	7%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	522	46	0	217	0	50	92	0	68	320	0
Turn Type	Perm	NA	Perm	Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8			2			6		
Detector Phase	4	4	4	8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
Minimum Split (s)	23.0	23.0	23.0	23.0	23.0		23.0	23.0		23.0	23.0	
Total Split (s)	27.0	27.0	27.0	27.0	27.0		23.0	23.0		23.0	23.0	
Total Split (%)	54.0%	54.0%	54.0%	54.0%	54.0%		46.0%	46.0%		46.0%	46.0%	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0	0.0		0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		5.0	5.0		5.0		5.0	5.0		5.0	5.0	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	C-Min	C-Min	C-Min	C-Min	C-Min		None	None		None	None	
Act Effct Green (s)		30.2	30.2		30.2		9.8	9.8		9.8	9.8	
Actuated g/C Ratio		0.60	0.60		0.60		0.20	0.20		0.20	0.20	
v/c Ratio		0.68	0.05		0.21		0.35	0.26		0.28	0.60	
Control Delay		16.2	0.8		5.5		23.0	11.5		17.5	7.3	
Queue Delay		0.8	0.0		0.0		0.0	0.0		0.0	0.1	
Total Delay		17.0	0.8		5.5		23.0	11.5		17.5	7.4	
LOS		B	A		A		C	B		B	A	
Approach Delay		15.7			5.5			15.6			9.1	
Approach LOS		B			A			B			A	
Queue Length 50th (m)		26.1	0.2		5.0		3.5	3.4		5.4	2.5	
Queue Length 95th (m)		#103.3	1.2		19.5		7.8	8.9		8.5	11.0	
Internal Link Dist (m)		40.3			281.1			459.3			527.5	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Bay Length (m)							50.0			50.0		
Base Capacity (vph)		769	957		1048		263	630		450	740	
Starvation Cap Reductn		73	0		0		0	0		0	0	
Spillback Cap Reductn		0	0		120		5	0		0	37	
Storage Cap Reductn		0	0		0		0	0		0	0	
Reduced v/c Ratio		0.75	0.05		0.23		0.19	0.15		0.15	0.46	

Intersection Summary

Area Type: Other
Cycle Length: 50
Actuated Cycle Length: 50
Offset: 26 (52%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green
Natural Cycle: 60
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.68
Intersection Signal Delay: 12.1 Intersection LOS: B
Intersection Capacity Utilization 74.9% ICU Level of Service D
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 23: Parkwood Road & Panorama Dr



APPENDIX E 16.5K HORIZON SYNCHRO MODELLING

Intersection	
Int Delay, s/veh	3.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Vol, veh/h	12	164	11	696	1257	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	0	-	-	-	-	-
Veh in Median Storage, #	1	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	8	8	5	5	8	8
Mvmt Flow	14	186	12	791	1428	74

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1885	751	1502	0	-	0
Stage 1	1465	-	-	-	-	-
Stage 2	420	-	-	-	-	-
Critical Hdwy	6.96	7.06	4.2	-	-	-
Critical Hdwy Stg 1	5.96	-	-	-	-	-
Critical Hdwy Stg 2	5.96	-	-	-	-	-
Follow-up Hdwy	3.58	3.38	2.25	-	-	-
Pot Cap-1 Maneuver	58	340	428	-	-	-
Stage 1	169	-	-	-	-	-
Stage 2	614	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	55	340	428	-	-	-
Mov Cap-2 Maneuver	136	-	-	-	-	-
Stage 1	169	-	-	-	-	-
Stage 2	581	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	36	0.6	0
HCM LOS	E		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	428	-	308	-	-
HCM Lane V/C Ratio	0.029	-	0.649	-	-
HCM Control Delay (s)	13.7	0.4	36	-	-
HCM Lane LOS	B	A	E	-	-
HCM 95th %tile Q(veh)	0.1	-	4.2	-	-

Intersection	
Int Delay, s/veh	3.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Vol, veh/h	129	18	12	127	85	217
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	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	8	8	5	5	5	5
Mvmt Flow	147	20	14	144	97	247

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	392	220	343	0	-	0
Stage 1	220	-	-	-	-	-
Stage 2	172	-	-	-	-	-
Critical Hdwy	6.48	6.28	4.15	-	-	-
Critical Hdwy Stg 1	5.48	-	-	-	-	-
Critical Hdwy Stg 2	5.48	-	-	-	-	-
Follow-up Hdwy	3.572	3.372	2.245	-	-	-
Pot Cap-1 Maneuver	601	805	1199	-	-	-
Stage 1	803	-	-	-	-	-
Stage 2	844	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	593	805	1199	-	-	-
Mov Cap-2 Maneuver	593	-	-	-	-	-
Stage 1	803	-	-	-	-	-
Stage 2	833	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	12.7	0.7	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1199	-	593	805	-	-
HCM Lane V/C Ratio	0.011	-	0.247	0.025	-	-
HCM Control Delay (s)	8	0	13.1	9.6	-	-
HCM Lane LOS	A	A	B	A	-	-
HCM 95th %tile Q(veh)	0	-	1	0.1	-	-

Intersection	
Int Delay, s/veh	0.8

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Vol, veh/h	4	7	70	5	5	71
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	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	5	5	5	5	5	5
Mvmt Flow	5	8	80	6	6	81

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	174	82	0	0	85	0
Stage 1	82	-	-	-	-	-
Stage 2	92	-	-	-	-	-
Critical Hdwy	6.45	6.25	-	-	4.15	-
Critical Hdwy Stg 1	5.45	-	-	-	-	-
Critical Hdwy Stg 2	5.45	-	-	-	-	-
Follow-up Hdwy	3.545	3.345	-	-	2.245	-
Pot Cap-1 Maneuver	809	969	-	-	1493	-
Stage 1	934	-	-	-	-	-
Stage 2	924	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	806	969	-	-	1493	-
Mov Cap-2 Maneuver	806	-	-	-	-	-
Stage 1	934	-	-	-	-	-
Stage 2	920	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9	0	0.5
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	903	1493	-
HCM Lane V/C Ratio	-	-	0.014	0.004	-
HCM Control Delay (s)	-	-	9	7.4	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0	0	-

Intersection	
Int Delay, s/veh	4.9

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Vol, veh/h	17	24	40	12	74	26
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	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	5	5	5	5	5	5
Mvmt Flow	19	27	45	14	84	30

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	250	52	0	0	59	0
Stage 1	52	-	-	-	-	-
Stage 2	198	-	-	-	-	-
Critical Hdwy	6.45	6.25	-	-	4.15	-
Critical Hdwy Stg 1	5.45	-	-	-	-	-
Critical Hdwy Stg 2	5.45	-	-	-	-	-
Follow-up Hdwy	3.545	3.345	-	-	2.245	-
Pot Cap-1 Maneuver	732	1007	-	-	1526	-
Stage 1	963	-	-	-	-	-
Stage 2	828	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	691	1007	-	-	1526	-
Mov Cap-2 Maneuver	691	-	-	-	-	-
Stage 1	963	-	-	-	-	-
Stage 2	782	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.5	0	5.5
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	846	1526	-
HCM Lane V/C Ratio	-	-	0.055	0.055	-
HCM Control Delay (s)	-	-	9.5	7.5	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.2	0.2	-

Intersection	
Int Delay, s/veh	4.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR
Vol, veh/h	19	15	5	16	39	10	6	44	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-
Peak Hour Factor	88	88	88	88	88	88	88	88	88
Heavy Vehicles, %	8	8	8	8	8	8	5	5	5
Mvmt Flow	22	17	6	18	44	11	7	50	6

Major/Minor	Minor2			Minor1			Major1		
Conflicting Flow All	183	158	66	166	174	53	85	0	0
Stage 1	89	89	-	66	66	-	-	-	-
Stage 2	94	69	-	100	108	-	-	-	-
Critical Hdwy	7.18	6.58	6.28	7.18	6.58	6.28	4.15	-	-
Critical Hdwy Stg 1	6.18	5.58	-	6.18	5.58	-	-	-	-
Critical Hdwy Stg 2	6.18	5.58	-	6.18	5.58	-	-	-	-
Follow-up Hdwy	3.572	4.072	3.372	3.572	4.072	3.372	2.245	-	-
Pot Cap-1 Maneuver	765	723	981	785	709	998	1493	-	-
Stage 1	904	810	-	930	828	-	-	-	-
Stage 2	898	826	-	892	794	-	-	-	-
Platoon blocked, %								-	-
Mov Cap-1 Maneuver	713	714	981	759	700	998	1493	-	-
Mov Cap-2 Maneuver	713	714	-	759	700	-	-	-	-
Stage 1	899	804	-	925	824	-	-	-	-
Stage 2	836	822	-	861	788	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	10.2	10.3	0.8
HCM LOS	B	B	

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1493	-	-	739	749	1530	-	-
HCM Lane V/C Ratio	0.005	-	-	0.06	0.099	0.007	-	-
HCM Control Delay (s)	7.4	0	-	10.2	10.3	7.4	0	-
HCM Lane LOS	A	A	-	B	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.2	0.3	0	-	-

Intersection	
Int Delay, s/veh	

Movement	SBL	SBT	SBR
Vol, veh/h	10	41	34
Conflicting Peds, #/hr	0	0	0
Sign Control	Free	Free	Free
RT Channelized	-	-	None
Storage Length	-	-	-
Veh in Median Storage, #	-	0	-
Grade, %	-	0	-
Peak Hour Factor	88	88	88
Heavy Vehicles, %	5	5	5
Mvmt Flow	11	47	39

Major/Minor	Major2		
Conflicting Flow All	56	0	0
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	4.15	-	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	2.245	-	-
Pot Cap-1 Maneuver	1530	-	-
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	1530	-	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	SB
HCM Control Delay, s	0.9
HCM LOS	

Minor Lane/Major Mvmt

Intersection	
Int Delay, s/veh	4.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR
Vol, veh/h	4	1	49	0	1	1	39	29	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-
Peak Hour Factor	88	88	88	88	88	88	88	88	88
Heavy Vehicles, %	5	5	5	5	5	5	5	5	5
Mvmt Flow	5	1	56	0	1	1	44	33	0

Major/Minor	Minor2			Minor1			Major1		
Conflicting Flow All	182	181	59	209	188	33	66	0	0
Stage 1	59	59	-	122	122	-	-	-	-
Stage 2	123	122	-	87	66	-	-	-	-
Critical Hdwy	7.15	6.55	6.25	7.15	6.55	6.25	4.15	-	-
Critical Hdwy Stg 1	6.15	5.55	-	6.15	5.55	-	-	-	-
Critical Hdwy Stg 2	6.15	5.55	-	6.15	5.55	-	-	-	-
Follow-up Hdwy	3.545	4.045	3.345	3.545	4.045	3.345	2.245	-	-
Pot Cap-1 Maneuver	773	708	998	742	701	1032	1517	-	-
Stage 1	945	840	-	875	789	-	-	-	-
Stage 2	874	789	-	913	834	-	-	-	-
Platoon blocked, %								-	-
Mov Cap-1 Maneuver	754	687	998	684	680	1032	1517	-	-
Mov Cap-2 Maneuver	754	687	-	684	680	-	-	-	-
Stage 1	917	840	-	849	765	-	-	-	-
Stage 2	846	765	-	861	834	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	9	9.4	4.3
HCM LOS	A	A	

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1517	-	-	967	820	1560	-	-
HCM Lane V/C Ratio	0.029	-	-	0.063	0.003	-	-	-
HCM Control Delay (s)	7.4	0	-	9	9.4	0	-	-
HCM Lane LOS	A	A	-	A	A	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.2	0	0	-	-

Intersection	
Int Delay, s/veh	

Movement	SBL	SBT	SBR
Vol, veh/h	0	45	13
Conflicting Peds, #/hr	0	0	0
Sign Control	Free	Free	Free
RT Channelized	-	-	None
Storage Length	-	-	-
Veh in Median Storage, #	-	0	-
Grade, %	-	0	-
Peak Hour Factor	88	88	88
Heavy Vehicles, %	5	5	5
Mvmt Flow	0	51	15

Major/Minor	Major2		
Conflicting Flow All	33	0	0
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	4.15	-	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	2.245	-	-
Pot Cap-1 Maneuver	1560	-	-
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	1560	-	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	SB
HCM Control Delay, s	0
HCM LOS	

Minor Lane/Major Mvmt

Intersection	
Int Delay, s/veh	9.9

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Vol, veh/h	272	22	125	42	48	455
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	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	5	5	5	5	5	5
Mvmt Flow	309	25	142	48	55	517

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	534	95	0	0	190	0
Stage 1	166	-	-	-	-	-
Stage 2	368	-	-	-	-	-
Critical Hdwy	6.9	7	-	-	4.2	-
Critical Hdwy Stg 1	5.9	-	-	-	-	-
Critical Hdwy Stg 2	5.9	-	-	-	-	-
Follow-up Hdwy	3.55	3.35	-	-	2.25	-
Pot Cap-1 Maneuver	469	933	-	-	1360	-
Stage 1	837	-	-	-	-	-
Stage 2	662	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	442	933	-	-	1360	-
Mov Cap-2 Maneuver	442	-	-	-	-	-
Stage 1	837	-	-	-	-	-
Stage 2	624	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	30.9	0	0.9
HCM LOS	D		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	460	1360	-
HCM Lane V/C Ratio	-	-	0.726	0.04	-
HCM Control Delay (s)	-	-	30.9	7.8	0.2
HCM Lane LOS	-	-	D	A	A
HCM 95th %tile Q(veh)	-	-	5.8	0.1	-

Intersection	
Int Delay, s/veh	3.8

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Vol, veh/h	31	36	167	138	517	156
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	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	25	25	5	5	8	8
Mvmt Flow	35	41	190	157	588	177

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1134	382	765	0	-	0
Stage 1	676	-	-	-	-	-
Stage 2	458	-	-	-	-	-
Critical Hdwy	7.3	7.4	4.2	-	-	-
Critical Hdwy Stg 1	6.3	-	-	-	-	-
Critical Hdwy Stg 2	6.3	-	-	-	-	-
Follow-up Hdwy	3.75	3.55	2.25	-	-	-
Pot Cap-1 Maneuver	164	555	825	-	-	-
Stage 1	410	-	-	-	-	-
Stage 2	542	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	123	555	825	-	-	-
Mov Cap-2 Maneuver	123	-	-	-	-	-
Stage 1	410	-	-	-	-	-
Stage 2	405	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	31.4	6	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	825	-	211	-	-
HCM Lane V/C Ratio	0.23	-	0.361	-	-
HCM Control Delay (s)	10.7	0.4	31.4	-	-
HCM Lane LOS	B	A	D	-	-
HCM 95th %tile Q(veh)	0.9	-	1.6	-	-

Intersection	
Int Delay, s/veh	1.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR
Vol, veh/h	1	91	3	1	40	2	1	1	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-
Peak Hour Factor	88	88	88	88	88	88	88	88	88
Heavy Vehicles, %	5	5	5	5	5	5	5	5	5
Mvmt Flow	1	103	3	1	45	2	1	1	5

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	48	0	0	107	0	0	160	157	105
Stage 1	-	-	-	-	-	-	107	107	-
Stage 2	-	-	-	-	-	-	53	50	-
Critical Hdwy	4.15	-	-	4.15	-	-	7.15	6.55	6.25
Critical Hdwy Stg 1	-	-	-	-	-	-	6.15	5.55	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.15	5.55	-
Follow-up Hdwy	2.245	-	-	2.245	-	-	3.545	4.045	3.345
Pot Cap-1 Maneuver	1540	-	-	1465	-	-	799	730	941
Stage 1	-	-	-	-	-	-	891	801	-
Stage 2	-	-	-	-	-	-	952	847	-
Platoon blocked, %		-	-		-	-			
Mov Cap-1 Maneuver	1540	-	-	1465	-	-	791	729	941
Mov Cap-2 Maneuver	-	-	-	-	-	-	791	729	-
Stage 1	-	-	-	-	-	-	890	800	-
Stage 2	-	-	-	-	-	-	942	846	-

Approach	EB	WB	NB
HCM Control Delay, s	0.1	0.2	9.2
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	871	1540	-	-	1465	-	-	884
HCM Lane V/C Ratio	0.008	0.001	-	-	0.001	-	-	0.018
HCM Control Delay (s)	9.2	7.3	0	-	7.5	0	-	9.1
HCM Lane LOS	A	A	A	-	A	A	-	A
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	0.1

Intersection	
Int Delay, s/veh	

Movement	SBL	SBT	SBR
Vol, veh/h	6	1	7
Conflicting Peds, #/hr	0	0	0
Sign Control	Stop	Stop	Stop
RT Channelized	-	-	None
Storage Length	-	-	-
Veh in Median Storage, #	-	0	-
Grade, %	-	0	-
Peak Hour Factor	88	88	88
Heavy Vehicles, %	5	5	5
Mvmt Flow	7	1	8

Major/Minor	Minor2		
Conflicting Flow All	159	158	47
Stage 1	49	49	-
Stage 2	110	109	-
Critical Hdwy	7.15	6.55	6.25
Critical Hdwy Stg 1	6.15	5.55	-
Critical Hdwy Stg 2	6.15	5.55	-
Follow-up Hdwy	3.545	4.045	3.345
Pot Cap-1 Maneuver	800	729	1014
Stage 1	957	848	-
Stage 2	888	799	-
Platoon blocked, %			
Mov Cap-1 Maneuver	794	728	1014
Mov Cap-2 Maneuver	794	728	-
Stage 1	956	847	-
Stage 2	882	798	-

Approach	SB
HCM Control Delay, s	9.1
HCM LOS	A

Minor Lane/Major Mvmt

Intersection	
Int Delay, s/veh	2.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR
Vol, veh/h	51	44	0	0	222	28	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-
Peak Hour Factor	88	88	88	88	88	88	88	88	88
Heavy Vehicles, %	5	5	5	5	5	5	5	5	5
Mvmt Flow	58	50	0	0	252	32	0	0	0

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	284	0	0	50	0	0	469	450	50
Stage 1	-	-	-	-	-	-	166	166	-
Stage 2	-	-	-	-	-	-	303	284	-
Critical Hdwy	4.15	-	-	4.15	-	-	7.15	6.55	6.25
Critical Hdwy Stg 1	-	-	-	-	-	-	6.15	5.55	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.15	5.55	-
Follow-up Hdwy	2.245	-	-	2.245	-	-	3.545	4.045	3.345
Pot Cap-1 Maneuver	1261	-	-	1537	-	-	500	500	1010
Stage 1	-	-	-	-	-	-	829	755	-
Stage 2	-	-	-	-	-	-	700	671	-
Platoon blocked, %		-	-		-	-			
Mov Cap-1 Maneuver	1261	-	-	1537	-	-	438	477	1010
Mov Cap-2 Maneuver	-	-	-	-	-	-	438	477	-
Stage 1	-	-	-	-	-	-	790	720	-
Stage 2	-	-	-	-	-	-	635	671	-

Approach	EB	WB	NB
HCM Control Delay, s	4.3	0	0
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	1261	-	-	1537	-	-	763
HCM Lane V/C Ratio	-	0.046	-	-	-	-	-	0.092
HCM Control Delay (s)	0	8	0	-	0	-	-	10.2
HCM Lane LOS	A	A	A	-	A	-	-	B
HCM 95th %tile Q(veh)	-	0.1	-	-	0	-	-	0.3

Intersection	
Int Delay, s/veh	

Movement	SBL	SBT	SBR
Vol, veh/h	0	0	62
Conflicting Peds, #/hr	0	0	0
Sign Control	Stop	Stop	Stop
RT Channelized	-	-	None
Storage Length	-	-	-
Veh in Median Storage, #	-	0	-
Grade, %	-	0	-
Peak Hour Factor	88	88	88
Heavy Vehicles, %	5	5	5
Mvmt Flow	0	0	70

Major/Minor	Minor2		
Conflicting Flow All	434	434	268
Stage 1	268	268	-
Stage 2	166	166	-
Critical Hdwy	7.15	6.55	6.25
Critical Hdwy Stg 1	6.15	5.55	-
Critical Hdwy Stg 2	6.15	5.55	-
Follow-up Hdwy	3.545	4.045	3.345
Pot Cap-1 Maneuver	527	511	763
Stage 1	731	682	-
Stage 2	829	755	-
Platoon blocked, %			
Mov Cap-1 Maneuver	508	487	763
Mov Cap-2 Maneuver	508	487	-
Stage 1	697	682	-
Stage 2	790	720	-

Approach	SB
HCM Control Delay, s	10.2
HCM LOS	B

Minor Lane/Major Mvmt

Intersection	
Int Delay, s/veh	8.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR
Vol, veh/h	161	49	11	0	47	3	11	24	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None
Storage Length	500	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-
Peak Hour Factor	88	88	88	88	88	88	88	88	88
Heavy Vehicles, %	8	8	5	5	5	5	5	5	5
Mvmt Flow	183	56	12	0	53	3	12	27	0

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	57	0	0	68	0	0	626	485	62
Stage 1	-	-	-	-	-	-	428	428	-
Stage 2	-	-	-	-	-	-	198	57	-
Critical Hdwy	4.18	-	-	4.15	-	-	7.15	6.55	6.25
Critical Hdwy Stg 1	-	-	-	-	-	-	6.15	5.55	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.15	5.55	-
Follow-up Hdwy	2.272	-	-	2.245	-	-	3.545	4.045	3.345
Pot Cap-1 Maneuver	1510	-	-	1514	-	-	392	478	995
Stage 1	-	-	-	-	-	-	599	580	-
Stage 2	-	-	-	-	-	-	797	841	-
Platoon blocked, %		-	-		-	-			
Mov Cap-1 Maneuver	1510	-	-	1514	-	-	250	420	995
Mov Cap-2 Maneuver	-	-	-	-	-	-	312	443	-
Stage 1	-	-	-	-	-	-	526	510	-
Stage 2	-	-	-	-	-	-	570	841	-

Approach	EB	WB	NB
HCM Control Delay, s	5.6	0	15.2
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	391	1510	-	-	1514	-	-	866
HCM Lane V/C Ratio	0.102	0.121	-	-	-	-	-	0.332
HCM Control Delay (s)	15.2	7.7	-	-	0	-	-	11.2
HCM Lane LOS	C	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	0.3	0.4	-	-	0	-	-	1.5

Intersection	
Int Delay, s/veh	

Movement	SBL	SBT	SBR
Vol, veh/h	1	29	223
Conflicting Peds, #/hr	0	0	0
Sign Control	Stop	Stop	Stop
RT Channelized	-	-	None
Storage Length	-	-	-
Veh in Median Storage, #	-	1	-
Grade, %	-	0	-
Peak Hour Factor	88	88	88
Heavy Vehicles, %	10	5	10
Mvmt Flow	1	33	253

Major/Minor	Minor2		
Conflicting Flow All	496	489	55
Stage 1	55	55	-
Stage 2	441	434	-
Critical Hdwy	7.2	6.55	6.3
Critical Hdwy Stg 1	6.2	5.55	-
Critical Hdwy Stg 2	6.2	5.55	-
Follow-up Hdwy	3.59	4.045	3.39
Pot Cap-1 Maneuver	471	475	990
Stage 1	937	843	-
Stage 2	580	576	-
Platoon blocked, %			
Mov Cap-1 Maneuver	408	417	990
Mov Cap-2 Maneuver	430	448	-
Stage 1	823	843	-
Stage 2	482	506	-

Approach	SB
HCM Control Delay, s	11.2
HCM LOS	B

Minor Lane/Major Mvmt

Intersection	
Int Delay, s/veh	2.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR
Vol, veh/h	166	280	92	1	123	0	9	1	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None
Storage Length	500	-	-	0	-	-	500	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-
Peak Hour Factor	88	88	88	88	88	88	88	88	88
Heavy Vehicles, %	8	10	18	18	13	8	18	18	18
Mvmt Flow	189	318	105	1	140	0	10	1	1

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	140	0	0	423	0	0	890	890	370
Stage 1	-	-	-	-	-	-	748	748	-
Stage 2	-	-	-	-	-	-	142	142	-
Critical Hdwy	4.18	-	-	4.28	-	-	7.28	6.68	6.38
Critical Hdwy Stg 1	-	-	-	-	-	-	6.28	5.68	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.28	5.68	-
Follow-up Hdwy	2.272	-	-	2.362	-	-	3.662	4.162	3.462
Pot Cap-1 Maneuver	1407	-	-	1056	-	-	247	266	641
Stage 1	-	-	-	-	-	-	381	397	-
Stage 2	-	-	-	-	-	-	824	750	-
Platoon blocked, %		-	-		-	-			
Mov Cap-1 Maneuver	1407	-	-	1056	-	-	218	230	641
Mov Cap-2 Maneuver	-	-	-	-	-	-	279	287	-
Stage 1	-	-	-	-	-	-	330	344	-
Stage 2	-	-	-	-	-	-	810	749	-

Approach	EB	WB	NB
HCM Control Delay, s	2.5	0.1	17.6
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	279	396	1407	-	-	1056	-	-	291	892
HCM Lane V/C Ratio	0.037	0.006	0.134	-	-	0.001	-	-	0.004	0.017
HCM Control Delay (s)	18.4	14.1	8	-	-	8.4	-	-	17.4	9.1
HCM Lane LOS	C	B	A	-	-	A	-	-	C	A
HCM 95th %tile Q(veh)	0.1	0	0.5	-	-	0	-	-	0	0.1

Intersection	
Int Delay, s/veh	

Movement	SBL	SBT	SBR
Vol, veh/h	1	0	13
Conflicting Peds, #/hr	0	0	0
Sign Control	Stop	Stop	Stop
RT Channelized	-	-	None
Storage Length	-	-	0
Veh in Median Storage, #	-	1	-
Grade, %	-	0	-
Peak Hour Factor	88	88	88
Heavy Vehicles, %	8	8	8
Mvmt Flow	1	0	15

Major/Minor	Minor2		
Conflicting Flow All	891	942	140
Stage 1	142	142	-
Stage 2	749	800	-
Critical Hdwy	7.18	6.58	6.28
Critical Hdwy Stg 1	6.18	5.58	-
Critical Hdwy Stg 2	6.18	5.58	-
Follow-up Hdwy	3.572	4.072	3.372
Pot Cap-1 Maneuver	257	257	892
Stage 1	847	768	-
Stage 2	395	389	-
Platoon blocked, %			
Mov Cap-1 Maneuver	229	222	892
Mov Cap-2 Maneuver	291	289	-
Stage 1	733	767	-
Stage 2	340	337	-

Approach	SB
HCM Control Delay, s	9.7
HCM LOS	A

Minor Lane/Major Mvmt

Intersection	
Int Delay, s/veh	2.5

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	75	550	311	10	16	151
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	1	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	5	5	5	5	5	5
Mvmt Flow	85	625	353	11	18	172

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	365	0	-	0	842	182
Stage 1	-	-	-	-	359	-
Stage 2	-	-	-	-	483	-
Critical Hdwy	4.2	-	-	-	6.9	7
Critical Hdwy Stg 1	-	-	-	-	5.9	-
Critical Hdwy Stg 2	-	-	-	-	5.9	-
Follow-up Hdwy	2.25	-	-	-	3.55	3.35
Pot Cap-1 Maneuver	1169	-	-	-	297	820
Stage 1	-	-	-	-	669	-
Stage 2	-	-	-	-	578	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1169	-	-	-	264	820
Mov Cap-2 Maneuver	-	-	-	-	382	-
Stage 1	-	-	-	-	669	-
Stage 2	-	-	-	-	514	-

Approach	EB	WB	SB
HCM Control Delay, s	1.4	0	11.5
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1169	-	-	-	739
HCM Lane V/C Ratio	0.073	-	-	-	0.257
HCM Control Delay (s)	8.3	0.4	-	-	11.5
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0.2	-	-	-	1

Intersection	
Int Delay, s/veh	1.8

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	1	189	237	98	74	20
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	500	-	-	0	0	-
Veh in Median Storage, #	-	0	0	-	1	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	5	5	5	5	5	5
Mvmt Flow	1	215	269	111	84	23

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	269	0	-	0	486	269
Stage 1	-	-	-	-	269	-
Stage 2	-	-	-	-	217	-
Critical Hdwy	4.15	-	-	-	6.45	6.25
Critical Hdwy Stg 1	-	-	-	-	5.45	-
Critical Hdwy Stg 2	-	-	-	-	5.45	-
Follow-up Hdwy	2.245	-	-	-	3.545	3.345
Pot Cap-1 Maneuver	1277	-	-	-	535	762
Stage 1	-	-	-	-	769	-
Stage 2	-	-	-	-	812	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1277	-	-	-	535	762
Mov Cap-2 Maneuver	-	-	-	-	604	-
Stage 1	-	-	-	-	769	-
Stage 2	-	-	-	-	811	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	11.9
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1277	-	-	-	632
HCM Lane V/C Ratio	0.001	-	-	-	0.169
HCM Control Delay (s)	7.8	-	-	-	11.9
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.6

Intersection	
Intersection Delay, s/veh	16.2
Intersection LOS	C

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	1	3	6	0	180	16	21	0	46	260	99
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles, %	5	18	18	18	5	5	5	5	5	5	5	5
Mvmt Flow	0	1	3	7	0	205	18	24	0	52	295	112
Number of Lanes	0	1	1	0	0	1	1	0	0	0	2	1

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	2	2	2
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	2	3	2
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	3	2	2
HCM Control Delay	11.5	16.9	13.3
HCM LOS	B	C	B

Lane	NBLn1	NBLn2	NBLn3	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	35%	0%	0%	100%	0%	100%	0%	6%	0%
Vol Thru, %	65%	100%	0%	0%	33%	0%	43%	94%	99%
Vol Right, %	0%	0%	100%	0%	67%	0%	57%	0%	1%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	133	173	99	1	9	180	37	265	252
LT Vol	87	173	0	0	3	0	16	249	249
Through Vol	0	0	99	0	6	0	21	0	3
RT Vol	46	0	0	1	0	180	0	16	0
Lane Flow Rate	151	197	112	1	10	205	42	301	286
Geometry Grp	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.31	0.396	0.204	0.003	0.024	0.472	0.086	0.574	0.543
Departure Headway (Hd)	7.406	7.23	6.518	9.49	8.498	8.302	7.391	7.005	6.966
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	487	500	552	378	422	436	486	517	520
Service Time	5.122	4.946	4.234	7.224	6.231	6.02	5.109	4.705	4.666
HCM Lane V/C Ratio	0.31	0.394	0.203	0.003	0.024	0.47	0.086	0.582	0.55
HCM Control Delay	13.4	14.6	10.9	12.3	11.4	18.2	10.8	18.7	17.6
HCM Lane LOS	B	B	B	B	B	C	B	C	C
HCM 95th-tile Q	1.3	1.9	0.8	0	0.1	2.5	0.3	3.6	3.2

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Vol, veh/h	0	16	497	3
Peak Hour Factor	0.88	0.88	0.88	0.88
Heavy Vehicles, %	5	5	5	5
Mvmt Flow	0	18	565	3
Number of Lanes	0	0	2	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	3
Conflicting Approach Left	WB
Conflicting Lanes Left	2
Conflicting Approach Right	EB
Conflicting Lanes Right	2
HCM Control Delay	18.2
HCM LOS	C

Lane

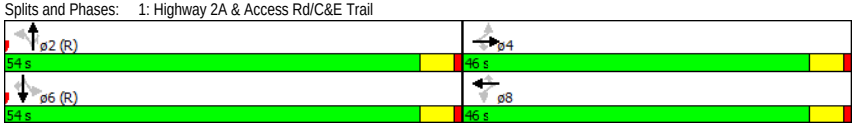
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	17	19	76	342	29	267	90	657	175	125	512	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	50.0		50.0	50.0		50.0
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1738	1830	1555	1659	1830	1484	1738	3380	1484	1659	3380	1555
Flt Permitted	0.736			0.743			0.399			0.317		
Satd. Flow (perm)	1347	1830	1555	1298	1830	1484	730	3380	1484	554	3380	1555
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			86			147			199			22
Link Speed (k/h)		50			50			80			80	
Link Distance (m)		55.8			82.5			547.5			300.8	
Travel Time (s)		4.0			5.9			24.6			13.5	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles (%)	5%	5%	5%	10%	5%	10%	5%	8%	10%	10%	8%	5%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	19	22	86	389	33	303	102	747	199	142	582	20
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2		2	6		6
Detector Phase	4	4	4	8	8	8	2	2	2	6	6	6
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	20.0	20.0	20.0	20.0	20.0	20.0
Minimum Split (s)	30.0	30.0	30.0	30.0	30.0	30.0	25.0	25.0	25.0	25.0	25.0	25.0
Total Split (s)	46.0	46.0	46.0	46.0	46.0	46.0	54.0	54.0	54.0	54.0	54.0	54.0
Total Split (%)	46.0%	46.0%	46.0%	46.0%	46.0%	46.0%	54.0%	54.0%	54.0%	54.0%	54.0%	54.0%
Yellow 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
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	None	None	None	None	None	None	C-Min	C-Min	C-Min	C-Min	C-Min	C-Min
Act Effct Green (s)	35.1	35.1	35.1	35.1	35.1	35.1	54.9	54.9	54.9	54.9	54.9	54.9
Actuated g/C Ratio	0.35	0.35	0.35	0.35	0.35	0.35	0.55	0.55	0.55	0.55	0.55	0.55
v/c Ratio	0.04	0.03	0.14	0.85	0.05	0.49	0.26	0.40	0.22	0.47	0.31	0.02
Control Delay	18.7	18.6	4.7	46.4	18.8	13.6	7.4	6.2	2.3	22.4	13.9	5.2
Queue Delay	0.0	0.0	0.0	5.7	0.0	1.1	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	18.7	18.6	4.7	52.1	18.8	14.7	7.4	6.2	2.3	22.4	13.9	5.2
LOS	B	B	A	D	B	B	A	A	A	C	B	A
Approach Delay		9.2			35.0			5.6			15.3	
Approach LOS		A			C			A			B	
Queue Length 50th (m)	2.3	2.7	0.0	57.9	4.0	19.0	2.3	12.1	0.2	16.6	32.0	0.0
Queue Length 95th (m)	6.4	7.0	8.3	98.1	m8.5	31.0	18.4	49.6	13.7	37.1	45.9	3.3
Internal Link Dist (m)		31.8			58.5			523.5			276.8	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Bay Length (m)							50.0		50.0	50.0		50.0
Base Capacity (vph)	552	751	689	532	751	695	401	1857	905	304	1857	864
Starvation Cap Reductn	0	0	0	94	0	196	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.03	0.03	0.12	0.89	0.04	0.61	0.25	0.40	0.22	0.47	0.31	0.02

Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 72 (72%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 60
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.85
Intersection Signal Delay: 16.5 Intersection LOS: B
Intersection Capacity Utilization 72.9% ICU Level of Service C
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: Highway 2A & Access Rd/C&E Trail



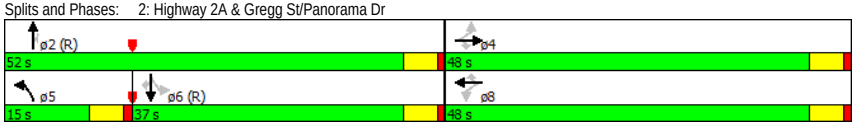
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	457	194	243	251	175	26	161	392	106	19	526	309
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	80.0		50.0	50.0		50.0
Storage Lanes	2		1	1		1	2		1	1		1
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95	1.00	0.97	0.95	1.00	1.00	0.95	1.00
Frt			0.850			0.850			0.850			
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3372	3476	1555	1738	3476	1555	3372	3476	1555	1738	3476	1830
Flt Permitted	0.627			0.614			0.950			0.494		
Satd. Flow (perm)	2226	3476	1555	1123	3476	1555	3372	3476	1555	904	3476	1830
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			276			76			120			351
Link Speed (k/h)		50			50			60			60	
Link Distance (m)		48.3			64.6			472.7			547.5	
Travel Time (s)		3.5			4.7			28.4			32.9	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Shared Lane Traffic (%)												
Lane Group Flow (vph)	519	220	276	285	199	30	183	445	120	22	598	351
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Prot	NA	Perm	Perm	NA	Perm
Protected Phases		4			8		5	2			6	
Permitted Phases	4		4	8		8			2	6		6
Detector Phase	4	4	4	8	8	8	5	2	2	6	6	6
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	4.0	20.0	20.0	20.0	20.0	20.0
Minimum Split (s)	31.0	31.0	31.0	15.0	15.0	15.0	9.0	31.0	31.0	31.0	31.0	31.0
Total Split (s)	48.0	48.0	48.0	48.0	48.0	48.0	15.0	52.0	52.0	37.0	37.0	37.0
Total Split (%)	48.0%	48.0%	48.0%	48.0%	48.0%	48.0%	15.0%	52.0%	52.0%	37.0%	37.0%	37.0%
Yellow 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
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag							Lead			Lag	Lag	Lag
Lead-Lag Optimize?							Yes			Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Min	C-Min	C-Min	C-Min	C-Min
Act Effct Green (s)	32.4	32.4	32.4	32.4	32.4	32.4	10.0	57.6	57.6	42.6	42.6	42.6
Actuated g/C Ratio	0.32	0.32	0.32	0.32	0.32	0.32	0.10	0.58	0.58	0.43	0.43	0.43
v/c Ratio	0.72	0.20	0.40	0.78	0.18	0.05	0.55	0.22	0.13	0.06	0.40	0.36
Control Delay	34.9	23.3	4.2	44.1	23.1	0.2	34.0	13.6	6.7	15.8	16.8	2.5
Queue Delay	0.0	0.0	0.0	2.6	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	34.9	23.3	4.2	46.7	23.4	0.2	34.0	13.6	6.7	15.8	16.8	2.5
LOS	C	C	A	D	C	A	C	B	A	B	B	A
Approach Delay		24.0			34.9			17.5			11.6	
Approach LOS		C			C			B			B	
Queue Length 50th (m)	45.4	16.1	0.0	51.7	15.3	0.0	15.8	37.9	3.5	2.3	35.2	5.3
Queue Length 95th (m)	51.4	20.1	12.9	61.6	15.1	0.2	23.2	51.9	9.6	m5.1	48.1	7.9
Internal Link Dist (m)		24.3			40.6			448.7			523.5	
Turn Bay Length (m)							80.0		50.0	50.0		50.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Base Capacity (vph)	957	1494	825	482	1494	711	354	2000	945	384	1480	981
Starvation Cap Reductn	0	0	0	104	776	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.54	0.15	0.33	0.75	0.28	0.04	0.52	0.22	0.13	0.06	0.40	0.36

Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 87 (87%), Referenced to phase 2:NBT and 6:SBTL, Start of Green
Natural Cycle: 75
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.78
Intersection Signal Delay: 20.5 Intersection LOS: C
Intersection Capacity Utilization 72.2% ICU Level of Service C
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: Highway 2A & Gregg St/Panorama Dr



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	23	37	101	202	38	16	24	627	107	6	1033	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	0.0		0.0	0.0		50.0
Storage Lanes	1		0	1		0	0		1	0		1
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95	1.00
Frt		0.890			0.956				0.850			0.850
Flt Protected	0.950			0.950				0.998				
Satd. Flow (prot)	1738	1628	0	1738	1749	0	0	3376	1555	0	3476	1555
Flt Permitted	0.717			0.601				0.877			0.951	
Satd. Flow (perm)	1312	1628	0	1100	1749	0	0	2967	1555	0	3306	1555
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		63			18				122			22
Link Speed (k/h)		50			50			60			60	
Link Distance (m)		54.4			44.4			100.1			472.7	
Travel Time (s)		3.9			3.2			6.0			28.4	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%	5%	8%	5%	5%	5%	5%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	26	157	0	230	61	0	0	739	122	0	1181	23
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		6
Detector Phase	4	4		8	8		2	2	2	6	6	6
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		20.0	20.0	20.0	20.0	20.0	20.0
Minimum Split (s)	31.0	31.0		31.0	31.0		25.0	25.0	25.0	25.0	25.0	25.0
Total Split (s)	40.0	40.0		40.0	40.0		60.0	60.0	60.0	60.0	60.0	60.0
Total Split (%)	40.0%	40.0%		40.0%	40.0%		60.0%	60.0%	60.0%	60.0%	60.0%	60.0%
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0	0.0		0.0	0.0
Total Lost Time (s)	5.0	5.0		5.0	5.0			5.0	5.0		5.0	5.0
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	None	None		None	None		C-Min	C-Min	C-Min	C-Min	C-Min	C-Min
Act Effct Green (s)	25.1	25.1		25.1	25.1			64.9	64.9		64.9	64.9
Actuated g/C Ratio	0.25	0.25		0.25	0.25			0.65	0.65		0.65	0.65
v/c Ratio	0.08	0.35		0.84	0.14			0.38	0.12		0.55	0.02
Control Delay	26.0	18.5		59.2	20.0			7.8	1.2		9.7	2.4
Queue Delay	0.0	0.0		0.0	0.0			0.0	0.0		0.0	0.0
Total Delay	26.0	18.5		59.2	20.0			7.8	1.2		9.7	2.4
LOS	C	B		E	B			A	A		A	A
Approach Delay		19.6			51.0			6.8			9.6	
Approach LOS		B			D			A			A	
Queue Length 50th (m)	3.9	14.5		42.2	6.4			25.6	0.0		37.2	0.2
Queue Length 95th (m)	8.8	26.5		60.3	13.8			38.1	2.1		89.8	m0.5
Internal Link Dist (m)		30.4			20.4			76.1			448.7	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Bay Length (m)												50.0
Base Capacity (vph)	459	610		385	623			1926	1052		2146	1017
Starvation Cap Reductn	0	0		0	0			0	0		0	0
Spillback Cap Reductn	0	0		0	0			0	0		0	0
Storage Cap Reductn	0	0		0	0			0	0		0	0
Reduced v/c Ratio	0.06	0.26		0.60	0.10			0.38	0.12		0.55	0.02

Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 100			
Offset: 17 (17%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 60			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.84			
Intersection Signal Delay: 14.1		Intersection LOS: B	
Intersection Capacity Utilization 66.9%		ICU Level of Service C	
Analysis Period (min) 15			

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 3: Highway 2A & ParkSt/Park St

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	351	37	658	123	20	1387
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	0.0		80.0	50.0	
Storage Lanes	2	1		1	0	
Taper Length (m)	2.5				2.5	
Lane Util. Factor	0.97	1.00	0.95	1.00	0.95	0.95
Frt		0.850		0.850		
Flt Protected	0.950					0.999
Satd. Flow (prot)	2951	1361	3318	1361	0	3466
Flt Permitted	0.950					0.937
Satd. Flow (perm)	2951	1361	3318	1361	0	3251
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		42		140		
Link Speed (k/h)	50		60			60
Link Distance (m)	50.6		327.8			219.5
Travel Time (s)	3.6		19.7			13.2
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles (%)	20%	20%	10%	20%	20%	5%
Shared Lane Traffic (%)						
Lane Group Flow (vph)	399	42	748	140	0	1599
Turn Type	Prot	Perm	NA	Perm	Perm	NA
Protected Phases	8		2			6
Permitted Phases		8		2	6	
Detector Phase	8	8	2	2	6	6
Switch Phase						
Minimum Initial (s)	8.0	8.0	20.0	20.0	20.0	20.0
Minimum Split (s)	27.0	27.0	25.5	25.5	25.5	25.5
Total Split (s)	27.0	27.0	73.0	73.0	73.0	73.0
Total Split (%)	27.0%	27.0%	73.0%	73.0%	73.0%	73.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0		0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0		5.0
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	None	None	C-Min	C-Min	C-Min	C-Min
Act Effct Green (s)	18.3	18.3	71.7	71.7		71.7
Actuated g/C Ratio	0.18	0.18	0.72	0.72		0.72
v/c Ratio	0.74	0.15	0.31	0.14		0.69
Control Delay	47.0	11.3	6.4	2.5		6.1
Queue Delay	0.0	0.0	0.0	0.0		0.0
Total Delay	47.0	11.3	6.4	2.5		6.1
LOS	D	B	A	A		A
Approach Delay	43.6		5.8			6.1
Approach LOS	D		A			A
Queue Length 50th (m)	37.8	0.0	21.4	0.0		49.3
Queue Length 95th (m)	49.9	8.1	43.3	10.9		52.2
Internal Link Dist (m)	26.6		303.8			195.5

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Turn Bay Length (m)				80.0		
Base Capacity (vph)	649	332	2378	1015		2330
Starvation Cap Reductn	0	0	0	0		0
Spillback Cap Reductn	0	0	0	0		0
Storage Cap Reductn	0	0	0	0		0
Reduced v/c Ratio	0.61	0.13	0.31	0.14		0.69

Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 100			
Offset: 14 (14%), Referenced to phase 2:NBT and 6:SBTL, Start of Green			
Natural Cycle: 70			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.74			
Intersection Signal Delay: 11.6		Intersection LOS: B	
Intersection Capacity Utilization 70.8%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 5: Highway 2A & South St

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	140	123	132	690	1760	202
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	0.0	50.0			80.0
Storage Lanes	2	1	1			1
Taper Length (m)	2.5		2.5			
Lane Util. Factor	0.97	1.00	1.00	0.95	0.95	1.00
Frt		0.850				0.850
Flt Protected	0.950		0.950			
Satd. Flow (prot)	3372	1555	1738	3476	3476	1555
Flt Permitted	0.950		0.057			
Satd. Flow (perm)	3372	1555	104	3476	3476	1555
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		140				185
Link Speed (k/h)	50			60	60	
Link Distance (m)	79.1			148.6	327.8	
Travel Time (s)	5.7			8.9	19.7	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Shared Lane Traffic (%)						
Lane Group Flow (vph)	159	140	150	784	2000	230
Turn Type	Prot	Perm	pm+pt	NA	NA	Perm
Protected Phases	7		5	2	6	
Permitted Phases		4	2			6
Detector Phase	7	4	5	2	6	6
Switch Phase						
Minimum Initial (s)	8.0	8.0	8.0	20.0	20.0	20.0
Minimum Split (s)	13.0	31.0	13.0	25.0	25.0	25.0
Total Split (s)	31.0	31.0	13.0	69.0	56.0	56.0
Total Split (%)	31.0%	31.0%	13.0%	69.0%	56.0%	56.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag			Lead		Lag	Lag
Lead-Lag Optimize?			Yes		Yes	Yes
Recall Mode	None	None	None	C-Min	C-Min	C-Min
Act Effct Green (s)	10.2	10.2	79.8	79.8	64.8	64.8
Actuated g/C Ratio	0.10	0.10	0.80	0.80	0.65	0.65
v/c Ratio	0.46	0.49	0.61	0.28	0.89	0.21
Control Delay	46.4	13.4	27.9	3.1	17.7	3.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	46.4	13.4	27.9	3.1	17.7	3.2
LOS	D	B	C	A	B	A
Approach Delay	30.9			7.0	16.2	
Approach LOS	C			A	B	
Queue Length 50th (m)	15.2	0.0	12.4	15.8	82.5	0.1
Queue Length 95th (m)	23.7	15.6	30.5	24.0	#241.1	18.9
Internal Link Dist (m)	55.1			124.6	303.8	
Turn Bay Length (m)			50.0			80.0

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Base Capacity (vph)	876	507	246	2773	2251	1072
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.18	0.28	0.61	0.28	0.89	0.21

Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Green
Natural Cycle: 110
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.89
Intersection Signal Delay: 15.0 Intersection LOS: B
Intersection Capacity Utilization 75.1% ICU Level of Service D
Analysis Period (min) 15
\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 6: Highway 2A & Broadway Ave

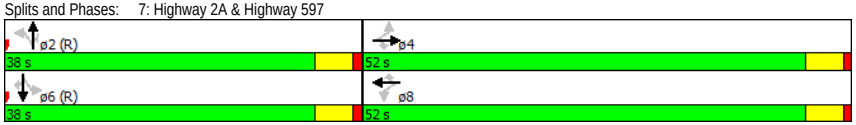
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	29	67	270	103	98	83	138	495	106	185	1562	85
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		50.0	0.0		50.0	50.0		50.0	50.0		50.0
Storage Lanes	0		1	0		1	1		1	1		1
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected		0.985			0.975		0.950			0.950		
Satd. Flow (prot)	0	1711	1512	0	1696	1555	1690	1779	1512	1738	1830	1555
Flt Permitted		0.863			0.782		0.071			0.370		
Satd. Flow (perm)	0	1499	1512	0	1360	1555	126	1779	1512	677	1830	1555
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			24			94			102			26
Link Speed (k/h)		50			50			60			60	
Link Distance (m)		67.4			78.0			157.9			368.2	
Travel Time (s)		4.9			5.6			9.5			22.1	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles (%)	5%	13%	8%	8%	13%	5%	8%	8%	8%	5%	5%	5%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	109	307	0	228	94	157	562	120	210	1775	97
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2		2	6		6
Detector Phase	4	4	4	8	8	8	2	2	2	6	6	6
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	20.0	20.0	20.0	20.0	20.0	20.0
Minimum Split (s)	24.0	24.0	24.0	24.0	24.0	24.0	26.0	26.0	26.0	26.0	26.0	26.0
Total Split (s)	52.0	52.0	52.0	52.0	52.0	52.0	38.0	38.0	38.0	38.0	38.0	38.0
Total Split (%)	57.8%	57.8%	57.8%	57.8%	57.8%	57.8%	42.2%	42.2%	42.2%	42.2%	42.2%	42.2%
Yellow 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
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	None	None	None	None	None	None	C-Max	C-Max	C-Max	C-Max	C-Max	C-Max
Act Effct Green (s)		23.7	23.7		23.7	23.7	56.3	56.3	56.3	56.3	56.3	56.3
Actuated g/C Ratio		0.26	0.26		0.26	0.26	0.63	0.63	0.63	0.63	0.63	0.63
v/c Ratio		0.28	0.74		0.64	0.20	2.01	0.51	0.12	0.50	1.55	0.10
Control Delay		25.9	37.8		36.3	5.5	515.4	12.9	3.2	16.8	273.3	7.0
Queue Delay		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay		25.9	37.8		36.3	5.5	515.4	12.9	3.2	16.8	273.3	7.0
LOS		C	D		D	A	F	B	A	B	F	A
Approach Delay		34.7			27.3			105.5			235.0	
Approach LOS		C			C			F			F	
Queue Length 50th (m)		15.0	45.1		35.1	0.0	~29.3	47.5	1.1	17.6	~435.8	4.3
Queue Length 95th (m)		23.4	60.0		48.1	8.7	#70.4	94.2	8.9	47.7	#536.0	13.1
Internal Link Dist (m)		43.4			54.0			133.9			344.2	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Bay Length (m)			50.0			50.0	50.0		50.0	50.0		50.0
Base Capacity (vph)		782	801		710	856	78	1112	983	423	1144	982
Starvation Cap Reductn		0	0		0	0	0	0	0	0	0	0
Spillback Cap Reductn		0	0		0	0	0	0	0	0	0	0
Storage Cap Reductn		0	0		0	0	0	0	0	0	0	0
Reduced v/c Ratio		0.14	0.38		0.32	0.11	2.01	0.51	0.12	0.50	1.55	0.10

Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 110
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 2.01
Intersection Signal Delay: 164.3 Intersection LOS: F
Intersection Capacity Utilization 128.9% ICU Level of Service H
Analysis Period (min) 15
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 7: Highway 2A & Highway 597

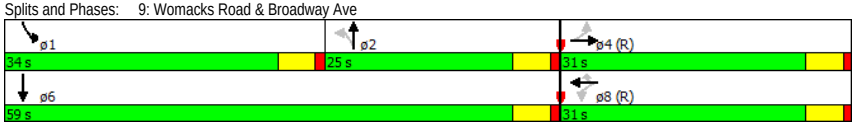


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	16	280	5	16	210	285	5	5	58	779	5	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	50.0		0.0	0.0		0.0	50.0		0.0	100.0		0.0
Storage Lanes	0		0	0		1	1		0	2		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.97	1.00	1.00
Frt		0.998						0.862			0.889	
Flt Protected		0.997			0.997		0.950			0.950		
Satd. Flow (prot)	0	1820	0	0	1824	1830	1738	1577	0	3372	1627	0
Flt Permitted		0.977			0.964		0.742			0.950		
Satd. Flow (perm)	0	1784	0	0	1764	1830	1358	1577	0	3372	1627	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		1				324		66			17	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		860.4			145.8			110.5			601.0	
Travel Time (s)		61.9			10.5			8.0			43.3	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	342	0	0	257	324	6	72	0	885	23	0
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA		Prot	NA	
Protected Phases		4			8			2		1	6	
Permitted Phases	4			8		8	2					
Detector Phase	4	4		8	8	8	2	2		1	6	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0	10.0	20.0	20.0		10.0	20.0	
Minimum Split (s)	23.0	23.0		25.0	25.0	25.0	25.0	25.0		23.0	25.0	
Total Split (s)	31.0	31.0		31.0	31.0	31.0	25.0	25.0		34.0	59.0	
Total Split (%)	34.4%	34.4%		34.4%	34.4%	34.4%	27.8%	27.8%		37.8%	65.6%	
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)		5.0			5.0	5.0	5.0	5.0		5.0	5.0	
Lead/Lag							Lag	Lag		Lead		
Lead-Lag Optimize?							Yes	Yes		Yes		
Recall Mode	C-Min	C-Min		C-Min	C-Min	C-Min	None	None		Min	Min	
Act Effct Green (s)		32.4			32.4	32.4	20.0	20.0		27.6	47.6	
Actuated g/C Ratio		0.36			0.36	0.36	0.22	0.22		0.31	0.53	
v/c Ratio		0.53			0.40	0.37	0.02	0.18		0.86	0.03	
Control Delay		29.8			26.3	6.4	27.8	10.0		38.7	4.1	
Queue Delay		0.0			0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay		29.8			26.3	6.4	27.8	10.0		38.7	4.1	
LOS		C			C	A	C	B		D	A	
Approach Delay		29.8			15.2			11.4			37.8	
Approach LOS		C			B			B			D	
Queue Length 50th (m)		52.0			30.6	0.0	0.8	0.8		71.3	0.4	
Queue Length 95th (m)		78.0			61.5	31.5	3.7	10.6		91.5	3.1	
Internal Link Dist (m)		836.4			121.8			86.5			577.0	
Turn Bay Length (m)							50.0			100.0		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Base Capacity (vph)		648			640	870	301	401		1094	987	
Starvation Cap Reductn		0			0	0	0	0		0	0	
Spillback Cap Reductn		0			0	0	0	0		0	0	
Storage Cap Reductn		0			0	0	0	0		0	0	
Reduced v/c Ratio		0.53			0.40	0.37	0.02	0.18		0.81	0.02	

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 55 (61%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green			
Natural Cycle: 75			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.86			
Intersection Signal Delay: 28.4		Intersection LOS: C	
Intersection Capacity Utilization 65.4%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 9: Womacks Road & Broadway Ave

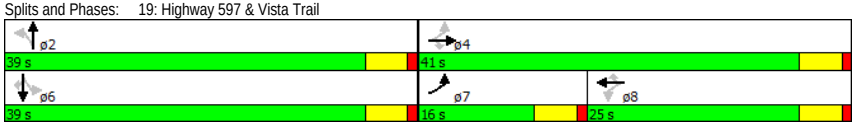


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	262	403	11	7	345	148	5	1	6	216	9	614
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	50.0		50.0	50.0		50.0	0.0		0.0	0.0		0.0
Storage Lanes	1		1	1		1	0		0	0		1
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850		0.932				0.850
Flt Protected	0.950			0.950				0.979			0.954	
Satd. Flow (prot)	1690	3230	1555	1738	3174	1512	0	1669	0	0	1699	1512
Flt Permitted	0.393			0.488				0.893			0.724	
Satd. Flow (perm)	699	3230	1555	893	3174	1512	0	1523	0	0	1289	1512
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			27			168		7				476
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		267.0			499.4			80.3			111.2	
Travel Time (s)		19.2			36.0			5.8			8.0	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles (%)	8%	13%	5%	5%	15%	8%	5%	5%	5%	8%	5%	8%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	298	458	12	8	392	168	0	14	0	0	255	698
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA		Perm	NA	Perm
Protected Phases	7	4			8			2			6	
Permitted Phases	4		4	8		8	2			6		6
Detector Phase	7	4	4	8	8	8	2	2		6	6	6
Switch Phase												
Minimum Initial (s)	8.0	20.0	20.0	20.0	20.0	20.0	10.0	10.0		8.0	8.0	8.0
Minimum Split (s)	13.0	25.0	25.0	25.0	25.0	25.0	34.0	34.0		34.0	34.0	34.0
Total Split (s)	16.0	41.0	41.0	25.0	25.0	25.0	39.0	39.0		39.0	39.0	39.0
Total Split (%)	20.0%	51.3%	51.3%	31.3%	31.3%	31.3%	48.8%	48.8%		48.8%	48.8%	48.8%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0		1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0		0.0			0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0		5.0			5.0	5.0
Lead/Lag	Lead			Lag	Lag	Lag						
Lead-Lag Optimize?	Yes			Yes	Yes	Yes						
Recall Mode	None	Min	Min	Min	Min	Min	Min	Min		None	None	None
Act Effct Green (s)	36.2	36.2	36.2	20.4	20.4	20.4		22.6			22.6	22.6
Actuated g/C Ratio	0.52	0.52	0.52	0.30	0.30	0.30		0.33			0.33	0.33
v/c Ratio	0.57	0.27	0.01	0.03	0.42	0.30		0.03			0.60	0.86
Control Delay	17.0	11.3	2.4	22.3	23.3	6.0		10.6			25.2	18.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0			0.0	0.0
Total Delay	17.0	11.3	2.4	22.3	23.3	6.0		10.6			25.2	18.0
LOS	B	B	A	C	C	A		B			C	B
Approach Delay		13.4			18.2			10.6			19.9	
Approach LOS		B			B			B			B	
Queue Length 50th (m)	20.5	15.9	0.0	0.7	21.3	0.0		0.6			26.9	23.8
Queue Length 95th (m)	46.1	31.7	1.4	4.0	38.8	13.0		3.6			45.3	64.6
Internal Link Dist (m)		243.0			475.4			56.3			87.2	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Bay Length (m)	50.0		50.0	50.0		50.0						
Base Capacity (vph)	527	1718	839	264	938	565		768			647	996
Starvation Cap Reductn	0	0	0	0	0	0		0			0	0
Spillback Cap Reductn	0	0	0	0	0	0		0			0	0
Storage Cap Reductn	0	0	0	0	0	0		0			0	0
Reduced v/c Ratio	0.57	0.27	0.01	0.03	0.42	0.30		0.02			0.39	0.70

Intersection Summary			
Area Type:	Other		
Cycle Length: 80			
Actuated Cycle Length: 69			
Natural Cycle: 75			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.86			
Intersection Signal Delay: 17.3		Intersection LOS: B	
Intersection Capacity Utilization 75.5%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 19: Highway 597 & Vista Trail

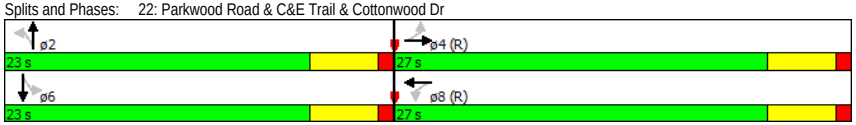


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	128	135	36	20	399	35	49	23	23	16	16	132
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.968			0.990			0.967			0.891	
Flt Protected	0.950				0.998			0.975			0.995	
Satd. Flow (prot)	1659	1691	0	0	1757	0	0	1693	0	0	1592	0
Flt Permitted	0.496				0.985			0.747			0.956	
Satd. Flow (perm)	866	1691	0	0	1735	0	0	1297	0	0	1529	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		34			11			26			150	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		82.5			312.1			551.8			387.8	
Travel Time (s)		5.9			22.5			39.7			27.9	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles (%)	10%	10%	10%	8%	8%	8%	7%	7%	7%	7%	7%	7%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	145	194	0	0	516	0	0	108	0	0	186	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	20.0	20.0		20.0	20.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	25.0	25.0		25.0	25.0		23.0	23.0		23.0	23.0	
Total Split (s)	27.0	27.0		27.0	27.0		23.0	23.0		23.0	23.0	
Total Split (%)	54.0%	54.0%		54.0%	54.0%		46.0%	46.0%		46.0%	46.0%	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0			0.0			0.0			0.0	
Total Lost Time (s)	5.0	5.0			5.0			5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	C-Min	C-Min		C-Min	C-Min		None	None		None	None	
Act Effct Green (s)	33.5	33.5			33.5			10.5			10.5	
Actuated g/C Ratio	0.67	0.67			0.67			0.21			0.21	
v/c Ratio	0.25	0.17			0.44			0.37			0.42	
Control Delay	7.3	5.1			7.2			16.3			8.6	
Queue Delay	0.0	0.0			0.0			0.1			0.1	
Total Delay	7.3	5.1			7.2			16.4			8.8	
LOS	A	A			A			B			A	
Approach Delay		6.0			7.2			16.4			8.8	
Approach LOS		A			A			B			A	
Queue Length 50th (m)	15.5	17.3			21.1			12.2			2.7	
Queue Length 95th (m)	21.9	23.9			43.2			16.1			13.7	
Internal Link Dist (m)		58.5			288.1			527.8			363.8	
Turn Bay Length (m)												
Base Capacity (vph)	580	1145			1166			483			646	
Starvation Cap Reductn	0	0			0			0			0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Spillback Cap Reductn	0	0			42			59			72	
Storage Cap Reductn	0	0			0			0			0	
Reduced v/c Ratio	0.25	0.17			0.46			0.25			0.32	

Intersection Summary			
Area Type:	Other		
Cycle Length: 50			
Actuated Cycle Length: 50			
Offset: 24 (48%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green			
Natural Cycle: 50			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.44			
Intersection Signal Delay: 8.0		Intersection LOS: A	
Intersection Capacity Utilization 71.4%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 22: Parkwood Road & C&E Trail & Cottonwood Dr

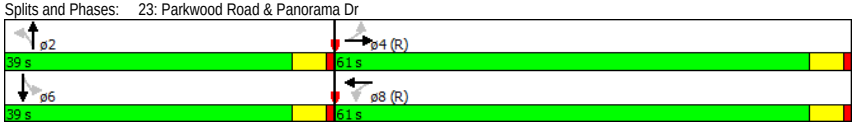


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	225	55	50	21	257	83	13	33	7	21	18	206
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.977			0.969			0.974			0.862	
Flt Protected		0.967			0.997		0.950			0.950		
Satd. Flow (prot)	0	3284	0	0	1768	0	1706	1749	0	1706	1548	0
Flt Permitted		0.653			0.968		0.351			0.727		
Satd. Flow (perm)	0	2218	0	0	1716	0	630	1749	0	1305	1548	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		33			24			8			234	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		64.6			305.1			490.3			551.8	
Travel Time (s)		4.7			22.0			35.3			39.7	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%	7%	7%	7%	7%	7%	7%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	375	0	0	410	0	15	46	0	24	254	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	20.0	20.0		20.0	20.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	25.0	25.0		25.0	25.0		23.0	23.0		23.0	23.0	
Total Split (s)	61.0	61.0		61.0	61.0		39.0	39.0		39.0	39.0	
Total Split (%)	61.0%	61.0%		61.0%	61.0%		39.0%	39.0%		39.0%	39.0%	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		5.0			5.0		5.0	5.0		5.0	5.0	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	C-Min	C-Min		C-Min	C-Min		None	None		None	None	
Act Effct Green (s)		78.6			78.6		11.4	11.4		11.4	11.4	
Actuated g/C Ratio		0.79			0.79		0.11	0.11		0.11	0.11	
v/c Ratio		0.21			0.30		0.21	0.22		0.16	0.66	
Control Delay		6.7			3.7		48.6	39.2		41.6	16.1	
Queue Delay		0.7			0.0		0.0	0.0		0.0	0.0	
Total Delay		7.4			3.7		48.6	39.2		41.6	16.1	
LOS		A			A		D	D		D	B	
Approach Delay		7.4			3.7			41.5			18.3	
Approach LOS		A			A			D			B	
Queue Length 50th (m)		5.9			14.8		2.8	7.4		4.4	5.2	
Queue Length 95th (m)		28.6			31.6		m8.8	m16.6		m10.6	24.6	
Internal Link Dist (m)		40.6			281.1			466.3			527.8	
Turn Bay Length (m)												
Base Capacity (vph)		1750			1353		214	599		443	680	
Starvation Cap Reductn		1036			0		0	0		0	0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Spillback Cap Reductn		0			85		2	0		0	19	
Storage Cap Reductn		0			0		0	0		0	0	
Reduced v/c Ratio		0.53			0.32		0.07	0.08		0.05	0.38	

Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 100			
Offset: 5 (5%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green			
Natural Cycle: 50			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.66			
Intersection Signal Delay: 10.6		Intersection LOS: B	
Intersection Capacity Utilization 62.6%		ICU Level of Service B	
Analysis Period (min) 15			
m Volume for 95th percentile queue is metered by upstream signal.			

Splits and Phases: 23: Parkwood Road & Panorama Dr



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	980	137	165	467	45	140
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)		50.0	50.0		50.0	0.0
Storage Lanes		1	1		0	1
Taper Length (m)			2.5		2.5	
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Frt		0.850				0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	3476	1555	1738	3476	1738	1555
Flt Permitted			0.240		0.950	
Satd. Flow (perm)	3476	1555	439	3476	1738	1555
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		156				124
Link Speed (k/h)	50			50	50	
Link Distance (m)	145.8			292.0	243.5	
Travel Time (s)	10.5			21.0	17.5	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1114	156	188	531	51	159
Turn Type	NA	Perm	Perm	NA	Prot	Perm
Protected Phases	4			8	2	
Permitted Phases		4	8			2
Detector Phase	4	4	8	8	2	2
Switch Phase						
Minimum Initial (s)	20.0	20.0	20.0	20.0	8.0	8.0
Minimum Split (s)	25.0	25.0	25.0	25.0	24.0	24.0
Total Split (s)	66.0	66.0	66.0	66.0	24.0	24.0
Total Split (%)	73.3%	73.3%	73.3%	73.3%	26.7%	26.7%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	C-Min	C-Min	C-Min	C-Min	None	None
Act Effct Green (s)	70.4	70.4	70.4	70.4	9.6	9.6
Actuated g/C Ratio	0.78	0.78	0.78	0.78	0.11	0.11
v/c Ratio	0.41	0.12	0.55	0.20	0.28	0.58
Control Delay	1.5	0.4	11.7	2.9	39.9	19.9
Queue Delay	0.2	0.0	0.0	0.0	0.0	0.0
Total Delay	1.7	0.4	11.7	2.9	39.9	19.9
LOS	A	A	B	A	D	B
Approach Delay	1.5			5.2	24.8	
Approach LOS	A			A	C	
Queue Length 50th (m)	3.1	0.0	8.4	8.3	8.4	5.8
Queue Length 95th (m)	27.5	m1.2	32.5	16.6	17.4	21.4
Internal Link Dist (m)	121.8			268.0	219.5	
Turn Bay Length (m)		50.0	50.0		50.0	

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Base Capacity (vph)	2718	1250	343	2718	366	426
Starvation Cap Reductn	652	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.54	0.12	0.55	0.20	0.14	0.37

Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 0 (0%), Referenced to phase 4:EBT and 8:WBTL, Start of Green
Natural Cycle: 75
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.58
Intersection Signal Delay: 5.0 Intersection LOS: A
Intersection Capacity Utilization 62.9% ICU Level of Service B
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 34: Broadway Avenue & Gregg St

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Vol, veh/h	0	49	0	1644	1084	35
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	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	8	8	5	5	8	8
Mvmt Flow	0	53	0	1787	1178	38

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	2090	608	1216	0	-	0
Stage 1	1197	-	-	-	-	-
Stage 2	893	-	-	-	-	-
Critical Hdwy	6.96	7.06	4.2	-	-	-
Critical Hdwy Stg 1	5.96	-	-	-	-	-
Critical Hdwy Stg 2	5.96	-	-	-	-	-
Follow-up Hdwy	3.58	3.38	2.25	-	-	-
Pot Cap-1 Maneuver	42	424	553	-	-	-
Stage 1	237	-	-	-	-	-
Stage 2	346	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	42	424	553	-	-	-
Mov Cap-2 Maneuver	42	-	-	-	-	-
Stage 1	237	-	-	-	-	-
Stage 2	346	-	-	-	-	-

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

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	553	-	424	-	-
HCM Lane V/C Ratio	-	-	0.126	-	-
HCM Control Delay (s)	0	-	14.7	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	0	-	0.4	-	-

Intersection	
Int Delay, s/veh	17.7

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Vol, veh/h	415	31	15	116	143	334
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	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	8	8	5	5	5	5
Mvmt Flow	451	34	16	126	155	363

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	496	337	518	0	-	0
Stage 1	337	-	-	-	-	-
Stage 2	159	-	-	-	-	-
Critical Hdwy	6.48	6.28	4.15	-	-	-
Critical Hdwy Stg 1	5.48	-	-	-	-	-
Critical Hdwy Stg 2	5.48	-	-	-	-	-
Follow-up Hdwy	3.572	3.372	2.245	-	-	-
Pot Cap-1 Maneuver	523	692	1033	-	-	-
Stage 1	710	-	-	-	-	-
Stage 2	855	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	514	692	1033	-	-	-
Mov Cap-2 Maneuver	514	-	-	-	-	-
Stage 1	710	-	-	-	-	-
Stage 2	840	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	41.5	1	0
HCM LOS	E		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1033	-	514	692	-	-
HCM Lane V/C Ratio	0.016	-	0.878	0.049	-	-
HCM Control Delay (s)	8.5	0	43.8	10.5	-	-
HCM Lane LOS	A	A	E	B	-	-
HCM 95th %tile Q(veh)	0	-	9.7	0.2	-	-

Intersection	
Int Delay, s/veh	1.5

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Vol, veh/h	7	33	79	35	24	200
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	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	5	5	5	5	5	5
Mvmt Flow	8	36	86	38	26	217

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	375	105	0	0	124	0
Stage 1	105	-	-	-	-	-
Stage 2	270	-	-	-	-	-
Critical Hdwy	6.45	6.25	-	-	4.15	-
Critical Hdwy Stg 1	5.45	-	-	-	-	-
Critical Hdwy Stg 2	5.45	-	-	-	-	-
Follow-up Hdwy	3.545	3.345	-	-	2.245	-
Pot Cap-1 Maneuver	620	941	-	-	1444	-
Stage 1	912	-	-	-	-	-
Stage 2	768	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	608	941	-	-	1444	-
Mov Cap-2 Maneuver	608	-	-	-	-	-
Stage 1	912	-	-	-	-	-
Stage 2	753	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.4	0	0.8
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	859	1444	-
HCM Lane V/C Ratio	-	-	0.051	0.018	-
HCM Control Delay (s)	-	-	9.4	7.5	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.2	0.1	-

Intersection	
Int Delay, s/veh	2.5

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Vol, veh/h	6	60	76	50	69	202
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	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	5	5	5	5	5	5
Mvmt Flow	7	65	83	54	75	220

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	480	110	0	0	137	0
Stage 1	110	-	-	-	-	-
Stage 2	370	-	-	-	-	-
Critical Hdwy	6.45	6.25	-	-	4.15	-
Critical Hdwy Stg 1	5.45	-	-	-	-	-
Critical Hdwy Stg 2	5.45	-	-	-	-	-
Follow-up Hdwy	3.545	3.345	-	-	2.245	-
Pot Cap-1 Maneuver	539	935	-	-	1429	-
Stage 1	907	-	-	-	-	-
Stage 2	692	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	507	935	-	-	1429	-
Mov Cap-2 Maneuver	507	-	-	-	-	-
Stage 1	907	-	-	-	-	-
Stage 2	650	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.5	0	2
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	868	1429	-
HCM Lane V/C Ratio	-	-	0.083	0.052	-
HCM Control Delay (s)	-	-	9.5	7.7	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.3	0.2	-

Intersection	
Int Delay, s/veh	5.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR
Vol, veh/h	55	40	1	14	27	32	1	103	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	8	8	8	8	8	8	5	5	5
Mvmt Flow	60	43	1	15	29	35	1	112	1

Major/Minor	Minor2			Minor1			Major1		
Conflicting Flow All	305	273	90	295	287	113	104	0	0
Stage 1	158	158	-	115	115	-	-	-	-
Stage 2	147	115	-	180	172	-	-	-	-
Critical Hdwy	7.18	6.58	6.28	7.18	6.58	6.28	4.15	-	-
Critical Hdwy Stg 1	6.18	5.58	-	6.18	5.58	-	-	-	-
Critical Hdwy Stg 2	6.18	5.58	-	6.18	5.58	-	-	-	-
Follow-up Hdwy	3.572	4.072	3.372	3.572	4.072	3.372	2.245	-	-
Pot Cap-1 Maneuver	636	624	951	645	613	924	1469	-	-
Stage 1	830	756	-	875	789	-	-	-	-
Stage 2	842	789	-	808	745	-	-	-	-
Platoon blocked, %								-	-
Mov Cap-1 Maneuver	577	608	951	597	597	924	1469	-	-
Mov Cap-2 Maneuver	577	608	-	597	597	-	-	-	-
Stage 1	829	737	-	874	788	-	-	-	-
Stage 2	779	788	-	740	726	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	12.4	10.7	0.1
HCM LOS	B	B	

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1469	-	-	592	707	1458	-	-
HCM Lane V/C Ratio	0.001	-	-	0.176	0.112	0.023	-	-
HCM Control Delay (s)	7.5	0	-	12.4	10.7	7.5	0	-
HCM Lane LOS	A	A	-	B	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.6	0.4	0.1	-	-

Intersection	
Int Delay, s/veh	

Movement	SBL	SBT	SBR
Vol, veh/h	31	70	26
Conflicting Peds, #/hr	0	0	0
Sign Control	Free	Free	Free
RT Channelized	-	-	None
Storage Length	-	-	-
Veh in Median Storage, #	-	0	-
Grade, %	-	0	-
Peak Hour Factor	92	92	92
Heavy Vehicles, %	5	5	5
Mvmt Flow	34	76	28

Major/Minor	Major2		
Conflicting Flow All	113	0	0
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	4.15	-	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	2.245	-	-
Pot Cap-1 Maneuver	1458	-	-
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	1458	-	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	SB
HCM Control Delay, s	1.8
HCM LOS	

Minor Lane/Major Mvmt

Intersection	
Int Delay, s/veh	4.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR
Vol, veh/h	13	0	85	0	0	1	109	102	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	5	5	5	5	5	5	5	5	5
Mvmt Flow	14	0	92	0	0	1	118	111	1

Major/Minor	Minor2			Minor1			Major1		
Conflicting Flow All	487	487	134	532	496	111	143	0	0
Stage 1	138	138	-	348	348	-	-	-	-
Stage 2	349	349	-	184	148	-	-	-	-
Critical Hdwy	7.15	6.55	6.25	7.15	6.55	6.25	4.15	-	-
Critical Hdwy Stg 1	6.15	5.55	-	6.15	5.55	-	-	-	-
Critical Hdwy Stg 2	6.15	5.55	-	6.15	5.55	-	-	-	-
Follow-up Hdwy	3.545	4.045	3.345	3.545	4.045	3.345	2.245	-	-
Pot Cap-1 Maneuver	486	476	907	454	471	934	1421	-	-
Stage 1	858	777	-	662	629	-	-	-	-
Stage 2	661	628	-	811	769	-	-	-	-
Platoon blocked, %								-	-
Mov Cap-1 Maneuver	452	433	907	380	429	934	1421	-	-
Mov Cap-2 Maneuver	452	433	-	380	429	-	-	-	-
Stage 1	782	776	-	603	573	-	-	-	-
Stage 2	601	572	-	728	768	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	10.2	8.9	4
HCM LOS	B	A	

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1421	-	-	800	934	1459	-	-
HCM Lane V/C Ratio	0.083	-	-	0.133	0.001	0.001	-	-
HCM Control Delay (s)	7.8	0	-	10.2	8.9	7.5	0	-
HCM Lane LOS	A	A	-	B	A	A	A	-
HCM 95th %tile Q(veh)	0.3	-	-	0.5	0	0	-	-

Intersection	
Int Delay, s/veh	

Movement	SBL	SBT	SBR
Vol, veh/h	2	114	18
Conflicting Peds, #/hr	0	0	0
Sign Control	Free	Free	Free
RT Channelized	-	-	None
Storage Length	-	-	-
Veh in Median Storage, #	-	0	-
Grade, %	-	0	-
Peak Hour Factor	92	92	92
Heavy Vehicles, %	5	5	5
Mvmt Flow	2	124	20

Major/Minor	Major2		
Conflicting Flow All	112	0	0
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	4.15	-	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	2.245	-	-
Pot Cap-1 Maneuver	1459	-	-
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	1459	-	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	SB
HCM Control Delay, s	0.1
HCM LOS	

Minor Lane/Major Mvmt

Intersection	
Int Delay, s/veh	4.6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Vol, veh/h	102	73	451	225	53	249
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	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	5	5	5	5	5	5
Mvmt Flow	111	79	490	245	58	271

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	864	367	0	0	735	0
Stage 1	613	-	-	-	-	-
Stage 2	251	-	-	-	-	-
Critical Hdwy	6.9	7	-	-	4.2	-
Critical Hdwy Stg 1	5.9	-	-	-	-	-
Critical Hdwy Stg 2	5.9	-	-	-	-	-
Follow-up Hdwy	3.55	3.35	-	-	2.25	-
Pot Cap-1 Maneuver	288	621	-	-	847	-
Stage 1	495	-	-	-	-	-
Stage 2	759	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	265	621	-	-	847	-
Mov Cap-2 Maneuver	265	-	-	-	-	-
Stage 1	495	-	-	-	-	-
Stage 2	698	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	27.1	0	1.9
HCM LOS	D		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	348	847	-
HCM Lane V/C Ratio	-	-	0.547	0.068	-
HCM Control Delay (s)	-	-	27.1	9.6	0.3
HCM Lane LOS	-	-	D	A	A
HCM 95th %tile Q(veh)	-	-	3.1	0.2	-

Intersection	
Int Delay, s/veh	6.2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Vol, veh/h	126	149	38	495	255	35
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	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	25	25	5	5	8	8
Mvmt Flow	137	162	41	538	277	38

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	648	158	315	0	-	0
Stage 1	296	-	-	-	-	-
Stage 2	352	-	-	-	-	-
Critical Hdwy	7.3	7.4	4.2	-	-	-
Critical Hdwy Stg 1	6.3	-	-	-	-	-
Critical Hdwy Stg 2	6.3	-	-	-	-	-
Follow-up Hdwy	3.75	3.55	2.25	-	-	-
Pot Cap-1 Maneuver	355	791	1221	-	-	-
Stage 1	665	-	-	-	-	-
Stage 2	619	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	338	791	1221	-	-	-
Mov Cap-2 Maneuver	338	-	-	-	-	-
Stage 1	665	-	-	-	-	-
Stage 2	589	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	23.2	0.8	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1221	-	490	-	-
HCM Lane V/C Ratio	0.034	-	0.61	-	-
HCM Control Delay (s)	8.1	0.2	23.2	-	-
HCM Lane LOS	A	A	C	-	-
HCM 95th %tile Q(veh)	0.1	-	4	-	-

Intersection	
Int Delay, s/veh	1.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR
Vol, veh/h	1	106	1	5	76	10	3	1	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	5	5	5	5	5	5	5	5	5
Mvmt Flow	1	115	1	5	83	11	3	1	5

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	93	0	0	116	0	0	223	222	116
Stage 1	-	-	-	-	-	-	118	118	-
Stage 2	-	-	-	-	-	-	105	104	-
Critical Hdwy	4.15	-	-	4.15	-	-	7.15	6.55	6.25
Critical Hdwy Stg 1	-	-	-	-	-	-	6.15	5.55	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.15	5.55	-
Follow-up Hdwy	2.245	-	-	2.245	-	-	3.545	4.045	3.345
Pot Cap-1 Maneuver	1483	-	-	1454	-	-	726	671	928
Stage 1	-	-	-	-	-	-	879	792	-
Stage 2	-	-	-	-	-	-	893	803	-
Platoon blocked, %		-	-		-	-			
Mov Cap-1 Maneuver	1483	-	-	1454	-	-	714	668	928
Mov Cap-2 Maneuver	-	-	-	-	-	-	714	668	-
Stage 1	-	-	-	-	-	-	878	791	-
Stage 2	-	-	-	-	-	-	878	800	-

Approach	EB	WB	NB
HCM Control Delay, s	0.1	0.4	9.5
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	812	1483	-	-	1454	-	-	802
HCM Lane V/C Ratio	0.012	0.001	-	-	0.004	-	-	0.028
HCM Control Delay (s)	9.5	7.4	0	-	7.5	0	-	9.6
HCM Lane LOS	A	A	A	-	A	A	-	A
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	0.1

Intersection	
Int Delay, s/veh	

Movement	SBL	SBT	SBR
Vol, veh/h	10	2	9
Conflicting Peds, #/hr	0	0	0
Sign Control	Stop	Stop	Stop
RT Channelized	-	-	None
Storage Length	-	-	-
Veh in Median Storage, #	-	0	-
Grade, %	-	0	-
Peak Hour Factor	92	92	92
Heavy Vehicles, %	5	5	5
Mvmt Flow	11	2	10

Major/Minor	Minor2		
Conflicting Flow All	220	217	88
Stage 1	99	99	-
Stage 2	121	118	-
Critical Hdwy	7.15	6.55	6.25
Critical Hdwy Stg 1	6.15	5.55	-
Critical Hdwy Stg 2	6.15	5.55	-
Follow-up Hdwy	3.545	4.045	3.345
Pot Cap-1 Maneuver	730	676	962
Stage 1	900	807	-
Stage 2	876	792	-
Platoon blocked, %			
Mov Cap-1 Maneuver	722	673	962
Mov Cap-2 Maneuver	722	673	-
Stage 1	899	804	-
Stage 2	869	791	-

Approach	SB
HCM Control Delay, s	9.6
HCM LOS	A

Minor Lane/Major Mvmt

Intersection	
Int Delay, s/veh	3.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR
Vol, veh/h	101	216	0	0	113	9	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	5	5	5	5	5	5	5	5	5
Mvmt Flow	110	235	0	0	123	10	0	0	0

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	133	0	0	235	0	0	612	587	235
Stage 1	-	-	-	-	-	-	454	454	-
Stage 2	-	-	-	-	-	-	158	133	-
Critical Hdwy	4.15	-	-	4.15	-	-	7.15	6.55	6.25
Critical Hdwy Stg 1	-	-	-	-	-	-	6.15	5.55	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.15	5.55	-
Follow-up Hdwy	2.245	-	-	2.245	-	-	3.545	4.045	3.345
Pot Cap-1 Maneuver	1433	-	-	1315	-	-	401	418	797
Stage 1	-	-	-	-	-	-	580	564	-
Stage 2	-	-	-	-	-	-	837	781	-
Platoon blocked, %		-	-		-	-			
Mov Cap-1 Maneuver	1433	-	-	1315	-	-	349	381	797
Mov Cap-2 Maneuver	-	-	-	-	-	-	349	381	-
Stage 1	-	-	-	-	-	-	529	514	-
Stage 2	-	-	-	-	-	-	781	781	-

Approach	EB	WB	NB
HCM Control Delay, s	2.5	0	0
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	1433	-	-	1315	-	-	616
HCM Lane V/C Ratio	-	0.077	-	-	-	-	-	0.155
HCM Control Delay (s)	0	7.7	0	-	0	-	-	11.9
HCM Lane LOS	A	A	A	-	A	-	-	B
HCM 95th %tile Q(veh)	-	0.2	-	-	0	-	-	0.5

Intersection	
Int Delay, s/veh	

Movement	SBL	SBT	SBR
Vol, veh/h	32	0	56
Conflicting Peds, #/hr	0	0	0
Sign Control	Stop	Stop	Stop
RT Channelized	-	-	None
Storage Length	-	-	-
Veh in Median Storage, #	-	0	-
Grade, %	-	0	-
Peak Hour Factor	92	92	92
Heavy Vehicles, %	5	5	5
Mvmt Flow	35	0	61

Major/Minor	Minor2		
Conflicting Flow All	582	582	128
Stage 1	128	128	-
Stage 2	454	454	-
Critical Hdwy	7.15	6.55	6.25
Critical Hdwy Stg 1	6.15	5.55	-
Critical Hdwy Stg 2	6.15	5.55	-
Follow-up Hdwy	3.545	4.045	3.345
Pot Cap-1 Maneuver	420	421	914
Stage 1	869	784	-
Stage 2	580	564	-
Platoon blocked, %			
Mov Cap-1 Maneuver	392	384	914
Mov Cap-2 Maneuver	392	384	-
Stage 1	793	784	-
Stage 2	529	514	-

Approach	SB
HCM Control Delay, s	11.9
HCM LOS	B

Minor Lane/Major Mvmt

Intersection	
Int Delay, s/veh	19.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR
Vol, veh/h	420	97	55	1	121	1	66	86	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None
Storage Length	500	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	8	8	5	5	5	5	5	5	5
Mvmt Flow	457	105	60	1	132	1	72	93	1

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	133	0	0	165	0	0	1384	1183	135
Stage 1	-	-	-	-	-	-	1048	1048	-
Stage 2	-	-	-	-	-	-	336	135	-
Critical Hdwy	4.18	-	-	4.15	-	-	7.15	6.55	6.25
Critical Hdwy Stg 1	-	-	-	-	-	-	6.15	5.55	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.15	5.55	-
Follow-up Hdwy	2.272	-	-	2.245	-	-	3.545	4.045	3.345
Pot Cap-1 Maneuver	1416	-	-	1395	-	-	119	187	906
Stage 1	-	-	-	-	-	-	272	301	-
Stage 2	-	-	-	-	-	-	672	779	-
Platoon blocked, %		-	-		-	-			
Mov Cap-1 Maneuver	1416	-	-	1395	-	-	~ 35	127	906
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ -315	166	-
Stage 1	-	-	-	-	-	-	184	204	-
Stage 2	-	-	-	-	-	-	385	778	-

Approach	EB	WB	NB
HCM Control Delay, s	6.4	0.1	15.9
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	494	1416	-	-	1395	-	-	462
HCM Lane V/C Ratio	0.337	0.322	-	-	0.001	-	-	0.875
HCM Control Delay (s)	15.9	8.7	-	-	7.6	0	-	46.8
HCM Lane LOS	C	A	-	-	A	A	-	E
HCM 95th %tile Q(veh)	1.5	1.4	-	-	0	-	-	9.2

Notes

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

Intersection	
Int Delay, s/veh	

Movement	SBL	SBT	SBR
Vol, veh/h	0	83	289
Conflicting Peds, #/hr	0	0	0
Sign Control	Stop	Stop	Stop
RT Channelized	-	-	None
Storage Length	-	-	-
Veh in Median Storage, #	-	1	-
Grade, %	-	0	-
Peak Hour Factor	92	92	92
Heavy Vehicles, %	10	5	10
Mvmt Flow	0	90	314

Major/Minor	Minor2		
Conflicting Flow All	1230	1212	132
Stage 1	134	134	-
Stage 2	1096	1078	-
Critical Hdwy	7.2	6.55	6.3
Critical Hdwy Stg 1	6.2	5.55	-
Critical Hdwy Stg 2	6.2	5.55	-
Follow-up Hdwy	3.59	4.045	3.39
Pot Cap-1 Maneuver	149	180	896
Stage 1	851	780	-
Stage 2	250	291	-
Platoon blocked, %			
Mov Cap-1 Maneuver	64	122	896
Mov Cap-2 Maneuver	82	172	-
Stage 1	576	779	-
Stage 2	92	197	-

Approach	SB
HCM Control Delay, s	46.8
HCM LOS	E

Minor Lane/Major Mvmt

Intersection	
Int Delay, s/veh	10.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR
Vol, veh/h	22	207	17	3	273	0	102	1	6
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None
Storage Length	500	-	-	0	-	-	500	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	8	10	18	18	13	8	18	18	18
Mvmt Flow	24	225	18	3	297	0	111	1	7

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	297	0	0	243	0	0	586	585	234
Stage 1	-	-	-	-	-	-	282	282	-
Stage 2	-	-	-	-	-	-	304	303	-
Critical Hdwy	4.18	-	-	4.28	-	-	7.28	6.68	6.38
Critical Hdwy Stg 1	-	-	-	-	-	-	6.28	5.68	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.28	5.68	-
Follow-up Hdwy	2.272	-	-	2.362	-	-	3.662	4.162	3.462
Pot Cap-1 Maneuver	1231	-	-	1235	-	-	399	402	767
Stage 1	-	-	-	-	-	-	691	650	-
Stage 2	-	-	-	-	-	-	673	636	-
Platoon blocked, %		-	-		-	-			
Mov Cap-1 Maneuver	1231	-	-	1235	-	-	166	393	767
Mov Cap-2 Maneuver	-	-	-	-	-	-	224	464	-
Stage 1	-	-	-	-	-	-	678	637	-
Stage 2	-	-	-	-	-	-	284	634	-

Approach	EB	WB	NB
HCM Control Delay, s	0.7	0.1	34.2
HCM LOS			D

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	224	702	1231	-	-	1235	-	-	491	728
HCM Lane V/C Ratio	0.495	0.011	0.019	-	-	0.003	-	-	0.013	0.576
HCM Control Delay (s)	35.9	10.2	8	-	-	7.9	-	-	12.4	16.5
HCM Lane LOS	E	B	A	-	-	A	-	-	B	C
HCM 95th %tile Q(veh)	2.5	0	0.1	-	-	0	-	-	0	3.7

Intersection	
Int Delay, s/veh	

Movement	SBL	SBT	SBR
Vol, veh/h	5	1	386
Conflicting Peds, #/hr	0	0	0
Sign Control	Stop	Stop	Stop
RT Channelized	-	-	None
Storage Length	-	-	0
Veh in Median Storage, #	-	1	-
Grade, %	-	0	-
Peak Hour Factor	92	92	92
Heavy Vehicles, %	8	8	8
Mvmt Flow	5	1	420

Major/Minor	Minor2		
Conflicting Flow All	589	594	297
Stage 1	303	303	-
Stage 2	286	291	-
Critical Hdwy	7.18	6.58	6.28
Critical Hdwy Stg 1	6.18	5.58	-
Critical Hdwy Stg 2	6.18	5.58	-
Follow-up Hdwy	3.572	4.072	3.372
Pot Cap-1 Maneuver	411	410	728
Stage 1	694	653	-
Stage 2	708	661	-
Platoon blocked, %			
Mov Cap-1 Maneuver	400	401	728
Mov Cap-2 Maneuver	494	479	-
Stage 1	680	651	-
Stage 2	687	648	-

Approach	SB
HCM Control Delay, s	16.4
HCM LOS	C

Minor Lane/Major Mvmt

Intersection	
Int Delay, s/veh	6.4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	271	316	369	83	53	203
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	1	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	5	5	5	5	5	5
Mvmt Flow	295	343	401	90	58	221

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	491	0	-	0	1207	246
Stage 1	-	-	-	-	446	-
Stage 2	-	-	-	-	761	-
Critical Hdwy	4.2	-	-	-	6.9	7
Critical Hdwy Stg 1	-	-	-	-	5.9	-
Critical Hdwy Stg 2	-	-	-	-	5.9	-
Follow-up Hdwy	2.25	-	-	-	3.55	3.35
Pot Cap-1 Maneuver	1048	-	-	-	172	745
Stage 1	-	-	-	-	603	-
Stage 2	-	-	-	-	414	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1048	-	-	-	112	745
Mov Cap-2 Maneuver	-	-	-	-	211	-
Stage 1	-	-	-	-	603	-
Stage 2	-	-	-	-	270	-

Approach	EB	WB	SB
HCM Control Delay, s	4.8	0	21.6
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1048	-	-	-	489
HCM Lane V/C Ratio	0.281	-	-	-	0.569
HCM Control Delay (s)	9.8	0.6	-	-	21.6
HCM Lane LOS	A	A	-	-	C
HCM 95th %tile Q(veh)	1.2	-	-	-	3.5

Intersection	
Int Delay, s/veh	2.6

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	26	559	536	263	111	46
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	500	-	-	0	0	-
Veh in Median Storage, #	-	0	0	-	1	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	5	5	5	5	5	5
Mvmt Flow	28	608	583	286	121	50

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	583	0	-	0	1247	583
Stage 1	-	-	-	-	583	-
Stage 2	-	-	-	-	664	-
Critical Hdwy	4.15	-	-	-	6.45	6.25
Critical Hdwy Stg 1	-	-	-	-	5.45	-
Critical Hdwy Stg 2	-	-	-	-	5.45	-
Follow-up Hdwy	2.245	-	-	-	3.545	3.345
Pot Cap-1 Maneuver	977	-	-	-	189	507
Stage 1	-	-	-	-	552	-
Stage 2	-	-	-	-	506	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	977	-	-	-	184	507
Mov Cap-2 Maneuver	-	-	-	-	321	-
Stage 1	-	-	-	-	552	-
Stage 2	-	-	-	-	491	-

Approach	EB	WB	SB
HCM Control Delay, s	0.4	0	23.7
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	977	-	-	-	360
HCM Lane V/C Ratio	0.029	-	-	-	0.474
HCM Control Delay (s)	8.8	-	-	-	23.7
HCM Lane LOS	A	-	-	-	C
HCM 95th %tile Q(veh)	0.1	-	-	-	2.5

Intersection	
Intersection Delay, s/veh	21.1
Intersection LOS	C

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	10	26	42	0	138	1	36	0	2	517	348
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
Heavy Vehicles, %	5	18	18	18	5	5	5	5	5	5	5	5
Mvmt Flow	0	11	28	46	0	150	1	39	0	2	562	378
Number of Lanes	0	1	1	0	0	1	1	0	0	0	2	1

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	2	2	2
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	2	3	2
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	3	2	2
HCM Control Delay	14.1	16.9	23.7
HCM LOS	B	C	C

Lane	NBLn1	NBLn2	NBLn3	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	1%	0%	0%	100%	0%	100%	0%	17%	0%
Vol Thru, %	99%	100%	0%	0%	38%	0%	3%	83%	99%
Vol Right, %	0%	0%	100%	0%	62%	0%	97%	0%	1%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	174	345	348	10	68	138	37	215	181
LT Vol	172	345	0	0	26	0	1	179	179
Through Vol	0	0	348	0	42	0	36	0	2
RT Vol	2	0	0	10	0	138	0	36	0
Lane Flow Rate	189	375	378	11	74	150	40	234	197
Geometry Grp	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.383	0.757	0.689	0.031	0.189	0.394	0.092	0.529	0.441
Departure Headway (Hd)	7.277	7.271	6.558	10.174	9.214	9.455	8.246	8.156	8.063
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	493	498	548	351	388	380	433	442	445
Service Time	5.037	5.031	4.318	7.971	7.011	7.241	6.032	5.927	5.834
HCM Lane V/C Ratio	0.383	0.753	0.69	0.031	0.191	0.395	0.092	0.529	0.443
HCM Control Delay	14.5	29.4	22.7	13.3	14.2	18.3	11.9	19.8	17.1
HCM Lane LOS	B	D	C	B	B	C	B	C	C
HCM 95th-tile Q	1.8	6.5	5.3	0.1	0.7	1.8	0.3	3	2.2

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Vol, veh/h	0	36	358	2
Peak Hour Factor	0.92	0.92	0.92	0.92
Heavy Vehicles, %	5	5	5	5
Mvmt Flow	0	39	389	2
Number of Lanes	0	0	2	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	3
Conflicting Approach Left	WB
Conflicting Lanes Left	2
Conflicting Approach Right	EB
Conflicting Lanes Right	2
HCM Control Delay	18.6
HCM LOS	C

Lane

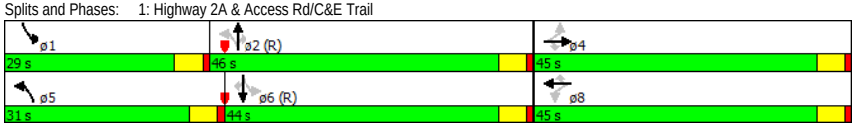
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	52	98	312	259	73	161	330	812	352	266	852	43
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	50.0		50.0	50.0		50.0
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1738	1830	1555	1659	1830	1484	1738	3380	1484	1659	3380	1555
Flt Permitted	0.706			0.677			0.170			0.216		
Satd. Flow (perm)	1292	1830	1555	1182	1830	1484	311	3380	1484	377	3380	1555
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			339			175			284			64
Link Speed (k/h)		50			50			80			80	
Link Distance (m)		55.8			83.0			547.5			300.8	
Travel Time (s)		4.0			6.0			24.6			13.5	
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
Heavy Vehicles (%)	5%	5%	5%	10%	5%	10%	5%	8%	10%	10%	8%	5%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	57	107	339	282	79	175	359	883	383	289	926	47
Turn Type	Perm	NA	Perm	Perm	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8		8	2		2	6		6
Detector Phase	4	4	4	8	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	8.0	20.0	20.0	8.0	20.0	20.0
Minimum Split (s)	30.0	30.0	30.0	30.0	30.0	30.0	13.0	25.0	25.0	13.0	25.0	25.0
Total Split (s)	45.0	45.0	45.0	45.0	45.0	45.0	31.0	46.0	46.0	29.0	44.0	44.0
Total Split (%)	37.5%	37.5%	37.5%	37.5%	37.5%	37.5%	25.8%	38.3%	38.3%	24.2%	36.7%	36.7%
Yellow 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
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag							Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?							Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Min	C-Min	None	C-Min	C-Min
Act Effct Green (s)	32.9	32.9	32.9	32.9	32.9	32.9	74.4	52.1	52.1	69.9	49.9	49.9
Actuated g/C Ratio	0.27	0.27	0.27	0.27	0.27	0.27	0.62	0.43	0.43	0.58	0.42	0.42
v/c Ratio	0.16	0.21	0.50	0.87	0.16	0.33	0.79	0.60	0.48	0.67	0.66	0.07
Control Delay	31.6	32.7	5.9	63.9	30.9	7.7	35.3	22.6	7.6	22.5	33.6	4.2
Queue Delay	0.0	0.0	0.0	5.3	0.0	0.5	0.0	0.0	0.0	0.1	0.0	0.0
Total Delay	31.6	32.7	5.9	69.2	30.9	8.2	35.3	22.6	7.6	22.6	33.6	4.2
LOS	C	C	A	E	C	A	D	C	A	C	C	A
Approach Delay		14.5			43.6			21.9			30.0	
Approach LOS		B			D			C			C	
Queue Length 50th (m)	10.0	19.1	0.0	64.3	13.0	1.5	46.0	65.7	26.2	28.4	96.2	0.0
Queue Length 95th (m)	19.3	31.2	19.7	94.3	24.5	16.8	m97.4	m91.7	m37.8	58.7	132.3	5.5
Internal Link Dist (m)		31.8			59.0			523.5			276.8	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Bay Length (m)							50.0		50.0	50.0		50.0
Base Capacity (vph)	430	610	744	394	610	611	508	1468	805	485	1404	683
Starvation Cap Reductn	0	0	0	65	0	185	0	0	0	0	0	0
Spillback Cap Reductn	0	31	0	0	0	0	0	0	10	5	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.13	0.18	0.46	0.86	0.13	0.41	0.71	0.60	0.48	0.60	0.66	0.07

Intersection Summary		
Area Type:	Other	
Cycle Length: 120		
Actuated Cycle Length: 120		
Offset: 59 (49%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green		
Natural Cycle: 80		
Control Type: Actuated-Coordinated		
Maximum v/c Ratio: 0.87		
Intersection Signal Delay: 26.5		Intersection LOS: C
Intersection Capacity Utilization 75.3%		ICU Level of Service D
Analysis Period (min) 15		

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: Highway 2A & Access Rd/C&E Trail



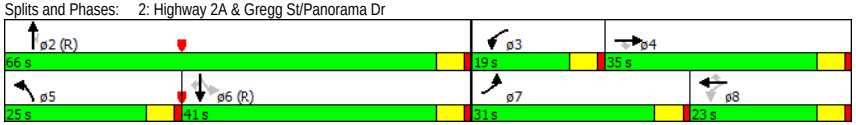
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	594	282	201	166	269	24	505	800	232	41	753	710
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	80.0		50.0	50.0		50.0
Storage Lanes	2		1	1		1	2		1	1		1
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95	1.00	0.97	0.95	1.00	1.00	0.95	1.00
Frt			0.850			0.850			0.850			
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3372	3476	1555	1738	3476	1555	3372	3476	1555	1738	3476	1830
Flt Permitted	0.950			0.565			0.950			0.326		
Satd. Flow (perm)	3372	3476	1555	1034	3476	1555	3372	3476	1555	596	3476	1830
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			218			155			252			417
Link Speed (k/h)		50			50			60			60	
Link Distance (m)		48.3			64.7			472.7			547.5	
Travel Time (s)		3.5			4.7			28.4			32.9	
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)	646	307	218	180	292	26	549	870	252	45	818	772
Turn Type	Prot	NA	Perm	pm+pt	NA	Perm	Prot	NA	Perm	Perm	NA	Perm
Protected Phases	7	4		3	8		5	2			6	
Permitted Phases			4	8		8			2	6		6
Detector Phase	7	4	4	3	8	8	5	2	2	6	6	6
Switch Phase												
Minimum Initial (s)	8.0	10.0	10.0	4.0	10.0	10.0	4.0	20.0	20.0	20.0	20.0	20.0
Minimum Split (s)	13.0	31.0	31.0	9.0	15.0	15.0	9.0	31.0	31.0	31.0	31.0	31.0
Total Split (s)	31.0	35.0	35.0	19.0	23.0	23.0	25.0	66.0	66.0	41.0	41.0	41.0
Total Split (%)	25.8%	29.2%	29.2%	15.8%	19.2%	19.2%	20.8%	55.0%	55.0%	34.2%	34.2%	34.2%
Yellow 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
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead			Lag	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes			Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Min	C-Min	C-Min	C-Min	C-Min
Act Effct Green (s)	25.4	27.7	27.7	27.8	15.0	15.0	22.2	64.6	64.6	37.4	37.4	37.4
Actuated g/C Ratio	0.21	0.23	0.23	0.23	0.12	0.12	0.18	0.54	0.54	0.31	0.31	0.31
v/c Ratio	0.91	0.38	0.41	0.57	0.67	0.08	0.88	0.46	0.26	0.24	0.75	0.90
Control Delay	63.8	40.2	7.3	34.4	57.8	0.5	53.8	16.6	2.6	36.8	39.1	28.1
Queue Delay	0.0	0.0	0.0	1.3	3.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	63.8	40.2	7.3	35.7	61.7	0.5	53.8	16.6	2.6	36.8	39.1	28.1
LOS	E	D	A	D	E	A	D	B	A	D	D	C
Approach Delay		47.1			49.1			26.7			33.9	
Approach LOS		D			D			C			C	
Queue Length 50th (m)	76.5	32.4	0.0	28.7	35.0	0.0	62.5	89.4	8.0	4.8	49.4	26.2
Queue Length 95th (m)	#106.7	44.4	18.6	44.1	48.3	0.0	#101.4	59.5	m9.6	m12.4	89.8	#115.8
Internal Link Dist (m)		24.3			40.7			448.7			523.5	
Turn Bay Length (m)							80.0		50.0	50.0		50.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Base Capacity (vph)	730	869	552	332	521	365	622	1871	953	185	1084	857
Starvation Cap Reductn	0	0	0	47	151	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.88	0.35	0.39	0.63	0.79	0.07	0.88	0.46	0.26	0.24	0.75	0.90

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 76 (63%), Referenced to phase 2:NBT and 6:SBTL, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.91
Intersection Signal Delay: 36.1 Intersection LOS: D
Intersection Capacity Utilization 80.7% ICU Level of Service D
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: Highway 2A & Gregg St/Panorama Dr



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	69	70	36	99	29	5	58	1420	183	11	1031	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	0.0		0.0	0.0		50.0
Storage Lanes	1		0	1		0	0		1	0		1
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95	1.00
Frt		0.949			0.980				0.850			0.850
Flt Protected	0.950			0.950				0.998			0.999	
Satd. Flow (prot)	1738	1736	0	1738	1793	0	0	3377	1555	0	3473	1555
Flt Permitted	0.733			0.601				0.821			0.926	
Satd. Flow (perm)	1341	1736	0	1100	1793	0	0	2778	1555	0	3219	1555
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		20			5				199			27
Link Speed (k/h)		50			50			60			60	
Link Distance (m)		54.4			44.4			100.1			472.7	
Travel Time (s)		3.9			3.2			6.0			28.4	
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
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%	5%	8%	5%	5%	5%	5%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	75	115	0	108	37	0	0	1606	199	0	1133	27
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		6
Detector Phase	4	4		8	8		2	2	2	6	6	6
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		20.0	20.0	20.0	20.0	20.0	20.0
Minimum Split (s)	31.0	31.0		31.0	31.0		25.0	25.0	25.0	25.0	25.0	25.0
Total Split (s)	31.0	31.0		31.0	31.0		89.0	89.0	89.0	89.0	89.0	89.0
Total Split (%)	25.8%	25.8%		25.8%	25.8%		74.2%	74.2%	74.2%	74.2%	74.2%	74.2%
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0	0.0		0.0	0.0
Total Lost Time (s)	5.0	5.0		5.0	5.0			5.0	5.0		5.0	5.0
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	None	None		None	None		C-Min	C-Min	C-Min	C-Min	C-Min	C-Min
Act Effct Green (s)	16.9	16.9		16.9	16.9			93.1	93.1		93.1	93.1
Actuated g/C Ratio	0.14	0.14		0.14	0.14			0.78	0.78		0.78	0.78
v/c Ratio	0.40	0.44		0.70	0.14			0.75	0.16		0.45	0.02
Control Delay	50.4	41.6		70.8	38.9			4.3	0.2		4.6	0.9
Queue Delay	0.0	0.0		0.0	0.0			0.0	0.0		0.0	0.0
Total Delay	50.4	41.6		70.8	38.9			4.3	0.2		4.6	0.9
LOS	D	D		E	D			A	A		A	A
Approach Delay		45.1			62.7			3.8			4.5	
Approach LOS		D			E			A			A	
Queue Length 50th (m)	16.5	20.8		24.8	6.7			37.3	0.0		10.0	0.0
Queue Length 95th (m)	m28.1	m35.0		40.5	15.2			10.3	m0.0		135.0	m1.5
Internal Link Dist (m)		30.4			20.4			76.1			448.7	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Bay Length (m)												50.0
Base Capacity (vph)	290	391		238	392			2154	1250		2496	1212
Starvation Cap Reductn	0	0		0	0			0	0		0	0
Spillback Cap Reductn	0	0		0	0			0	0		0	0
Storage Cap Reductn	0	0		0	0			0	0		0	0
Reduced v/c Ratio	0.26	0.29		0.45	0.09			0.75	0.16		0.45	0.02

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 119 (99%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 90			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.75			
Intersection Signal Delay: 9.0		Intersection LOS: A	
Intersection Capacity Utilization 94.4%		ICU Level of Service F	
Analysis Period (min) 15			

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 3: Highway 2A & ParkSt/Park St

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	253	20	1812	432	42	1104
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	0.0		80.0	50.0	
Storage Lanes	2	1		1	0	
Taper Length (m)	2.5				2.5	
Lane Util. Factor	0.97	1.00	0.95	1.00	0.95	0.95
Frt		0.850		0.850		
Flt Protected	0.950					0.998
Satd. Flow (prot)	2951	1361	3318	1361	0	3451
Flt Permitted	0.950					0.724
Satd. Flow (perm)	2951	1361	3318	1361	0	2504
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		22		470		
Link Speed (k/h)	50		60			60
Link Distance (m)	50.6		327.8			219.5
Travel Time (s)	3.6		19.7			13.2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	20%	20%	10%	20%	20%	5%
Shared Lane Traffic (%)						
Lane Group Flow (vph)	275	22	1970	470	0	1246
Turn Type	Prot	Perm	NA	Perm	Perm	NA
Protected Phases	8		2			6
Permitted Phases		8		2	6	
Detector Phase	8	8	2	2	6	6
Switch Phase						
Minimum Initial (s)	8.0	8.0	20.0	20.0	20.0	20.0
Minimum Split (s)	27.0	27.0	25.0	25.0	25.0	25.0
Total Split (s)	27.0	27.0	93.0	93.0	93.0	93.0
Total Split (%)	22.5%	22.5%	77.5%	77.5%	77.5%	77.5%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0		0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0		5.0
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	None	None	C-Min	C-Min	C-Min	C-Min
Act Effct Green (s)	16.6	16.6	93.4	93.4		93.4
Actuated g/C Ratio	0.14	0.14	0.78	0.78		0.78
v/c Ratio	0.67	0.11	0.76	0.40		0.64
Control Delay	57.2	16.9	6.5	1.1		7.3
Queue Delay	0.0	0.0	0.0	0.0		0.0
Total Delay	57.2	16.9	6.5	1.1		7.3
LOS	E	B	A	A		A
Approach Delay	54.2		5.5			7.3
Approach LOS	D		A			A
Queue Length 50th (m)	32.2	0.0	64.0	4.2		13.0
Queue Length 95th (m)	43.9	7.2	82.8	m5.8		47.5
Internal Link Dist (m)	26.6		303.8			195.5

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Turn Bay Length (m)				80.0		
Base Capacity (vph)	541	267	2582	1163		1949
Starvation Cap Reductn	0	0	34	0		0
Spillback Cap Reductn	0	0	0	0		0
Storage Cap Reductn	0	0	0	0		0
Reduced v/c Ratio	0.51	0.08	0.77	0.40		0.64

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 96 (80%), Referenced to phase 2:NBT and 6:SBTL, Start of Green
Natural Cycle: 80
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.76
Intersection Signal Delay: 9.7 Intersection LOS: A
Intersection Capacity Utilization 76.7% ICU Level of Service D
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 5: Highway 2A & South St

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	488	183	408	1816	1051	397
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	0.0	50.0			80.0
Storage Lanes	2	1	1			1
Taper Length (m)	2.5		2.5			
Lane Util. Factor	0.97	1.00	1.00	0.95	0.95	1.00
Frt		0.850				0.850
Flt Protected	0.950		0.950			
Satd. Flow (prot)	3372	1555	1738	3476	3476	1555
Flt Permitted	0.950		0.098			
Satd. Flow (perm)	3372	1555	179	3476	3476	1555
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		199				387
Link Speed (k/h)	50			60	60	
Link Distance (m)	79.1			148.6	327.8	
Travel Time (s)	5.7			8.9	19.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Lane Group Flow (vph)	530	199	443	1974	1142	432
Turn Type	Prot	Perm	pm+pt	NA	NA	Perm
Protected Phases	7		5	2	6	
Permitted Phases		7	2			6
Detector Phase	7	7	5	2	6	6
Switch Phase						
Minimum Initial (s)	8.0	8.0	8.0	20.0	20.0	20.0
Minimum Split (s)	31.0	31.0	13.0	25.0	25.0	25.0
Total Split (s)	35.0	35.0	37.0	85.0	48.0	48.0
Total Split (%)	29.2%	29.2%	30.8%	70.8%	40.0%	40.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag			Lead		Lag	Lag
Lead-Lag Optimize?			Yes		Yes	Yes
Recall Mode	None	None	None	C-Min	C-Min	C-Min
Act Effct Green (s)	24.3	24.3	85.7	85.7	51.6	51.6
Actuated g/C Ratio	0.20	0.20	0.71	0.71	0.43	0.43
v/c Ratio	0.78	0.42	0.88	0.80	0.76	0.49
Control Delay	53.3	7.9	47.8	15.3	38.9	10.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	53.3	7.9	47.8	15.3	38.9	10.4
LOS	D	A	D	B	D	B
Approach Delay	40.9			21.3	31.1	
Approach LOS	D			C	C	
Queue Length 50th (m)	61.4	0.0	76.0	142.8	111.8	12.7
Queue Length 95th (m)	75.4	17.8	#130.4	209.7	#173.3	49.4
Internal Link Dist (m)	55.1			124.6	303.8	
Turn Bay Length (m)			50.0			80.0

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Base Capacity (vph)	843	538	551	2483	1495	889
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.63	0.37	0.80	0.80	0.76	0.49

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 3 (3%), Referenced to phase 2:NBTL and 6:SBT, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.88
Intersection Signal Delay: 27.6 Intersection LOS: C
Intersection Capacity Utilization 78.1% ICU Level of Service D
Analysis Period (min) 15
\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 6: Highway 2A & Broadway Ave

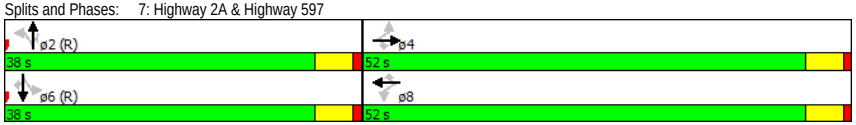
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	126	164	174	101	108	205	247	1541	60	115	891	97
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		50.0	0.0		50.0	50.0		50.0	50.0		50.0
Storage Lanes	0		1	0		1	1		1	1		1
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected		0.979			0.976		0.950			0.950		
Satd. Flow (prot)	0	1717	1512	0	1696	1555	1690	1779	1512	1738	1830	1555
Flt Permitted		0.650			0.514		0.077			0.077		
Satd. Flow (perm)	0	1140	1512	0	893	1555	137	1779	1512	141	1830	1555
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			31			24			24			52
Link Speed (k/h)		50			50			60			60	
Link Distance (m)		67.4			78.0			157.9			368.2	
Travel Time (s)		4.9			5.6			9.5			22.1	
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
Heavy Vehicles (%)	5%	13%	8%	8%	13%	5%	8%	8%	8%	5%	5%	5%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	315	189	0	227	223	268	1675	65	125	968	105
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2		2	6		6
Detector Phase	4	4	4	8	8	8	2	2	2	6	6	6
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	20.0	20.0	20.0	20.0	20.0	20.0
Minimum Split (s)	24.0	24.0	24.0	24.0	24.0	24.0	26.0	26.0	26.0	26.0	26.0	26.0
Total Split (s)	52.0	52.0	52.0	52.0	52.0	52.0	38.0	38.0	38.0	38.0	38.0	38.0
Total Split (%)	57.8%	57.8%	57.8%	57.8%	57.8%	57.8%	42.2%	42.2%	42.2%	42.2%	42.2%	42.2%
Yellow 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
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	None	None	None	None	None	None	C-Max	C-Max	C-Max	C-Max	C-Max	C-Max
Act Effct Green (s)		28.2	28.2		28.2	28.2	51.8	51.8	51.8	51.8	51.8	51.8
Actuated g/C Ratio		0.31	0.31		0.31	0.31	0.58	0.58	0.58	0.58	0.58	0.58
v/c Ratio		0.88	0.38		0.81	0.44	3.44	1.64	0.07	1.56	0.92	0.11
Control Delay		53.5	20.3		49.2	22.9	1137.7	312.9	8.5	325.7	35.5	7.0
Queue Delay		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay		53.5	20.3		49.2	22.9	1137.7	312.9	8.5	325.7	35.5	7.0
LOS		D	C		D	C	F	F	A	F	D	A
Approach Delay		41.1			36.2			413.1			63.3	
Approach LOS		D			D			F			E	
Queue Length 50th (m)		51.1	20.7		35.7	26.9	~71.0	~423.6	2.9	~30.8	141.1	3.8
Queue Length 95th (m)		70.2	31.1		53.4	37.7	#124.0	#540.9	10.9	#57.6	#272.2	14.0
Internal Link Dist (m)		43.4			54.0			133.9			344.2	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Bay Length (m)			50.0			50.0	50.0		50.0	50.0		50.0
Base Capacity (vph)		595	804		466	823	78	1022	879	80	1052	916
Starvation Cap Reductn		0	0		0	0	0	0	0	0	0	0
Spillback Cap Reductn		0	0		0	0	0	0	0	0	0	0
Storage Cap Reductn		0	0		0	0	0	0	0	0	0	0
Reduced v/c Ratio		0.53	0.24		0.49	0.27	3.44	1.64	0.07	1.56	0.92	0.11

Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 120
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 3.44
Intersection Signal Delay: 226.5 Intersection LOS: F
Intersection Capacity Utilization 141.3% ICU Level of Service H
Analysis Period (min) 15
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 7: Highway 2A & Highway 597

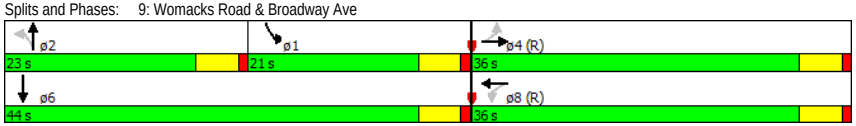


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	39	278	5	58	335	911	5	5	5	568	5	19
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	50.0		0.0	0.0		0.0	50.0		0.0	100.0		0.0
Storage Lanes	0		0	0		1	1		0	2		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.97	1.00	1.00
Frt		0.998						0.925			0.879	
Flt Protected		0.994			0.993		0.950			0.950		
Satd. Flow (prot)	0	1815	0	0	1817	1830	1738	1692	0	3372	1608	0
Flt Permitted		0.917			0.902		0.740			0.950		
Satd. Flow (perm)	0	1674	0	0	1650	1830	1354	1692	0	3372	1608	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		1				990		5			21	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		860.4			145.8			110.5			601.0	
Travel Time (s)		61.9			10.5			8.0			43.3	
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)	0	349	0	0	427	990	5	10	0	617	26	0
Turn Type	Perm	NA		Perm	NA	Free	Perm	NA		Prot	NA	
Protected Phases		4			8			2		1	6	
Permitted Phases	4			8		Free	2					
Detector Phase	4	4		8	8		2	2		1	6	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		10.0	10.0		10.0	20.0	
Minimum Split (s)	23.0	23.0		23.0	23.0		23.0	23.0		15.0	25.0	
Total Split (s)	36.0	36.0		36.0	36.0		23.0	23.0		21.0	44.0	
Total Split (%)	45.0%	45.0%		45.0%	45.0%		28.8%	28.8%		26.3%	55.0%	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		5.0			5.0		5.0	5.0		5.0	5.0	
Lead/Lag							Lead	Lead		Lag		
Lead-Lag Optimize?							Yes	Yes		Yes		
Recall Mode	C-Min	C-Min		C-Min	C-Min		None	None		Min	Min	
Act Effct Green (s)		42.6			42.6	80.0	11.6	11.6		19.8	27.4	
Actuated g/C Ratio		0.53			0.53	1.00	0.14	0.14		0.25	0.34	
v/c Ratio		0.39			0.49	0.54	0.03	0.04		0.74	0.05	
Control Delay		15.2			13.4	2.4	27.4	21.3		35.3	6.3	
Queue Delay		0.0			0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay		15.2			13.4	2.4	27.4	21.3		35.3	6.3	
LOS		B			B	A	C	C		D	A	
Approach Delay		15.2			5.7			23.4			34.1	
Approach LOS		B			A			C			C	
Queue Length 50th (m)		23.0			19.2	12.8	0.7	0.7		43.7	0.6	
Queue Length 95th (m)		64.7			86.5	20.6	3.3	4.4		#76.9	4.1	
Internal Link Dist (m)		836.4			121.8			86.5			577.0	
Turn Bay Length (m)							50.0			100.0		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Base Capacity (vph)		892			879	1830	304	384		833	794	
Starvation Cap Reductn		0			0	0	0	0		0	0	
Spillback Cap Reductn		0			0	0	0	0		0	0	
Storage Cap Reductn		0			0	0	0	0		0	0	
Reduced v/c Ratio		0.39			0.49	0.54	0.02	0.03		0.74	0.03	

Intersection Summary		
Area Type:	Other	
Cycle Length: 80		
Actuated Cycle Length: 80		
Offset: 28 (35%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green		
Natural Cycle: 70		
Control Type: Actuated-Coordinated		
Maximum v/c Ratio: 0.74		
Intersection Signal Delay: 14.7	Intersection LOS: B	
Intersection Capacity Utilization 73.3%	ICU Level of Service D	
Analysis Period (min) 15		
# 95th percentile volume exceeds capacity, queue may be longer.		
Queue shown is maximum after two cycles.		

Splits and Phases: 9: Womacks Road & Broadway Ave



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	624	378	8	2	550	216	10	8	7	202	0	350
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	50.0		50.0	50.0		50.0	0.0		0.0	0.0		0.0
Storage Lanes	1		1	1		1	0		0	0		1
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850		0.961				0.850
Flt Protected	0.950			0.950				0.981			0.950	
Satd. Flow (prot)	1690	3230	1555	1738	3174	1512	0	1725	0	0	1690	1512
Flt Permitted	0.170			0.511				0.875			0.739	
Satd. Flow (perm)	302	3230	1555	935	3174	1512	0	1538	0	0	1315	1512
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			22			235		8				380
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		267.0			499.4			80.3			111.2	
Travel Time (s)		19.2			36.0			5.8			8.0	
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
Heavy Vehicles (%)	8%	13%	5%	5%	15%	8%	5%	5%	5%	8%	5%	8%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	678	411	9	2	598	235	0	28	0	0	220	380
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA		Perm	NA	Perm
Protected Phases	7	4			8			2			6	
Permitted Phases	4		4	8		8	2			6		6
Detector Phase	7	4	4	8	8	8	2	2		6	6	6
Switch Phase												
Minimum Initial (s)	8.0	20.0	20.0	20.0	20.0	20.0	10.0	10.0		8.0	8.0	8.0
Minimum Split (s)	13.0	25.0	25.0	25.0	25.0	25.0	34.0	34.0		34.0	34.0	34.0
Total Split (s)	40.0	65.0	65.0	25.0	25.0	25.0	35.0	35.0		35.0	35.0	35.0
Total Split (%)	40.0%	65.0%	65.0%	25.0%	25.0%	25.0%	35.0%	35.0%		35.0%	35.0%	35.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0		1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0		0.0			0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0		5.0			5.0	5.0
Lead/Lag	Lead			Lag	Lag	Lag						
Lead-Lag Optimize?	Yes			Yes	Yes	Yes						
Recall Mode	None	Min	Min	Min	Min	Min	None	None		None	None	None
Act Effct Green (s)	60.3	60.3	60.3	20.1	20.1	20.1		20.9			20.9	20.9
Actuated g/C Ratio	0.66	0.66	0.66	0.22	0.22	0.22		0.23			0.23	0.23
v/c Ratio	0.92	0.19	0.01	0.01	0.86	0.46		0.08			0.73	0.59
Control Delay	41.2	7.1	1.4	31.5	48.9	7.8		21.0			47.0	7.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0			0.0	0.0
Total Delay	41.2	7.1	1.4	31.5	48.9	7.8		21.0			47.0	7.2
LOS	D	A	A	C	D	A		C			D	A
Approach Delay		28.1			37.3			21.0			21.8	
Approach LOS		C			D			C			C	
Queue Length 50th (m)	92.9	13.1	0.0	0.3	53.2	0.0		2.8			35.7	0.0
Queue Length 95th (m)	#191.8	25.1	1.0	2.2	#93.4	18.9		9.0			59.3	20.3
Internal Link Dist (m)		243.0			475.4			56.3			87.2	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Bay Length (m)	50.0		50.0	50.0		50.0						
Base Capacity (vph)	734	2135	1035	205	699	516		513			434	754
Starvation Cap Reductn	0	0	0	0	0	0		0			0	0
Spillback Cap Reductn	0	0	0	0	0	0		0			0	0
Storage Cap Reductn	0	0	0	0	0	0		0			0	0
Reduced v/c Ratio	0.92	0.19	0.01	0.01	0.86	0.46		0.05			0.51	0.50

Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 91.2
Natural Cycle: 90
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.92
Intersection Signal Delay: 29.6 Intersection LOS: C
Intersection Capacity Utilization 81.6% ICU Level of Service D
Analysis Period (min) 15
\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

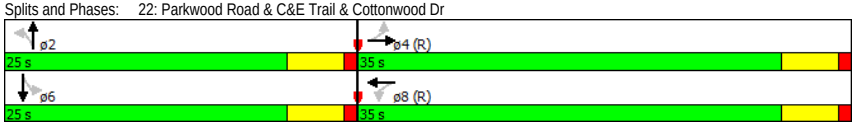
Splits and Phases: 19: Highway 597 & Vista Trail

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	238	424	0	24	271	33	53	45	40	50	18	213
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.986			0.961			0.898	
Flt Protected	0.950				0.996			0.981			0.991	
Satd. Flow (prot)	1659	1746	0	0	1747	0	0	1693	0	0	1598	0
Flt Permitted	0.540				0.954			0.812			0.922	
Satd. Flow (perm)	943	1746	0	0	1673	0	0	1401	0	0	1487	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					13			36			232	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		83.0			312.1			551.6			387.8	
Travel Time (s)		6.0			22.5			39.7			27.9	
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
Heavy Vehicles (%)	10%	10%	10%	8%	8%	8%	7%	7%	7%	7%	7%	7%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	259	461	0	0	357	0	0	150	0	0	306	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		20.0	20.0		20.0	20.0	
Minimum Split (s)	23.0	23.0		23.0	23.0		25.0	25.0		25.0	25.0	
Total Split (s)	35.0	35.0		35.0	35.0		25.0	25.0		25.0	25.0	
Total Split (%)	58.3%	58.3%		58.3%	58.3%		41.7%	41.7%		41.7%	41.7%	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0			0.0			0.0			0.0	
Total Lost Time (s)	5.0	5.0			5.0			5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	C-Min	C-Min		C-Min	C-Min		Min	Min		Min	Min	
Act Effct Green (s)	30.0	30.0			30.0			20.0			20.0	
Actuated g/C Ratio	0.50	0.50			0.50			0.33			0.33	
v/c Ratio	0.55	0.53			0.42			0.31			0.47	
Control Delay	15.2	12.8			11.1			13.4			7.3	
Queue Delay	0.3	1.6			0.1			0.1			0.1	
Total Delay	15.5	14.4			11.2			13.5			7.4	
LOS	B	B			B			B			A	
Approach Delay		14.8			11.2			13.5			7.4	
Approach LOS		B			B			B			A	
Queue Length 50th (m)	22.4	39.7			22.0			8.9			5.6	
Queue Length 95th (m)	34.6	54.9			39.0			20.8			21.5	
Internal Link Dist (m)		59.0			288.1			527.6			363.8	
Turn Bay Length (m)												
Base Capacity (vph)	471	873			843			491			650	
Starvation Cap Reductn	26	244			0			0			0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Spillback Cap Reductn	0	0			55			27			35	
Storage Cap Reductn	0	0			0			0			0	
Reduced v/c Ratio	0.58	0.73			0.45			0.32			0.50	

Intersection Summary			
Area Type:	Other		
Cycle Length: 60			
Actuated Cycle Length: 60			
Offset: 50 (83%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green			
Natural Cycle: 55			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.55			
Intersection Signal Delay: 12.3		Intersection LOS: B	
Intersection Capacity Utilization 70.7%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 22: Parkwood Road & C&E Trail & Cottonwood Dr



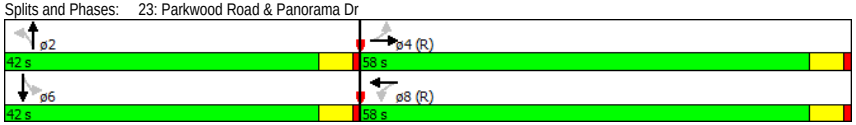
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	291	236	41	12	166	50	42	50	33	62	37	260
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.989			0.970			0.940			0.869	
Flt Protected		0.975			0.997		0.950			0.950		
Satd. Flow (prot)	0	3352	0	0	1769	0	1706	1688	0	1706	1560	0
Flt Permitted		0.699			0.965		0.305			0.699		
Satd. Flow (perm)	0	2403	0	0	1713	0	548	1688	0	1255	1560	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		12			21			36			283	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		64.7			305.1			482.3			551.6	
Travel Time (s)		4.7			22.0			34.7			39.7	
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
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%	7%	7%	7%	7%	7%	7%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	618	0	0	247	0	46	90	0	67	323	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	20.0	20.0		20.0	20.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	25.0	25.0		25.0	25.0		23.0	23.0		23.0	23.0	
Total Split (s)	58.0	58.0		58.0	58.0		42.0	42.0		42.0	42.0	
Total Split (%)	58.0%	58.0%		58.0%	58.0%		42.0%	42.0%		42.0%	42.0%	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		5.0			5.0		5.0	5.0		5.0	5.0	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	C-Min	C-Min		C-Min	C-Min		None	None		None	None	
Act Effct Green (s)		76.9			76.9		13.1	13.1		13.1	13.1	
Actuated g/C Ratio		0.77			0.77		0.13	0.13		0.13	0.13	
v/c Ratio		0.33			0.19		0.65	0.36		0.41	0.72	
Control Delay		4.5			3.7		78.3	28.0		46.2	17.0	
Queue Delay		2.1			0.0		0.0	0.0		0.0	0.0	
Total Delay		6.6			3.7		78.3	28.0		46.2	17.0	
LOS		A			A		E	C		D	B	
Approach Delay		6.6			3.7			45.0			22.0	
Approach LOS		A			A			D			C	
Queue Length 50th (m)		13.7			8.4		8.8	9.7		12.4	7.2	
Queue Length 95th (m)		30.2			21.6		19.6	22.0		23.2	31.7	
Internal Link Dist (m)		40.7			281.1			458.3			527.6	
Turn Bay Length (m)												
Base Capacity (vph)		1850			1322		202	647		464	755	
Starvation Cap Reductn		1049			0		0	0		0	0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Spillback Cap Reductn		0			0		0	0		0	0	
Storage Cap Reductn		0			0		0	0		0	0	
Reduced v/c Ratio		0.77			0.19		0.23	0.14		0.14	0.43	

Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 0 (0%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green
Natural Cycle: 50
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.72
Intersection Signal Delay: 14.1 Intersection LOS: B
Intersection Capacity Utilization 76.3% ICU Level of Service D
Analysis Period (min) 15

Splits and Phases: 23: Parkwood Road & Panorama Dr



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	689	147	277	1206	185	387
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)		50.0	50.0		50.0	0.0
Storage Lanes		1	1		0	1
Taper Length (m)			2.5		2.5	
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Frt		0.850				0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	3476	1555	1738	3476	1738	1555
Flt Permitted			0.354		0.950	
Satd. Flow (perm)	3476	1555	648	3476	1738	1555
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		160				243
Link Speed (k/h)	50			50	50	
Link Distance (m)	145.8			292.0	243.5	
Travel Time (s)	10.5			21.0	17.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Lane Group Flow (vph)	749	160	301	1311	201	421
Turn Type	NA	Perm	Perm	NA	Perm	Perm
Protected Phases	4			8		
Permitted Phases		4	8		2	2
Detector Phase	4	4	8	8	2	2
Switch Phase						
Minimum Initial (s)	20.0	20.0	20.0	20.0	4.0	4.0
Minimum Split (s)	25.0	25.0	25.0	25.0	23.0	23.0
Total Split (s)	57.0	57.0	57.0	57.0	23.0	23.0
Total Split (%)	71.3%	71.3%	71.3%	71.3%	28.8%	28.8%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	C-Min	C-Min	C-Min	C-Min	None	None
Act Effct Green (s)	55.1	55.1	55.1	55.1	14.9	14.9
Actuated g/C Ratio	0.69	0.69	0.69	0.69	0.19	0.19
v/c Ratio	0.31	0.14	0.67	0.55	0.62	0.86
Control Delay	3.6	1.2	18.5	7.8	38.1	31.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	3.6	1.2	18.5	7.8	38.1	31.8
LOS	A	A	B	A	D	C
Approach Delay	3.2			9.8	33.9	
Approach LOS	A			A	C	
Queue Length 50th (m)	46.3	9.0	24.7	48.7	27.4	25.3
Queue Length 95th (m)	12.3	m0.4	#74.6	67.6	46.6	#69.1
Internal Link Dist (m)	121.8			268.0	219.5	
Turn Bay Length (m)		50.0	50.0		50.0	

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Base Capacity (vph)	2395	1120	446	2395	391	538
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.31	0.14	0.67	0.55	0.51	0.78

Intersection Summary

Area Type: Other
Cycle Length: 80
Actuated Cycle Length: 80
Offset: 0 (0%), Referenced to phase 4:EBT and 8:WBTL, Start of Green
Natural Cycle: 65
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.86
Intersection Signal Delay: 12.6 Intersection LOS: B
Intersection Capacity Utilization 58.5% ICU Level of Service B
Analysis Period (min) 15
\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 34: Broadway Avenue & Gregg St

APPENDIX F 22.5K HORIZON SYNCHRO MODELLING

Intersection	
Int Delay, s/veh	2.4

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Vol, veh/h	0	164	0	910	1445	63
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	-	500	-	-	-
Veh in Median Storage, #	1	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	8	8	5	5	8	8
Mvmt Flow	0	186	0	1034	1642	72

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	2195	857	1714	0	-	0
Stage 1	1678	-	-	-	-	-
Stage 2	517	-	-	-	-	-
Critical Hdwy	6.96	7.06	4.2	-	-	-
Critical Hdwy Stg 1	5.96	-	-	-	-	-
Critical Hdwy Stg 2	5.96	-	-	-	-	-
Follow-up Hdwy	3.58	3.38	2.25	-	-	-
Pot Cap-1 Maneuver	36	289	353	-	-	-
Stage 1	129	-	-	-	-	-
Stage 2	546	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	36	289	353	-	-	-
Mov Cap-2 Maneuver	105	-	-	-	-	-
Stage 1	129	-	-	-	-	-
Stage 2	546	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	37.5	0	0
HCM LOS	E		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	353	-	289	-	-
HCM Lane V/C Ratio	-	-	0.645	-	-
HCM Control Delay (s)	0	-	37.5	-	-
HCM Lane LOS	A	-	E	-	-
HCM 95th %tile Q(veh)	0	-	4.1	-	-

Intersection	
Int Delay, s/veh	0.8

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Vol, veh/h	4	7	70	5	5	71
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	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	5	5	5	5	5	5
Mvmt Flow	5	8	80	6	6	81

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	174	82	0	0	85	0
Stage 1	82	-	-	-	-	-
Stage 2	92	-	-	-	-	-
Critical Hdwy	6.45	6.25	-	-	4.15	-
Critical Hdwy Stg 1	5.45	-	-	-	-	-
Critical Hdwy Stg 2	5.45	-	-	-	-	-
Follow-up Hdwy	3.545	3.345	-	-	2.245	-
Pot Cap-1 Maneuver	809	969	-	-	1493	-
Stage 1	934	-	-	-	-	-
Stage 2	924	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	806	969	-	-	1493	-
Mov Cap-2 Maneuver	806	-	-	-	-	-
Stage 1	934	-	-	-	-	-
Stage 2	920	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9	0	0.5
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	903	1493	-
HCM Lane V/C Ratio	-	-	0.014	0.004	-
HCM Control Delay (s)	-	-	9	7.4	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0	0	-

Intersection	
Int Delay, s/veh	3.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Vol, veh/h	17	24	40	12	74	149
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	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	5	5	5	5	5	5
Mvmt Flow	19	27	45	14	84	169

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	390	52	0	0	59	0
Stage 1	52	-	-	-	-	-
Stage 2	338	-	-	-	-	-
Critical Hdwy	6.45	6.25	-	-	4.15	-
Critical Hdwy Stg 1	5.45	-	-	-	-	-
Critical Hdwy Stg 2	5.45	-	-	-	-	-
Follow-up Hdwy	3.545	3.345	-	-	2.245	-
Pot Cap-1 Maneuver	608	1007	-	-	1526	-
Stage 1	963	-	-	-	-	-
Stage 2	716	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	571	1007	-	-	1526	-
Mov Cap-2 Maneuver	571	-	-	-	-	-
Stage 1	963	-	-	-	-	-
Stage 2	672	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10	0	2.5
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	765	1526	-
HCM Lane V/C Ratio	-	-	0.061	0.055	-
HCM Control Delay (s)	-	-	10	7.5	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.2	0.2	-

Intersection	
Int Delay, s/veh	3.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR
Vol, veh/h	19	15	5	14	39	10	6	44	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-
Peak Hour Factor	88	88	88	88	88	88	88	88	88
Heavy Vehicles, %	8	8	8	8	8	8	5	5	5
Mvmt Flow	22	17	6	16	44	11	7	50	6

Major/Minor	Minor2			Minor1			Major1		
Conflicting Flow All	322	297	206	306	314	53	225	0	0
Stage 1	228	228	-	66	66	-	-	-	-
Stage 2	94	69	-	240	248	-	-	-	-
Critical Hdwy	7.18	6.58	6.28	7.18	6.58	6.28	4.15	-	-
Critical Hdwy Stg 1	6.18	5.58	-	6.18	5.58	-	-	-	-
Critical Hdwy Stg 2	6.18	5.58	-	6.18	5.58	-	-	-	-
Follow-up Hdwy	3.572	4.072	3.372	3.572	4.072	3.372	2.245	-	-
Pot Cap-1 Maneuver	619	605	820	635	592	998	1326	-	-
Stage 1	761	704	-	930	828	-	-	-	-
Stage 2	898	826	-	750	690	-	-	-	-
Platoon blocked, %								-	-
Mov Cap-1 Maneuver	571	597	820	611	584	998	1326	-	-
Mov Cap-2 Maneuver	571	597	-	611	584	-	-	-	-
Stage 1	757	698	-	925	824	-	-	-	-
Stage 2	836	822	-	721	684	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	11.4	11.4	0.8
HCM LOS	B	B	

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1326	-	-	605	632	1530	-	-
HCM Lane V/C Ratio	0.005	-	-	0.073	0.113	0.007	-	-
HCM Control Delay (s)	7.7	0	-	11.4	11.4	7.4	0	-
HCM Lane LOS	A	A	-	B	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.2	0.4	0	-	-

Intersection			
Int Delay, s/veh			

Movement	SBL	SBT	SBR
Vol, veh/h	10	164	34
Conflicting Peds, #/hr	0	0	0
Sign Control	Free	Free	Free
RT Channelized	-	-	None
Storage Length	-	-	-
Veh in Median Storage, #	-	0	-
Grade, %	-	0	-
Peak Hour Factor	88	88	88
Heavy Vehicles, %	5	5	5
Mvmt Flow	11	186	39

Major/Minor	Major2		
Conflicting Flow All	56	0	0
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	4.15	-	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	2.245	-	-
Pot Cap-1 Maneuver	1530	-	-
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	1530	-	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	SB
HCM Control Delay, s	0.4
HCM LOS	

Minor Lane/Major Mvmt

Intersection	
Int Delay, s/veh	2.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR
Vol, veh/h	4	1	48	0	1	1	45	29	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-
Peak Hour Factor	88	88	88	88	88	88	88	88	88
Heavy Vehicles, %	5	5	5	5	5	5	5	5	5
Mvmt Flow	5	1	55	0	1	1	51	33	0

Major/Minor	Minor2			Minor1			Major1		
Conflicting Flow All	337	336	201	363	344	33	209	0	0
Stage 1	201	201	-	135	135	-	-	-	-
Stage 2	136	135	-	228	209	-	-	-	-
Critical Hdwy	7.15	6.55	6.25	7.15	6.55	6.25	4.15	-	-
Critical Hdwy Stg 1	6.15	5.55	-	6.15	5.55	-	-	-	-
Critical Hdwy Stg 2	6.15	5.55	-	6.15	5.55	-	-	-	-
Follow-up Hdwy	3.545	4.045	3.345	3.545	4.045	3.345	2.245	-	-
Pot Cap-1 Maneuver	611	580	832	587	574	1032	1344	-	-
Stage 1	794	729	-	861	779	-	-	-	-
Stage 2	860	779	-	768	724	-	-	-	-
Platoon blocked, %								-	-
Mov Cap-1 Maneuver	591	557	832	531	552	1032	1344	-	-
Mov Cap-2 Maneuver	591	557	-	531	552	-	-	-	-
Stage 1	763	729	-	827	749	-	-	-	-
Stage 2	824	749	-	717	724	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	9.9	10	4.7
HCM LOS	A	B	

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1344	-	-	800	719	1560	-	-
HCM Lane V/C Ratio	0.038	-	-	0.075	0.003	-	-	-
HCM Control Delay (s)	7.8	0	-	9.9	10	0	-	-
HCM Lane LOS	A	A	-	A	B	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.2	0	0	-	-

Intersection	
Int Delay, s/veh	

Movement	SBL	SBT	SBR
Vol, veh/h	0	169	15
Conflicting Peds, #/hr	0	0	0
Sign Control	Free	Free	Free
RT Channelized	-	-	None
Storage Length	-	-	-
Veh in Median Storage, #	-	0	-
Grade, %	-	0	-
Peak Hour Factor	88	88	88
Heavy Vehicles, %	5	5	5
Mvmt Flow	0	192	17

Major/Minor	Major2		
Conflicting Flow All	33	0	0
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	4.15	-	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	2.245	-	-
Pot Cap-1 Maneuver	1560	-	-
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	1560	-	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	SB
HCM Control Delay, s	0
HCM LOS	

Minor Lane/Major Mvmt

Intersection	
Int Delay, s/veh	0.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR
Vol, veh/h	2	156	2	7	202	0	0	5	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None
Storage Length	-	-	1000	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-
Peak Hour Factor	88	88	88	88	88	88	88	88	88
Heavy Vehicles, %	5	5	5	5	5	5	5	5	5
Mvmt Flow	2	177	2	8	230	0	0	6	0

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	230	0	0	177	0	0	313	427	177
Stage 1	-	-	-	-	-	-	182	182	-
Stage 2	-	-	-	-	-	-	131	245	-
Critical Hdwy	4.2	-	-	4.15	-	-	7.375	6.575	6.275
Critical Hdwy Stg 1	-	-	-	-	-	-	6.175	5.575	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.575	5.575	-
Follow-up Hdwy	2.25	-	-	2.245	-	-	3.5475	4.0475	3.3475
Pot Cap-1 Maneuver	1313	-	-	1381	-	-	621	513	857
Stage 1	-	-	-	-	-	-	811	742	-
Stage 2	-	-	-	-	-	-	852	696	-
Platoon blocked, %		-	-		-	-			
Mov Cap-1 Maneuver	1313	-	-	1381	-	-	617	508	857
Mov Cap-2 Maneuver	-	-	-	-	-	-	658	557	-
Stage 1	-	-	-	-	-	-	809	741	-
Stage 2	-	-	-	-	-	-	846	691	-

Approach	EB	WB	NB
HCM Control Delay, s	0.1	0.3	11.5
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	557	1313	-	-	1381	-	-	577
HCM Lane V/C Ratio	0.01	0.002	-	-	0.006	-	-	0.002
HCM Control Delay (s)	11.5	7.7	0	-	7.6	0	-	11.3
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	0

Intersection	
Int Delay, s/veh	

Movement	SBL	SBT	SBR
Vol, veh/h	1	0	0
Conflicting Peds, #/hr	0	0	0
Sign Control	Stop	Stop	Stop
RT Channelized	-	-	None
Storage Length	-	-	-
Veh in Median Storage, #	-	1	-
Grade, %	-	0	-
Peak Hour Factor	88	88	88
Heavy Vehicles, %	5	5	5
Mvmt Flow	1	0	0

Major/Minor	Minor2		
Conflicting Flow All	430	427	115
Stage 1	245	245	-
Stage 2	185	182	-
Critical Hdwy	7.375	6.575	6.975
Critical Hdwy Stg 1	6.575	5.575	-
Critical Hdwy Stg 2	6.175	5.575	-
Follow-up Hdwy	3.5475	4.0475	3.3475
Pot Cap-1 Maneuver	516	513	907
Stage 1	730	696	-
Stage 2	808	742	-
Platoon blocked, %			
Mov Cap-1 Maneuver	508	508	907
Mov Cap-2 Maneuver	577	556	-
Stage 1	729	691	-
Stage 2	800	741	-

Approach	SB
HCM Control Delay, s	11.3
HCM LOS	B

Minor Lane/Major Mvmt

Intersection	
Int Delay, s/veh	1.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR
Vol, veh/h	1	91	3	1	40	2	1	1	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-
Peak Hour Factor	88	88	88	88	88	88	88	88	88
Heavy Vehicles, %	5	5	5	5	5	5	5	5	5
Mvmt Flow	1	103	3	1	45	2	1	1	5

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	48	0	0	107	0	0	160	157	105
Stage 1	-	-	-	-	-	-	107	107	-
Stage 2	-	-	-	-	-	-	53	50	-
Critical Hdwy	4.15	-	-	4.15	-	-	7.15	6.55	6.25
Critical Hdwy Stg 1	-	-	-	-	-	-	6.15	5.55	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.15	5.55	-
Follow-up Hdwy	2.245	-	-	2.245	-	-	3.545	4.045	3.345
Pot Cap-1 Maneuver	1540	-	-	1465	-	-	799	730	941
Stage 1	-	-	-	-	-	-	891	801	-
Stage 2	-	-	-	-	-	-	952	847	-
Platoon blocked, %		-	-		-	-			
Mov Cap-1 Maneuver	1540	-	-	1465	-	-	791	729	941
Mov Cap-2 Maneuver	-	-	-	-	-	-	791	729	-
Stage 1	-	-	-	-	-	-	890	800	-
Stage 2	-	-	-	-	-	-	942	846	-

Approach	EB	WB	NB
HCM Control Delay, s	0.1	0.2	9.2
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	871	1540	-	-	1465	-	-	884
HCM Lane V/C Ratio	0.008	0.001	-	-	0.001	-	-	0.018
HCM Control Delay (s)	9.2	7.3	0	-	7.5	0	-	9.1
HCM Lane LOS	A	A	A	-	A	A	-	A
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	0.1

Intersection	
Int Delay, s/veh	

Movement	SBL	SBT	SBR
Vol, veh/h	6	1	7
Conflicting Peds, #/hr	0	0	0
Sign Control	Stop	Stop	Stop
RT Channelized	-	-	None
Storage Length	-	-	-
Veh in Median Storage, #	-	0	-
Grade, %	-	0	-
Peak Hour Factor	88	88	88
Heavy Vehicles, %	5	5	5
Mvmt Flow	7	1	8

Major/Minor	Minor2		
Conflicting Flow All	159	158	47
Stage 1	49	49	-
Stage 2	110	109	-
Critical Hdwy	7.15	6.55	6.25
Critical Hdwy Stg 1	6.15	5.55	-
Critical Hdwy Stg 2	6.15	5.55	-
Follow-up Hdwy	3.545	4.045	3.345
Pot Cap-1 Maneuver	800	729	1014
Stage 1	957	848	-
Stage 2	888	799	-
Platoon blocked, %			
Mov Cap-1 Maneuver	794	728	1014
Mov Cap-2 Maneuver	794	728	-
Stage 1	956	847	-
Stage 2	882	798	-

Approach	SB
HCM Control Delay, s	9.1
HCM LOS	A

Minor Lane/Major Mvmt

Intersection	
Int Delay, s/veh	2.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR
Vol, veh/h	46	44	0	0	212	28	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-
Peak Hour Factor	88	88	88	88	88	88	88	88	88
Heavy Vehicles, %	5	5	5	5	5	5	5	5	5
Mvmt Flow	52	50	0	0	241	32	0	0	0

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	273	0	0	50	0	0	447	428	50
Stage 1	-	-	-	-	-	-	155	155	-
Stage 2	-	-	-	-	-	-	292	273	-
Critical Hdwy	4.15	-	-	4.15	-	-	7.15	6.55	6.25
Critical Hdwy Stg 1	-	-	-	-	-	-	6.15	5.55	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.15	5.55	-
Follow-up Hdwy	2.245	-	-	2.245	-	-	3.545	4.045	3.345
Pot Cap-1 Maneuver	1273	-	-	1537	-	-	517	515	1010
Stage 1	-	-	-	-	-	-	840	764	-
Stage 2	-	-	-	-	-	-	710	678	-
Platoon blocked, %		-	-		-	-			
Mov Cap-1 Maneuver	1273	-	-	1537	-	-	455	493	1010
Mov Cap-2 Maneuver	-	-	-	-	-	-	455	493	-
Stage 1	-	-	-	-	-	-	805	732	-
Stage 2	-	-	-	-	-	-	645	678	-

Approach	EB	WB	NB
HCM Control Delay, s	4.1	0	0
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	1273	-	-	1537	-	-	774
HCM Lane V/C Ratio	-	0.041	-	-	-	-	-	0.091
HCM Control Delay (s)	0	7.9	0	-	0	-	-	10.1
HCM Lane LOS	A	A	A	-	A	-	-	B
HCM 95th %tile Q(veh)	-	0.1	-	-	0	-	-	0.3

Intersection			
Int Delay, s/veh			

Movement	SBL	SBT	SBR
Vol, veh/h	0	0	62
Conflicting Peds, #/hr	0	0	0
Sign Control	Stop	Stop	Stop
RT Channelized	-	-	None
Storage Length	-	-	-
Veh in Median Storage, #	-	0	-
Grade, %	-	0	-
Peak Hour Factor	88	88	88
Heavy Vehicles, %	5	5	5
Mvmt Flow	0	0	70

Major/Minor	Minor2		
Conflicting Flow All	412	412	257
Stage 1	257	257	-
Stage 2	155	155	-
Critical Hdwy	7.15	6.55	6.25
Critical Hdwy Stg 1	6.15	5.55	-
Critical Hdwy Stg 2	6.15	5.55	-
Follow-up Hdwy	3.545	4.045	3.345
Pot Cap-1 Maneuver	545	525	774
Stage 1	741	689	-
Stage 2	840	764	-
Platoon blocked, %			
Mov Cap-1 Maneuver	528	503	774
Mov Cap-2 Maneuver	528	503	-
Stage 1	710	689	-
Stage 2	805	732	-

Approach	SB
HCM Control Delay, s	10.1
HCM LOS	B

Minor Lane/Major Mvmt

Intersection	
Intersection Delay, s/veh	7.8
Intersection LOS	A

Approach	EB	NB	SB
Entry Lanes	1	1	1
Conflicting Circle Lanes	1	1	1
Adj Approach Flow, veh/h	184	162	506
Demand Flow Rate, veh/h	199	170	532
Vehicles Circulating, veh/h	244	177	15
Vehicles Exiting, veh/h	303	266	332
Follow-Up Headway, s	3.186	3.186	3.186
Ped Vol Crossing Leg, #/h	0	0	0
Ped Cap Adj	1.000	1.000	1.000
Approach Delay, s/veh	6.8	5.8	8.9
Approach LOS	A	A	A

Lane	Left	Left	Left
Designated Moves	LR	LT	TR
Assumed Moves	LR	LT	TR
RT Channelized			
Lane Util	1.000	1.000	1.000
Critical Headway, s	5.193	5.193	5.193
Entry Flow, veh/h	199	170	532
Cap Entry Lane, veh/h	885	947	1113
Entry HV Adj Factor	0.925	0.951	0.952
Flow Entry, veh/h	184	162	506
Cap Entry, veh/h	819	900	1060
V/C Ratio	0.225	0.180	0.478
Control Delay, s/veh	6.8	5.8	8.9
LOS	A	A	A
95th %tile Queue, veh	1	1	3

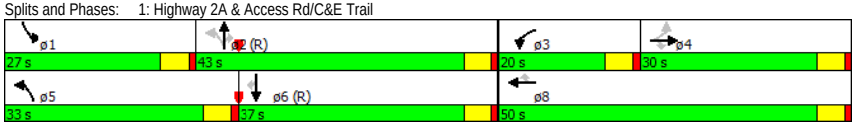
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	43	26	103	441	44	494	114	437	188	228	509	50
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	50.0		50.0	50.0		50.0
Storage Lanes	1		1	2		1	1		1	2		1
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	0.97	1.00	1.00	1.00	0.95	1.00	0.97	0.95	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1738	1830	1555	3219	1830	1484	1738	3380	1484	3219	3380	1555
Flt Permitted	0.724			0.950			0.396			0.950		
Satd. Flow (perm)	1325	1830	1555	3219	1830	1484	725	3380	1484	3219	3380	1555
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			155			519			214			155
Link Speed (k/h)		50			50			80			80	
Link Distance (m)		55.8			82.6			547.5			300.8	
Travel Time (s)		4.0			5.9			24.6			13.5	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles (%)	5%	5%	5%	10%	5%	10%	5%	8%	10%	10%	8%	5%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	49	30	117	501	50	561	130	497	214	259	578	57
Turn Type	Perm	NA	Perm	Prot	NA	Perm	pm+pt	NA	Perm	Prot	NA	Perm
Protected Phases		4		3	8		5	2		1	6	
Permitted Phases	4		4			8	2		2			6
Detector Phase	4	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	4.0	10.0	10.0	8.0	20.0	20.0	8.0	20.0	20.0
Minimum Split (s)	30.0	30.0	30.0	9.0	30.0	30.0	13.0	25.0	25.0	13.0	25.0	25.0
Total Split (s)	30.0	30.0	30.0	20.0	50.0	50.0	33.0	43.0	43.0	27.0	37.0	37.0
Total Split (%)	25.0%	25.0%	25.0%	16.7%	41.7%	41.7%	27.5%	35.8%	35.8%	22.5%	30.8%	30.8%
Yellow 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
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lag	Lag	Lag	Lead			Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes			Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Min	C-Min	None	C-Min	C-Min
Act Effct Green (s)	13.3	13.3	13.3	25.0	43.3	43.3	56.9	46.8	46.8	14.9	51.6	51.6
Actuated g/C Ratio	0.11	0.11	0.11	0.21	0.36	0.36	0.47	0.39	0.39	0.12	0.43	0.43
v/c Ratio	0.33	0.15	0.38	0.75	0.08	0.65	0.30	0.38	0.30	0.65	0.40	0.08
Control Delay	53.3	47.2	6.0	54.2	27.5	8.6	13.2	22.5	7.1	57.5	25.3	0.2
Queue Delay	0.0	0.0	0.0	19.2	0.0	1.4	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	53.3	47.2	6.0	73.4	27.5	10.0	13.2	22.5	7.1	57.5	25.3	0.2
LOS	D	D	A	E	C	A	B	C	A	E	C	A
Approach Delay		24.1			39.4			17.2			33.0	
Approach LOS		C			D			B			C	
Queue Length 50th (m)	11.2	6.7	0.0	52.6	7.3	3.8	19.1	39.9	6.1	30.3	47.0	0.0
Queue Length 95th (m)	20.1	13.7	6.4	#97.0	m12.9	38.4	16.1	27.3	12.1	41.3	69.2	0.0
Internal Link Dist (m)		31.8			58.6			523.5			276.8	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Bay Length (m)							50.0		50.0	50.0		50.0
Base Capacity (vph)	276	381	446	670	695	885	639	1318	709	590	1453	756
Starvation Cap Reductn	0	0	0	168	0	156	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.18	0.08	0.26	1.00	0.07	0.77	0.20	0.38	0.30	0.44	0.40	0.08

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Green
Natural Cycle: 80
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.75
Intersection Signal Delay: 30.4 Intersection LOS: C
Intersection Capacity Utilization 68.1% ICU Level of Service C
Analysis Period (min) 15
\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: Highway 2A & Access Rd/C&E Trail



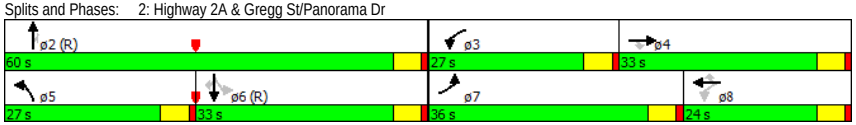
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	194	180	261	244	271	22	296	477	105	18	709	250
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	80.0		50.0	50.0		50.0
Storage Lanes	2		1	1		1	2		1	1		1
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95	1.00	0.97	0.95	1.00	1.00	0.95	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3372	3476	1555	1738	3476	1555	3372	3476	1555	1738	3476	1555
Flt Permitted	0.950			0.415			0.950			0.450		
Satd. Flow (perm)	3372	3476	1555	759	3476	1555	3372	3476	1555	823	3476	1555
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			297			155			119			199
Link Speed (k/h)		50			50			60			60	
Link Distance (m)		48.3			68.8			472.7			547.5	
Travel Time (s)		3.5			5.0			28.4			32.9	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Shared Lane Traffic (%)												
Lane Group Flow (vph)	220	205	297	277	308	25	336	542	119	20	806	284
Turn Type	Prot	NA	Perm	pm+pt	NA	Perm	Prot	NA	Perm	Perm	NA	Perm
Protected Phases	7	4		3	8		5	2			6	
Permitted Phases			4	8		8			2	6		6
Detector Phase	7	4	4	3	8	8	5	2	2	6	6	6
Switch Phase												
Minimum Initial (s)	8.0	10.0	10.0	8.0	10.0	10.0	8.0	20.0	20.0	20.0	20.0	20.0
Minimum Split (s)	13.0	31.0	31.0	13.0	15.0	15.0	13.0	31.0	31.0	31.0	31.0	31.0
Total Split (s)	36.0	33.0	33.0	27.0	24.0	24.0	27.0	60.0	60.0	33.0	33.0	33.0
Total Split (%)	30.0%	27.5%	27.5%	22.5%	20.0%	20.0%	22.5%	50.0%	50.0%	27.5%	27.5%	27.5%
Yellow 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
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead			Lag	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes			Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Min	C-Min	C-Min	C-Min	C-Min
Act Effct Green (s)	13.2	15.0	15.0	39.9	21.7	21.7	17.2	70.1	70.1	48.0	48.0	48.0
Actuated g/C Ratio	0.11	0.12	0.12	0.33	0.18	0.18	0.14	0.58	0.58	0.40	0.40	0.40
v/c Ratio	0.59	0.47	0.65	0.67	0.49	0.06	0.70	0.27	0.12	0.06	0.58	0.38
Control Delay	57.3	51.2	12.1	36.1	42.9	0.3	56.3	19.0	11.2	34.7	33.6	16.4
Queue Delay	0.0	0.0	0.0	43.2	29.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	57.3	51.2	12.1	79.2	72.0	0.3	56.3	19.0	11.2	34.7	33.6	16.4
LOS	E	D	B	E	E	A	E	B	B	C	C	B
Approach Delay		37.0			72.3			30.6			29.2	
Approach LOS		D			E			C			C	
Queue Length 50th (m)	25.8	24.3	0.0	47.6	35.2	0.0	43.8	38.2	7.3	3.0	63.1	20.4
Queue Length 95th (m)	36.3	31.4	20.2	55.5	37.2	0.0	56.9	0.0	28.6	m8.1	#122.9	m52.3
Internal Link Dist (m)		24.3			44.8			448.7			523.5	
Turn Bay Length (m)							80.0		50.0	50.0		50.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Base Capacity (vph)	871	811	590	431	653	418	618	2031	958	328	1389	741
Starvation Cap Reductn	0	0	0	168	347	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.25	0.25	0.50	1.05	1.01	0.06	0.54	0.27	0.12	0.06	0.58	0.38

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.70
Intersection Signal Delay: 38.9 Intersection LOS: D
Intersection Capacity Utilization 71.9% ICU Level of Service C
Analysis Period (min) 15
\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: Highway 2A & Gregg St/Panorama Dr



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	24	37	101	195	34	16	23	846	103	6	1226	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	0.0		0.0	0.0		50.0
Storage Lanes	1		0	1		0	1		1	0		1
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	0.95	0.95	1.00
Frt		0.890			0.953				0.850			0.850
Flt Protected	0.950			0.950			0.950					
Satd. Flow (prot)	1738	1628	0	1738	1744	0	1738	3380	1555	0	3476	1555
Flt Permitted	0.720			0.322			0.127				0.950	
Satd. Flow (perm)	1317	1628	0	589	1744	0	232	3380	1555	0	3302	1555
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		58			18				117			64
Link Speed (k/h)		50			50			60			60	
Link Distance (m)		54.4			44.4			100.1			472.7	
Travel Time (s)		3.9			3.2			6.0			28.4	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%	5%	8%	5%	5%	5%	5%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	27	157	0	222	57	0	26	961	117	0	1400	23
Turn Type	Perm	NA		pm+pt	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4		3	8			2			6	
Permitted Phases	4			8			2		2	6		6
Detector Phase	4	4		3	8		2	2	2	6	6	6
Switch Phase												
Minimum Initial (s)	10.0	10.0		8.0	10.0		20.0	20.0	20.0	20.0	20.0	20.0
Minimum Split (s)	31.0	31.0		13.0	31.0		25.0	25.0	25.0	25.0	25.0	25.0
Total Split (s)	31.0	31.0		13.0	44.0		76.0	76.0	76.0	76.0	76.0	76.0
Total Split (%)	25.8%	25.8%		10.8%	36.7%		63.3%	63.3%	63.3%	63.3%	63.3%	63.3%
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0		5.0	5.0
Lead/Lag	Lag	Lag		Lead								
Lead-Lag Optimize?	Yes	Yes		Yes								
Recall Mode	None	None		None	None		C-Min	C-Min	C-Min	C-Min	C-Min	C-Min
Act Effct Green (s)	14.7	14.7		34.2	34.2		75.8	75.8	75.8		75.8	75.8
Actuated g/C Ratio	0.12	0.12		0.28	0.28		0.63	0.63	0.63		0.63	0.63
v/c Ratio	0.17	0.63		0.72	0.11		0.18	0.45	0.11		0.67	0.02
Control Delay	46.7	41.6		50.3	21.9		11.7	12.7	1.2		12.3	0.1
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0		0.0	0.0
Total Delay	46.7	41.6		50.3	21.9		11.7	12.7	1.2		12.3	0.1
LOS	D	D		D	C		B	B	A		B	A
Approach Delay		42.3			44.5			11.5			12.1	
Approach LOS		D			D			B			B	
Queue Length 50th (m)	5.8	22.7		42.5	6.7		2.0	48.5	0.0		63.0	0.0
Queue Length 95th (m)	12.8	38.6		#73.3	15.4		m3.9	37.3	m1.0		55.7	m0.0
Internal Link Dist (m)		30.4			20.4			76.1			448.7	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Bay Length (m)												50.0
Base Capacity (vph)	285	398		307	582		147	2141	1027		2091	1008
Starvation Cap Reductn	0	0		0	0		0	0	0		0	0
Spillback Cap Reductn	0	0		0	0		0	0	0		0	0
Storage Cap Reductn	0	0		0	0		0	0	0		0	0
Reduced v/c Ratio	0.09	0.39		0.72	0.10		0.18	0.45	0.11		0.67	0.02

Intersection Summary		
Area Type:	Other	
Cycle Length: 120		
Actuated Cycle Length: 120		
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green		
Natural Cycle: 90		
Control Type: Actuated-Coordinated		
Maximum v/c Ratio: 0.72		
Intersection Signal Delay: 16.7		Intersection LOS: B
Intersection Capacity Utilization 71.6%		ICU Level of Service C
Analysis Period (min) 15		

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 3: Highway 2A & ParkSt/Park St

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	545	42	867	192	22	1573
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	0.0		80.0	50.0	
Storage Lanes	2	0		1	1	
Taper Length (m)	2.5				2.5	
Lane Util. Factor	0.97	0.95	0.95	1.00	1.00	0.95
Frt	0.989			0.850		
Flt Protected	0.956				0.950	
Satd. Flow (prot)	2936	0	3318	1361	1521	3476
Flt Permitted	0.956				0.248	
Satd. Flow (perm)	2936	0	3318	1361	397	3476
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)	6			218		
Link Speed (k/h)	50		60			60
Link Distance (m)	50.6		327.8			219.5
Travel Time (s)	3.6		19.7			13.2
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles (%)	20%	20%	10%	20%	20%	5%
Shared Lane Traffic (%)						
Lane Group Flow (vph)	667	0	985	218	25	1788
Turn Type	Prot		NA	Perm	Perm	NA
Protected Phases	8		2			6
Permitted Phases				2	6	
Detector Phase	8		2	2	6	6
Switch Phase						
Minimum Initial (s)	8.0		20.0	20.0	20.0	20.0
Minimum Split (s)	27.0		25.5	25.5	25.5	25.5
Total Split (s)	27.0		93.0	93.0	93.0	93.0
Total Split (%)	22.5%		77.5%	77.5%	77.5%	77.5%
Yellow Time (s)	4.0		4.0	4.0	4.0	4.0
All-Red Time (s)	1.0		1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0		5.0	5.0	5.0	5.0
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	None		C-Min	C-Min	C-Min	C-Min
Act Effct Green (s)	30.9		79.1	79.1	79.1	79.1
Actuated g/C Ratio	0.26		0.66	0.66	0.66	0.66
v/c Ratio	0.88		0.45	0.22	0.10	0.78
Control Delay	57.4		14.9	4.6	4.3	11.5
Queue Delay	0.0		0.0	0.0	0.0	0.0
Total Delay	57.4		14.9	4.6	4.3	11.5
LOS	E		B	A	A	B
Approach Delay	57.4		13.0			11.4
Approach LOS	E		B			B
Queue Length 50th (m)	78.0		61.6	0.0	1.2	103.1
Queue Length 95th (m)	#131.8		78.1	23.5	m1.6	54.9
Internal Link Dist (m)	26.6		303.8			195.5

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Turn Bay Length (m)				80.0	50.0	
Base Capacity (vph)	761		2433	1056	291	2549
Starvation Cap Reductn	0		0	0	0	0
Spillback Cap Reductn	0		0	0	0	0
Storage Cap Reductn	0		0	0	0	0
Reduced v/c Ratio	0.88		0.40	0.21	0.09	0.70

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Green
Natural Cycle: 75
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.88
Intersection Signal Delay: 20.3 Intersection LOS: C
Intersection Capacity Utilization 68.7% ICU Level of Service C
Analysis Period (min) 15
\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 5: Highway 2A & South St

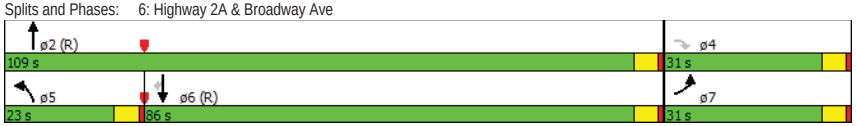
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	150	238	140	959	2085	258
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	0.0	50.0			80.0
Storage Lanes	2	1	2			1
Taper Length (m)	2.5		2.5			
Lane Util. Factor	0.97	1.00	0.97	0.91	0.95	1.00
Frt		0.850				0.850
Flt Protected	0.950		0.950			
Satd. Flow (prot)	3372	1555	3372	4995	3476	1555
Flt Permitted	0.950		0.950			
Satd. Flow (perm)	3372	1555	3372	4995	3476	1555
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		201				165
Link Speed (k/h)	50			60	60	
Link Distance (m)	79.1			148.6	327.8	
Travel Time (s)	5.7			8.9	19.7	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Shared Lane Traffic (%)						
Lane Group Flow (vph)	170	270	159	1090	2369	293
Turn Type	Prot	Perm	Prot	NA	NA	Perm
Protected Phases	7		5	2	6	
Permitted Phases		4				6
Detector Phase	7	4	5	2	6	6
Switch Phase						
Minimum Initial (s)	8.0	8.0	8.0	20.0	20.0	20.0
Minimum Split (s)	31.0	31.0	23.0	25.0	25.0	25.0
Total Split (s)	31.0	31.0	23.0	109.0	86.0	86.0
Total Split (%)	22.1%	22.1%	16.4%	77.9%	61.4%	61.4%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag			Lead		Lag	Lag
Lead-Lag Optimize?			Yes		Yes	Yes
Recall Mode	None	None	None	C-Min	C-Min	C-Min
Act Effct Green (s)	15.1	15.1	11.9	114.9	98.0	98.0
Actuated g/C Ratio	0.11	0.11	0.08	0.82	0.70	0.70
v/c Ratio	0.47	0.78	0.55	0.27	0.97	0.26
Control Delay	61.6	32.0	68.6	3.5	33.9	4.6
Queue Delay	0.0	0.4	0.0	0.0	10.0	0.0
Total Delay	61.6	32.4	68.6	3.5	43.9	4.6
LOS	E	C	E	A	D	A
Approach Delay	43.7			11.8	39.6	
Approach LOS	D			B	D	
Queue Length 50th (m)	23.6	18.5	22.1	17.8	276.5	9.8
Queue Length 95th (m)	31.1	43.2	32.2	36.6	#424.1	28.1
Internal Link Dist (m)	55.1			124.6	303.8	
Turn Bay Length (m)			50.0			80.0

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Base Capacity (vph)	626	452	433	4100	2433	1138
Starvation Cap Reductn	0	27	0	0	109	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.27	0.64	0.37	0.27	1.02	0.26

Intersection Summary

Area Type: Other
Cycle Length: 140
Actuated Cycle Length: 140
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 150
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.97
Intersection Signal Delay: 32.0 Intersection LOS: C
Intersection Capacity Utilization 80.7% ICU Level of Service D
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 6: Highway 2A & Broadway Ave



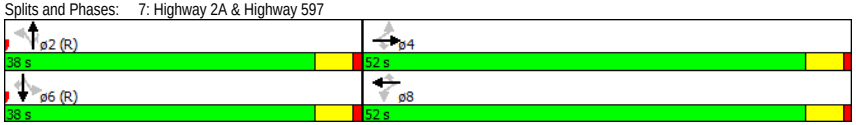
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	29	129	329	116	158	143	437	712	179	356	1830	85
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		50.0	0.0		50.0	50.0		50.0	50.0		50.0
Storage Lanes	0		1	0		1	1		1	1		1
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected		0.991			0.979		0.950			0.950		
Satd. Flow (prot)	0	1707	1512	0	1696	1555	1690	1779	1512	1738	1830	1555
Flt Permitted		0.899			0.731		0.078			0.174		
Satd. Flow (perm)	0	1548	1512	0	1266	1555	139	1779	1512	318	1830	1555
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			24			57			120			24
Link Speed (k/h)		50			50			60			60	
Link Distance (m)		67.4			78.0			157.9			368.2	
Travel Time (s)		4.9			5.6			9.5			22.1	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles (%)	5%	13%	8%	8%	13%	5%	8%	8%	8%	5%	5%	5%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	180	374	0	312	162	497	809	203	405	2080	97
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2		2	6		6
Detector Phase	4	4	4	8	8	8	2	2	2	6	6	6
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	20.0	20.0	20.0	20.0	20.0	20.0
Minimum Split (s)	24.0	24.0	24.0	24.0	24.0	24.0	26.0	26.0	26.0	26.0	26.0	26.0
Total Split (s)	52.0	52.0	52.0	52.0	52.0	52.0	38.0	38.0	38.0	38.0	38.0	38.0
Total Split (%)	57.8%	57.8%	57.8%	57.8%	57.8%	57.8%	42.2%	42.2%	42.2%	42.2%	42.2%	42.2%
Yellow 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
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	None	None	None	None	None	None	C-Max	C-Max	C-Max	C-Max	C-Max	C-Max
Act Effct Green (s)		28.6	28.6		28.6	28.6	51.4	51.4	51.4	51.4	51.4	51.4
Actuated g/C Ratio		0.32	0.32		0.32	0.32	0.57	0.57	0.57	0.57	0.57	0.57
v/c Ratio		0.37	0.75		0.78	0.30	6.29	0.80	0.22	2.24	1.99	0.11
Control Delay		24.0	34.7		40.3	14.2	2416.3	25.5	6.1	590.7	468.5	9.4
Queue Delay		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay		24.0	34.7		40.3	14.2	2416.3	25.5	6.1	590.7	468.5	9.4
LOS		C	C		D	B	F	C	A	F	F	A
Approach Delay		31.2			31.4			810.3			470.4	
Approach LOS		C			C			F			F	
Queue Length 50th (m)		23.8	54.0		48.5	13.2	~155.7	102.2	6.1	~84.2	~565.9	5.3
Queue Length 95th (m)		32.3	67.3		62.3	21.8	#216.1	#208.4	20.1	#149.3	#667.9	15.5
Internal Link Dist (m)		43.4			54.0			133.9			344.2	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Bay Length (m)			50.0			50.0	50.0		50.0	50.0		50.0
Base Capacity (vph)		808	801		661	839	79	1016	915	181	1045	899
Starvation Cap Reductn		0	0		0	0	0	0	0	0	0	0
Spillback Cap Reductn		0	0		0	0	0	0	0	0	0	0
Storage Cap Reductn		0	0		0	0	0	0	0	0	0	0
Reduced v/c Ratio		0.22	0.47		0.47	0.19	6.29	0.80	0.22	2.24	1.99	0.11

Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 75
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 6.29
Intersection Signal Delay: 482.4 Intersection LOS: F
Intersection Capacity Utilization 160.3% ICU Level of Service H
Analysis Period (min) 15
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 7: Highway 2A & Highway 597



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	26	228	5	16	244	416	5	5	58	687	5	133
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	50.0		0.0	0.0		0.0	50.0		0.0	50.0		0.0
Storage Lanes	1		0	0		1	1		0	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.97	1.00	1.00
Frt		0.997				0.850		0.862			0.856	
Flt Protected	0.950				0.997		0.950			0.950		
Satd. Flow (prot)	1738	1824	0	0	1824	1555	1738	1577	0	3372	1566	0
Flt Permitted	0.503				0.975		0.657			0.950		
Satd. Flow (perm)	920	1824	0	0	1784	1555	1202	1577	0	3372	1566	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		1				473		66			151	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		860.4			145.8			110.5			601.0	
Travel Time (s)		61.9			10.5			8.0			43.3	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Shared Lane Traffic (%)												
Lane Group Flow (vph)	30	265	0	0	295	473	6	72	0	781	157	0
Turn Type	Perm	NA		Perm	NA	Free	Perm	NA		Prot	NA	
Protected Phases		4			8			2		1	6	
Permitted Phases	4			8		Free	2					
Detector Phase	4	4		8	8		2	2		1	6	
Switch Phase												
Minimum Initial (s)	20.0	20.0		20.0	20.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	25.0	25.0		25.0	25.0		23.0	23.0		15.0	23.0	
Total Split (s)	27.0	27.0		27.0	27.0		23.0	23.0		30.0	53.0	
Total Split (%)	33.8%	33.8%		33.8%	33.8%		28.8%	28.8%		37.5%	66.3%	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.0	5.0			5.0		5.0	5.0		5.0	5.0	
Lead/Lag							Lead	Lead		Lag		
Lead-Lag Optimize?							Yes	Yes		Yes		
Recall Mode	C-Min	C-Min		C-Min	C-Min		None	None		Min	Min	
Act Effct Green (s)	33.5	33.5			33.5	80.0	11.6	11.6		22.9	36.5	
Actuated g/C Ratio	0.42	0.42			0.42	1.00	0.14	0.14		0.29	0.46	
v/c Ratio	0.08	0.35			0.40	0.30	0.03	0.25		0.81	0.20	
Control Delay	19.7	20.6			18.4	1.2	27.8	11.3		33.6	2.3	
Queue Delay	0.0	0.0			0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	19.7	20.6			18.4	1.2	27.8	11.3		33.6	2.3	
LOS	B	C			B	A	C	B		C	A	
Approach Delay		20.5			7.8			12.6			28.4	
Approach LOS		C			A			B			C	
Queue Length 50th (m)	2.8	28.1			33.9	0.0	0.8	0.8		55.2	0.4	
Queue Length 95th (m)	9.5	54.7			62.8	0.0	3.5	10.0		71.3	6.4	
Internal Link Dist (m)		836.4			121.8			86.5			577.0	
Turn Bay Length (m)	50.0						50.0			50.0		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Base Capacity (vph)	385	763			746	1555	270	405		1062	1000	
Starvation Cap Reductn	0	0			0	0	0	0		0	0	
Spillback Cap Reductn	0	0			0	0	0	0		0	0	
Storage Cap Reductn	0	0			0	0	0	0		0	0	
Reduced v/c Ratio	0.08	0.35			0.40	0.30	0.02	0.18		0.74	0.16	

Intersection Summary			
Area Type:	Other		
Cycle Length: 80			
Actuated Cycle Length: 80			
Offset: 3 (4%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green			
Natural Cycle: 70			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.81			
Intersection Signal Delay: 19.1		Intersection LOS: B	
Intersection Capacity Utilization 60.6%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 9: Womacks Road & Broadway Ave

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	429	20	446	42	19	750
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	0.95	0.95	0.95	0.95
Frt	0.994		0.987			
Flt Protected	0.954					0.999
Satd. Flow (prot)	1735	0	3431	0	0	3473
Flt Permitted	0.954					0.933
Satd. Flow (perm)	1735	0	3431	0	0	3243
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)	2		19			
Link Speed (k/h)	50		50			50
Link Distance (m)	315.7		332.5			232.9
Travel Time (s)	22.7		23.9			16.8
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Shared Lane Traffic (%)						
Lane Group Flow (vph)	511	0	555	0	0	874
Turn Type	Prot		NA		Perm	NA
Protected Phases	8		2			6
Permitted Phases					6	
Detector Phase	8		2		6	6
Switch Phase						
Minimum Initial (s)	8.0		20.0		20.0	20.0
Minimum Split (s)	24.0		25.0		25.0	25.0
Total Split (s)	33.0		67.0		67.0	67.0
Total Split (%)	33.0%		67.0%		67.0%	67.0%
Yellow Time (s)	4.0		4.0		4.0	4.0
All-Red Time (s)	1.0		1.0		1.0	1.0
Lost Time Adjust (s)	0.0		0.0			0.0
Total Lost Time (s)	5.0		5.0			5.0
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	None		Min		Min	Min
Act Effct Green (s)	28.1		24.2			24.2
Actuated g/C Ratio	0.45		0.39			0.39
v/c Ratio	0.65		0.41			0.70
Control Delay	19.4		14.2			19.1
Queue Delay	0.0		0.0			0.0
Total Delay	19.4		14.2			19.1
LOS	B		B			B
Approach Delay	19.4		14.2			19.1
Approach LOS	B		B			B
Queue Length 50th (m)	41.7		22.5			42.5
Queue Length 95th (m)	84.3		32.2			57.4
Internal Link Dist (m)	291.7		308.5			208.9
Turn Bay Length (m)						
Base Capacity (vph)	783		3330			3147
Starvation Cap Reductn	0		0			0
Spillback Cap Reductn	0		0			0

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Storage Cap Reductn	0		0			0
Reduced v/c Ratio	0.65		0.17			0.28

Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 62.3			
Natural Cycle: 50			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.70			
Intersection Signal Delay: 17.8		Intersection LOS: B	
Intersection Capacity Utilization 67.7%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 16: Vista Trail & Womacks Road

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	44	90	474	446	646	480
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	0.95	0.95	0.95	0.95
Frt		0.850			0.936	
Flt Protected	0.950			0.975		
Satd. Flow (prot)	1460	1306	0	3389	3163	0
Flt Permitted	0.950			0.541		
Satd. Flow (perm)	1460	1306	0	1881	3163	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		102			354	
Link Speed (k/h)	50			50	50	
Link Distance (m)	151.9			480.9	332.5	
Travel Time (s)	10.9			34.6	23.9	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles (%)	25%	25%	5%	5%	8%	8%
Shared Lane Traffic (%)						
Lane Group Flow (vph)	50	102	0	1046	1279	0
Turn Type	Prot	Perm	pm+pt	NA	NA	
Protected Phases	4		5	2	6	
Permitted Phases		4	2			
Detector Phase	4	4	5	2	6	
Switch Phase						
Minimum Initial (s)	8.0	8.0	4.0	20.0	20.0	
Minimum Split (s)	24.0	24.0	9.0	25.0	25.0	
Total Split (s)	24.0	24.0	9.0	51.0	42.0	
Total Split (%)	32.0%	32.0%	12.0%	68.0%	56.0%	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.0	5.0		5.0	5.0	
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?			Yes		Yes	
Recall Mode	None	None	None	Min	Min	
Act Effct Green (s)	10.2	10.2		41.1	41.1	
Actuated g/C Ratio	0.18	0.18		0.73	0.73	
v/c Ratio	0.19	0.32		2.19dl	0.53	
Control Delay	24.2	8.8		13.7	4.8	
Queue Delay	0.0	0.0		0.0	0.0	
Total Delay	24.2	8.8		13.7	4.8	
LOS	C	A		B	A	
Approach Delay	13.9			13.7	4.8	
Approach LOS	B			B	A	
Queue Length 50th (m)	4.4	0.0		31.5	17.5	
Queue Length 95th (m)	13.2	10.1		#105.5	50.2	
Internal Link Dist (m)	127.9			456.9	308.5	
Turn Bay Length (m)						
Base Capacity (vph)	512	524		1542	2413	
Starvation Cap Reductn	0	0		0	0	

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Spillback Cap Reductn	0	0		0	0	
Storage Cap Reductn	0	0		0	0	
Reduced v/c Ratio	0.10	0.19		0.68	0.53	

Intersection Summary			
Area Type:	Other		
Cycle Length: 75			
Actuated Cycle Length: 56.6			
Natural Cycle: 60			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.77			
Intersection Signal Delay: 9.1		Intersection LOS: A	
Intersection Capacity Utilization 78.7%		ICU Level of Service D	
Analysis Period (min) 15			

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
dl Defacto Left Lane. Recode with 1 though lane as a left lane.

Splits and Phases: 17: Vista Trail & Ducan Ave

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	1	3	6	195	16	43	46	851	116	18	677	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		100.0	0.0		50.0	0.0		0.0
Storage Lanes	1		0	1		0	0		1	0		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95	0.95
Frt		0.895			0.890				0.850		0.999	
Flt Protected	0.950			0.950				0.997			0.999	
Satd. Flow (prot)	1547	1457	0	1738	1628	0	0	3466	1555	0	3469	0
Flt Permitted	0.713			0.751				0.864			0.915	
Satd. Flow (perm)	1161	1457	0	1374	1628	0	0	3004	1555	0	3178	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		7			49				132		1	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		276.5			746.2			141.8			480.9	
Travel Time (s)		19.9			53.7			10.2			34.6	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles (%)	18%	18%	18%	5%	5%	5%	5%	5%	5%	5%	5%	5%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	1	10	0	222	67	0	0	1019	132	0	792	0
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		
Detector Phase	4	4		8	8		2	2	2	6	6	
Switch Phase												
Minimum Initial (s)	8.0	8.0		8.0	8.0		10.0	10.0	10.0	10.0	10.0	
Minimum Split (s)	27.0	27.0		27.0	27.0		24.0	24.0	24.0	24.0	24.0	
Total Split (s)	37.0	37.0		37.0	37.0		63.0	63.0	63.0	63.0	63.0	
Total Split (%)	37.0%	37.0%		37.0%	37.0%		63.0%	63.0%	63.0%	63.0%	63.0%	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0	0.0		0.0	
Total Lost Time (s)	5.0	5.0		5.0	5.0			5.0	5.0		5.0	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	None	None		None	None		C-Min	C-Min	C-Min	C-Min	C-Min	
Act Effct Green (s)	21.4	21.4		21.4	21.4			68.6	68.6		68.6	
Actuated g/C Ratio	0.21	0.21		0.21	0.21			0.69	0.69		0.69	
v/c Ratio	0.00	0.03		0.76	0.17			0.49	0.12		0.36	
Control Delay	26.0	18.1		52.3	12.8			19.6	7.3		7.9	
Queue Delay	0.0	0.0		0.0	0.0			0.0	0.0		0.0	
Total Delay	26.0	18.1		52.3	12.8			19.6	7.3		7.9	
LOS	C	B		D	B			B	A		A	
Approach Delay		18.8			43.1			18.2			7.9	
Approach LOS		B			D			B			A	
Queue Length 50th (m)	0.2	0.5		40.6	2.8			85.2	9.3		29.8	
Queue Length 95th (m)	1.4	4.0		57.9	11.6			114.4	m15.6		49.8	
Internal Link Dist (m)		252.5			722.2			117.8			456.9	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Bay Length (m)									50.0			
Base Capacity (vph)	371	471		439	554			2060	1107		2180	
Starvation Cap Reductn	0	0		0	0			0	0		0	
Spillback Cap Reductn	0	0		0	0			0	0		0	
Storage Cap Reductn	0	0		0	0			0	0		0	
Reduced v/c Ratio	0.00	0.02		0.51	0.12			0.49	0.12		0.36	

Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 55
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.76
Intersection Signal Delay: 17.8 Intersection LOS: B
Intersection Capacity Utilization 74.2% ICU Level of Service D
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 18: South St & Vista Trail

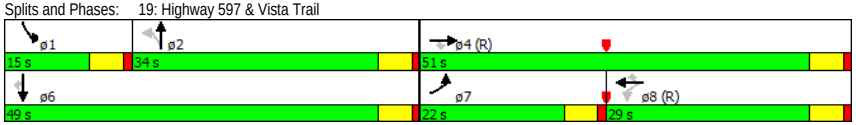
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	503	461	11	7	401	516	5	1	6	294	9	731
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	50.0		50.0	50.0		50.0	0.0		0.0	50.0		0.0
Storage Lanes	2		1	1		1	0		0	2		1
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	0.97	1.00	1.00
Frt			0.850			0.850		0.932				
Flt Protected	0.950			0.950				0.979		0.950		
Satd. Flow (prot)	3278	3230	1555	1738	3174	1512	0	1669	0	3278	1830	1779
Flt Permitted	0.950			0.458				0.900		0.950		
Satd. Flow (perm)	3278	3230	1555	838	3174	1512	0	1535	0	3278	1830	1779
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			76			586		7				503
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		267.0			499.4			80.3			111.2	
Travel Time (s)		19.2			36.0			5.8			8.0	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles (%)	8%	13%	5%	5%	15%	8%	5%	5%	5%	8%	5%	8%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	572	524	12	8	456	586	0	14	0	334	10	831
Turn Type	Prot	NA	Perm	Perm	NA	Perm	Perm	NA		Prot	NA	Perm
Protected Phases	7	4			8			2		1	6	
Permitted Phases			4	8		8	2					6
Detector Phase	7	4	4	8	8	8	2	2		1	6	6
Switch Phase												
Minimum Initial (s)	8.0	20.0	20.0	20.0	20.0	20.0	10.0	10.0		8.0	8.0	8.0
Minimum Split (s)	13.0	28.0	28.0	28.0	28.0	28.0	34.0	34.0		13.0	34.0	34.0
Total Split (s)	22.0	51.0	51.0	29.0	29.0	29.0	34.0	34.0		15.0	49.0	49.0
Total Split (%)	22.0%	51.0%	51.0%	29.0%	29.0%	29.0%	34.0%	34.0%		15.0%	49.0%	49.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0		1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0		0.0		0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0		5.0		5.0	5.0	5.0
Lead/Lag	Lead			Lag	Lag	Lag	Lag	Lag		Lead		
Lead-Lag Optimize?	Yes			Yes	Yes	Yes	Yes	Yes		Yes		
Recall Mode	None	C-Min	C-Min	C-Min	C-Min	C-Min	None	None		None	None	None
Act Effct Green (s)	22.2	58.1	58.1	30.9	30.9	30.9		17.0		18.9	31.9	31.9
Actuated g/C Ratio	0.22	0.58	0.58	0.31	0.31	0.31		0.17		0.19	0.32	0.32
v/c Ratio	0.79	0.28	0.01	0.03	0.46	0.67		0.05		0.54	0.02	0.91
Control Delay	46.8	13.0	0.0	29.7	31.9	7.2		20.8		42.7	14.4	23.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0		0.0	0.0	0.3
Total Delay	46.8	13.0	0.0	29.7	31.9	7.2		20.8		42.7	14.4	23.6
LOS	D	B	A	C	C	A		C		D	B	C
Approach Delay		30.3			18.1			20.8			29.0	
Approach LOS		C			B			C			C	
Queue Length 50th (m)	52.1	26.4	0.0	1.2	40.1	0.0		1.3		25.1	1.2	78.4
Queue Length 95th (m)	#90.4	44.2	0.0	4.9	56.0	25.8		5.4		#62.0	m2.3	42.0
Internal Link Dist (m)		243.0			475.4			56.3			87.2	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Bay Length (m)	50.0		50.0	50.0		50.0				50.0		
Base Capacity (vph)	726	1876	935	259	981	872		450		620	805	1064
Starvation Cap Reductn	0	0	0	0	0	0		0		0	0	30
Spillback Cap Reductn	0	0	0	0	0	0		0		0	0	0
Storage Cap Reductn	0	0	0	0	0	0		0		0	0	0
Reduced v/c Ratio	0.79	0.28	0.01	0.03	0.46	0.67		0.03		0.54	0.01	0.80

Intersection Summary		
Area Type:	Other	
Cycle Length: 100		
Actuated Cycle Length: 100		
Offset: 57 (57%), Referenced to phase 4:EBT and 8:WBTL, Start of Green		
Natural Cycle: 90		
Control Type: Actuated-Coordinated		
Maximum v/c Ratio: 0.91		
Intersection Signal Delay: 26.0		Intersection LOS: C
Intersection Capacity Utilization 82.8%		ICU Level of Service E
Analysis Period (min) 15		

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 19: Highway 597 & Vista Trail

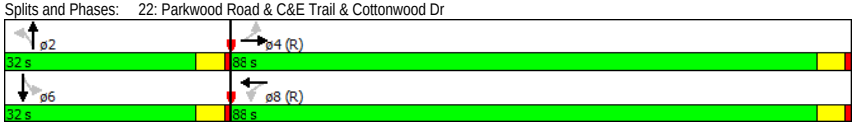


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	128	254	40	29	737	37	50	23	27	18	16	133
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.980			0.994			0.918			0.866	
Flt Protected	0.950				0.998		0.950			0.950		
Satd. Flow (prot)	1659	3252	0	0	1765	0	1706	1648	0	1706	1555	0
Flt Permitted	0.313				0.978		0.476			0.720		
Satd. Flow (perm)	547	3252	0	0	1729	0	855	1648	0	1293	1555	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		33			5			31			151	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		82.6			312.1			555.4			387.8	
Travel Time (s)		5.9			22.5			40.0			27.9	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles (%)	10%	10%	10%	8%	8%	8%	7%	7%	7%	7%	7%	7%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	145	334	0	0	913	0	57	57	0	20	169	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		20.0	20.0		20.0	20.0	
Minimum Split (s)	24.0	24.0		24.0	24.0		25.0	25.0		25.0	25.0	
Total Split (s)	88.0	88.0		88.0	88.0		32.0	32.0		32.0	32.0	
Total Split (%)	73.3%	73.3%		73.3%	73.3%		26.7%	26.7%		26.7%	26.7%	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.0	5.0			5.0		5.0	5.0		5.0	5.0	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	C-Min	C-Min		C-Min	C-Min		Min	Min		Min	Min	
Act Effct Green (s)	90.0	90.0			90.0		20.0	20.0		20.0	20.0	
Actuated g/C Ratio	0.75	0.75			0.75		0.17	0.17		0.17	0.17	
v/c Ratio	0.35	0.14			0.70		0.40	0.19		0.09	0.44	
Control Delay	5.4	0.3			11.6		48.5	21.7		43.8	13.1	
Queue Delay	0.6	0.3			0.3		0.2	0.0		0.0	0.1	
Total Delay	6.0	0.6			11.9		48.7	21.7		43.8	13.3	
LOS	A	A			B		D	C		D	B	
Approach Delay		2.2			11.9			35.2			16.5	
Approach LOS		A			B			D			B	
Queue Length 50th (m)	9.4	0.3			97.5		13.5	4.7		4.0	3.6	
Queue Length 95th (m)	17.0	0.2			132.6		26.4	19.4		11.0	21.6	
Internal Link Dist (m)		58.6			288.1			531.4			363.8	
Turn Bay Length (m)												
Base Capacity (vph)	410	2447			1298		192	394		290	466	
Starvation Cap Reductn	80	1535			0		0	0		0	0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Spillback Cap Reductn	0	0			82		12	0		0	31	
Storage Cap Reductn	0	0			0		0	0		0	0	
Reduced v/c Ratio	0.44	0.37			0.75		0.32	0.14		0.07	0.39	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 76 (63%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green			
Natural Cycle: 70			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.70			
Intersection Signal Delay: 11.3		Intersection LOS: B	
Intersection Capacity Utilization 101.0%		ICU Level of Service G	
Analysis Period (min) 15			

Splits and Phases: 22: Parkwood Road & C&E Trail & Cottonwood Dr

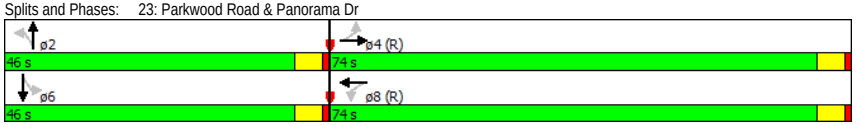


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	211	81	21	10	342	71	13	33	7	19	18	206
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.990			0.977			0.974			0.862	
Flt Protected		0.967			0.999		0.950			0.950		
Satd. Flow (prot)	0	3328	0	0	1786	0	1706	1749	0	1706	1548	0
Flt Permitted		0.603			0.990		0.336			0.727		
Satd. Flow (perm)	0	2075	0	0	1770	0	603	1749	0	1305	1548	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		10			14			8			234	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		68.8			305.1			487.4			555.4	
Travel Time (s)		5.0			22.0			35.1			40.0	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%	7%	7%	7%	7%	7%	7%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	356	0	0	481	0	15	46	0	22	254	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	20.0	20.0		20.0	20.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	25.0	25.0		25.0	25.0		23.0	23.0		23.0	23.0	
Total Split (s)	74.0	74.0		74.0	74.0		46.0	46.0		46.0	46.0	
Total Split (%)	61.7%	61.7%		61.7%	61.7%		38.3%	38.3%		38.3%	38.3%	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		5.0			5.0		5.0	5.0		5.0	5.0	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	C-Min	C-Min		C-Min	C-Min		None	None		None	None	
Act Effct Green (s)		98.1			98.1		11.9	11.9		11.9	11.9	
Actuated g/C Ratio		0.82			0.82		0.10	0.10		0.10	0.10	
v/c Ratio		0.21			0.33		0.25	0.26		0.17	0.70	
Control Delay		2.5			3.6		61.1	47.0		48.4	17.8	
Queue Delay		0.5			0.0		0.0	0.0		0.0	0.1	
Total Delay		3.0			3.6		61.1	47.0		48.4	17.9	
LOS		A			A		E	D		D	B	
Approach Delay		3.0			3.6			50.5			20.3	
Approach LOS		A			A			D			C	
Queue Length 50th (m)		5.0			18.8		3.7	9.3		4.8	7.3	
Queue Length 95th (m)		7.6			40.8		m9.9	m19.6		m11.5	27.6	
Internal Link Dist (m)		44.8			281.1			463.4			531.4	
Turn Bay Length (m)												
Base Capacity (vph)		1698			1449		206	602		445	682	
Starvation Cap Reductn		911			0		0	0		0	0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Spillback Cap Reductn		0			22		13	0		0	41	
Storage Cap Reductn		0			0		0	0		0	0	
Reduced v/c Ratio		0.45			0.34		0.08	0.08		0.05	0.40	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 1 (1%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green			
Natural Cycle: 50			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.70			
Intersection Signal Delay: 9.8		Intersection LOS: A	
Intersection Capacity Utilization 65.7%		ICU Level of Service C	
Analysis Period (min) 15			
m Volume for 95th percentile queue is metered by upstream signal.			

Splits and Phases: 23: Parkwood Road & Panorama Dr

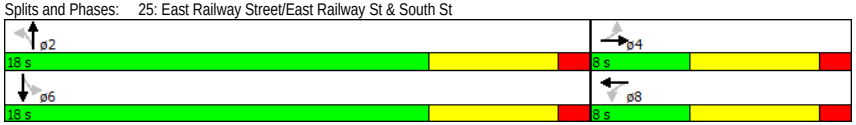


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	169	49	9	0	53	3	11	30	0	1	31	245
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	0.95	0.95	0.95
Frt		0.977			0.994						0.867	
Flt Protected	0.950							0.987				
Satd. Flow (prot)	1690	1745	0	0	1819	0	0	3431	0	0	2892	0
Flt Permitted	0.755							0.874			0.955	
Satd. Flow (perm)	1343	1745	0	0	1819	0	0	3038	0	0	2761	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		10			3						278	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		746.2			468.9			641.2			463.5	
Travel Time (s)		53.7			33.8			46.2			33.4	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles (%)	8%	8%	5%	5%	5%	5%	5%	5%	5%	10%	5%	10%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	192	66	0	0	63	0	0	46	0	0	314	0
Turn Type	Perm	NA			NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	23.0	23.0		23.0	23.0		23.0	23.0		23.0	23.0	
Total Split (s)	8.0	8.0		8.0	8.0		18.0	18.0		18.0	18.0	
Total Split (%)	30.8%	30.8%		30.8%	30.8%		69.2%	69.2%		69.2%	69.2%	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0			0.0			0.0			0.0	
Total Lost Time (s)	5.0	5.0			5.0			5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	None	None		None	None		Min	Min		Min	Min	
Act Effct Green (s)	5.3	5.3			5.3			14.4			14.4	
Actuated g/C Ratio	0.17	0.17			0.17			0.47			0.47	
v/c Ratio	0.83	0.21			0.20			0.03			0.22	
Control Delay	44.0	9.7			10.3			6.2			2.2	
Queue Delay	0.0	0.0			0.0			0.0			0.0	
Total Delay	44.0	9.7			10.3			6.2			2.2	
LOS	D	A			B			A			A	
Approach Delay		35.2			10.3			6.2			2.2	
Approach LOS		D			B			A			A	
Queue Length 50th (m)	~7.4	1.7			1.8			0.3			0.2	
Queue Length 95th (m)	21.8	7.7			7.9			3.2			6.0	
Internal Link Dist (m)		722.2			444.9			617.2			439.5	
Turn Bay Length (m)												
Base Capacity (vph)	231	308			315			1667			1641	
Starvation Cap Reductn	0	0			0			0			0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Spillback Cap Reductn	0	0			0			0			0	
Storage Cap Reductn	0	0			0			0			0	
Reduced v/c Ratio	0.83	0.21			0.20			0.03			0.19	

Intersection Summary			
Area Type:	Other		
Cycle Length: 26			
Actuated Cycle Length: 30.6			
Natural Cycle: 50			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.83			
Intersection Signal Delay: 15.7		Intersection LOS: B	
Intersection Capacity Utilization 34.0%		ICU Level of Service A	
Analysis Period (min) 15			
~ Volume exceeds capacity, queue is theoretically infinite.			
Queue shown is maximum after two cycles.			

Splits and Phases: 25: East Railway Street/East Railway St & South St

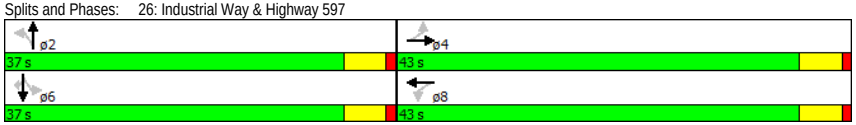


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	151	601	92	1	255	0	9	1	1	1	0	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	50.0		0.0	0.0		0.0	50.0		0.0	0.0		0.0
Storage Lanes	1		0	1		0	1		0	0		1
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.980						0.925				0.850
Flt Protected	0.950			0.950			0.950				0.950	
Satd. Flow (prot)	1690	1695	0	1547	1700	0	1547	1506	0	0	1690	1512
Flt Permitted	0.582			0.319								
Satd. Flow (perm)	1035	1695	0	519	1700	0	1628	1506	0	0	1779	1512
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		13						1				27
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		450.4			2117.8			178.3			143.7	
Travel Time (s)		32.4			152.5			12.8			10.3	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles (%)	8%	10%	18%	18%	13%	8%	18%	18%	18%	8%	8%	8%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	172	788	0	1	290	0	10	2	0	0	1	15
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		6
Detector Phase	4	4		8	8		2	2		6	6	6
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
Minimum Split (s)	23.0	23.0		23.0	23.0		23.0	23.0		23.0	23.0	23.0
Total Split (s)	43.0	43.0		43.0	43.0		37.0	37.0		37.0	37.0	37.0
Total Split (%)	53.8%	53.8%		53.8%	53.8%		46.3%	46.3%		46.3%	46.3%	46.3%
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0			0.0	0.0
Total Lost Time (s)	5.0	5.0		5.0	5.0		5.0	5.0			5.0	5.0
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	Min	Min		Min	Min		None	None		None	None	None
Act Effct Green (s)	46.4	46.4		46.4	46.4		7.8	7.8			7.7	7.7
Actuated g/C Ratio	0.87	0.87		0.87	0.87		0.15	0.15			0.14	0.14
v/c Ratio	0.19	0.53		0.00	0.20		0.04	0.01			0.00	0.06
Control Delay	3.7	5.9		4.0	3.2		22.9	20.0			23.0	7.0
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0			0.0	0.0
Total Delay	3.7	5.9		4.0	3.2		22.9	20.0			23.0	7.0
LOS	A	A		A	A		C	B			C	A
Approach Delay		5.5			3.2			22.4			8.0	
Approach LOS		A			A			C			A	
Queue Length 50th (m)	0.0	0.0		0.0	0.0		0.7	0.1			0.1	0.0
Queue Length 95th (m)	17.8	103.2		0.5	26.1		4.8	1.8			1.3	2.8
Internal Link Dist (m)		426.4			2093.8			154.3			119.7	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Bay Length (m)	50.0						50.0					
Base Capacity (vph)	887	1454		445	1457		1033	956			1129	969
Starvation Cap Reductn	0	0		0	0		0	0			0	0
Spillback Cap Reductn	0	0		0	0		0	0			0	0
Storage Cap Reductn	0	0		0	0		0	0			0	0
Reduced v/c Ratio	0.19	0.54		0.00	0.20		0.01	0.00			0.00	0.02

Intersection Summary			
Area Type:	Other		
Cycle Length: 80			
Actuated Cycle Length: 53.3			
Natural Cycle: 60			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.53			
Intersection Signal Delay: 5.2		Intersection LOS: A	
Intersection Capacity Utilization 60.2%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 26: Industrial Way & Highway 597

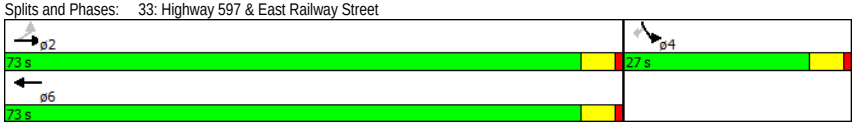


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	97	665	669	11	22	217
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	100.0			100.0	0.0	0.0
Storage Lanes	1			0	1	1
Taper Length (m)	2.5				2.5	
Lane Util. Factor	1.00	0.95	0.95	0.95	1.00	1.00
Frt			0.998			0.850
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1738	3476	3469	0	1738	1555
Flt Permitted	0.344				0.950	
Satd. Flow (perm)	629	3476	3469	0	1738	1555
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)			3			247
Link Speed (k/h)		50	50		50	
Link Distance (m)		499.4	774.4		641.2	
Travel Time (s)		36.0	55.8		46.2	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Shared Lane Traffic (%)						
Lane Group Flow (vph)	110	756	772	0	25	247
Turn Type	Perm	NA	NA		Prot	Perm
Protected Phases		2	6		4	
Permitted Phases	2					4
Detector Phase	2	2	6		4	4
Switch Phase						
Minimum Initial (s)	20.0	20.0	20.0		8.0	8.0
Minimum Split (s)	25.0	25.0	25.0		27.0	27.0
Total Split (s)	73.0	73.0	73.0		27.0	27.0
Total Split (%)	73.0%	73.0%	73.0%		27.0%	27.0%
Yellow Time (s)	4.0	4.0	4.0		4.0	4.0
All-Red Time (s)	1.0	1.0	1.0		1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0		5.0	5.0
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	Min	Min	Min		None	None
Act Effct Green (s)	21.6	21.6	21.6		10.3	10.3
Actuated g/C Ratio	0.51	0.51	0.51		0.24	0.24
v/c Ratio	0.34	0.42	0.43		0.06	0.44
Control Delay	11.3	8.0	8.1		12.4	5.0
Queue Delay	0.0	0.0	0.0		0.0	0.0
Total Delay	11.3	8.0	8.1		12.4	5.0
LOS	B	A	A		B	A
Approach Delay		8.5	8.1		5.7	
Approach LOS		A	A		A	
Queue Length 50th (m)	3.4	12.8	13.2		1.3	0.0
Queue Length 95th (m)	18.1	39.2	40.1		5.4	10.7
Internal Link Dist (m)		475.4	750.4		617.2	
Turn Bay Length (m)	100.0					

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Base Capacity (vph)	629	3476	3469		934	950
Starvation Cap Reductn	0	0	0		0	0
Spillback Cap Reductn	0	0	0		0	0
Storage Cap Reductn	0	0	0		0	0
Reduced v/c Ratio	0.17	0.22	0.22		0.03	0.26

Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 42.2			
Natural Cycle: 55			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.44			
Intersection Signal Delay: 7.9		Intersection LOS: A	
Intersection Capacity Utilization 54.7%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 33: Highway 597 & East Railway Street



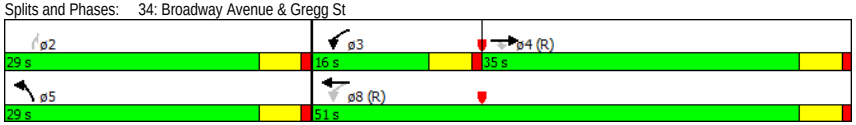
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	714	259	185	621	56	146
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)		50.0	50.0		50.0	0.0
Storage Lanes		1	1		0	1
Taper Length (m)			2.5		2.5	
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Frt		0.850				0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	3476	1555	1738	3476	1738	1555
Flt Permitted			0.269		0.950	
Satd. Flow (perm)	3476	1555	492	3476	1738	1555
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		294				166
Link Speed (k/h)	50			50	50	
Link Distance (m)	145.8			292.0	243.5	
Travel Time (s)	10.5			21.0	17.5	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Shared Lane Traffic (%)						
Lane Group Flow (vph)	811	294	210	706	64	166
Turn Type	NA	Perm	pm+pt	NA	Prot	Perm
Protected Phases	4		3	8	5	
Permitted Phases		4	8			2
Detector Phase	4	4	3	8	5	2
Switch Phase						
Minimum Initial (s)	20.0	20.0	8.0	20.0	8.0	8.0
Minimum Split (s)	25.0	25.0	13.0	25.0	29.0	13.0
Total Split (s)	35.0	35.0	16.0	51.0	29.0	29.0
Total Split (%)	43.8%	43.8%	20.0%	63.8%	36.3%	36.3%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lag	Lag	Lead			
Lead-Lag Optimize?	Yes	Yes	Yes			
Recall Mode	C-Min	C-Min	None	C-Min	None	None
Act Effct Green (s)	44.6	44.6	58.4	58.4	11.6	11.6
Actuated g/C Ratio	0.56	0.56	0.73	0.73	0.14	0.14
v/c Ratio	0.42	0.29	0.42	0.28	0.25	0.45
Control Delay	6.6	2.8	7.2	4.9	30.6	8.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	6.6	2.8	7.2	4.9	30.6	8.6
LOS	A	A	A	A	C	A
Approach Delay	5.6			5.4	14.7	
Approach LOS	A			A	B	
Queue Length 50th (m)	4.3	0.0	6.2	12.1	9.2	0.0
Queue Length 95th (m)	68.3	m29.6	23.7	36.6	15.3	11.9
Internal Link Dist (m)	121.8			268.0	219.5	
Turn Bay Length (m)		50.0	50.0		50.0	

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Base Capacity (vph)	1939	997	530	2538	521	582
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.42	0.29	0.40	0.28	0.12	0.29

Intersection Summary

Area Type: Other
Cycle Length: 80
Actuated Cycle Length: 80
Offset: 0 (0%), Referenced to phase 4:EBT and 8:WBTL, Start of Green
Natural Cycle: 70
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.45
Intersection Signal Delay: 6.4 Intersection LOS: A
Intersection Capacity Utilization 49.2% ICU Level of Service A
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 34: Broadway Avenue & Gregg St



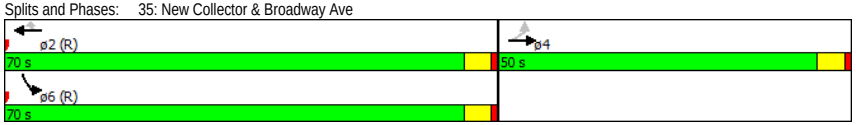
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	1	192	294	104	196	21
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt				0.850	0.987	
Flt Protected	0.950				0.957	
Satd. Flow (prot)	1738	1830	1830	1555	1728	0
Flt Permitted	0.559				0.957	
Satd. Flow (perm)	1023	1830	1830	1555	1728	0
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)				118	7	
Link Speed (k/h)		50	50		50	
Link Distance (m)		169.9	79.1		260.2	
Travel Time (s)		12.2	5.7		18.7	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1	218	334	118	247	0
Turn Type	Perm	NA	NA	Perm	Prot	
Protected Phases		4	2!		6!	
Permitted Phases	4			2		
Detector Phase	4	4	2	2	6	
Switch Phase						
Minimum Initial (s)	10.0	10.0	10.0	10.0	8.0	
Minimum Split (s)	23.0	23.0	23.0	23.0	30.0	
Total Split (s)	50.0	50.0	70.0	70.0	70.0	
Total Split (%)	41.7%	41.7%	58.3%	58.3%	58.3%	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	None	None	C-Min	C-Min	C-Min	
Act Effct Green (s)	19.9	19.9	90.1	90.1	90.1	
Actuated g/C Ratio	0.17	0.17	0.75	0.75	0.75	
v/c Ratio	0.01	0.72	0.24	0.10	0.19	
Control Delay	38.0	60.4	3.6	0.3	5.2	
Queue Delay	0.0	0.0	0.7	0.4	0.0	
Total Delay	38.0	60.4	4.3	0.7	5.2	
LOS	D	E	A	A	A	
Approach Delay		60.3	3.4		5.2	
Approach LOS		E	A		A	
Queue Length 50th (m)	0.2	49.2	11.8	0.0	14.1	
Queue Length 95th (m)	1.7	68.4	18.5	0.8	27.2	
Internal Link Dist (m)		145.9	55.1		236.2	
Turn Bay Length (m)						
Base Capacity (vph)	383	686	1374	1197	1299	
Starvation Cap Reductn	0	0	713	758	0	
Spillback Cap Reductn	0	0	0	0	0	

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Storage Cap Reductn	0	0	0	0	0	
Reduced v/c Ratio	0.00	0.32	0.51	0.27	0.19	

Intersection Summary		
Area Type:	Other	
Cycle Length: 120		
Actuated Cycle Length: 120		
Offset: 0 (0%), Referenced to phase 2:WBT and 6:SBL, Start of Green		
Natural Cycle: 55		
Control Type: Actuated-Coordinated		
Maximum v/c Ratio: 0.72		
Intersection Signal Delay: 17.4	Intersection LOS: B	
Intersection Capacity Utilization 35.9%	ICU Level of Service A	
Analysis Period (min) 15		

! Phase conflict between lane groups.

Splits and Phases: 35: New Collector & Broadway Ave



Intersection	
Int Delay, s/veh	1.7

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Vol, veh/h	33	49	58	1973	1420	39
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	-	500	-	-	-
Veh in Median Storage, #	1	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	8	8	5	5	8	8
Mvmt Flow	36	53	63	2145	1543	42

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	2763	793	1586	0	-	0
Stage 1	1565	-	-	-	-	-
Stage 2	1198	-	-	-	-	-
Critical Hdwy	6.96	7.06	4.2	-	-	-
Critical Hdwy Stg 1	5.96	-	-	-	-	-
Critical Hdwy Stg 2	5.96	-	-	-	-	-
Follow-up Hdwy	3.58	3.38	2.25	-	-	-
Pot Cap-1 Maneuver	~ 14	319	396	-	-	-
Stage 1	149	-	-	-	-	-
Stage 2	237	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	~ 12	319	396	-	-	-
Mov Cap-2 Maneuver	83	-	-	-	-	-
Stage 1	149	-	-	-	-	-
Stage 2	199	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	59.9	0.5	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	396	-	149	-	-
HCM Lane V/C Ratio	0.159	-	0.598	-	-
HCM Control Delay (s)	15.8	-	59.9	-	-
HCM Lane LOS	C	-	F	-	-
HCM 95th %tile Q(veh)	0.6	-	3.1	-	-

Notes

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

Intersection	
Int Delay, s/veh	1.5

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Vol, veh/h	7	33	79	35	24	200
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	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	5	5	5	5	5	5
Mvmt Flow	8	36	86	38	26	217

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	375	105	0	0	124	0
Stage 1	105	-	-	-	-	-
Stage 2	270	-	-	-	-	-
Critical Hdwy	6.45	6.25	-	-	4.15	-
Critical Hdwy Stg 1	5.45	-	-	-	-	-
Critical Hdwy Stg 2	5.45	-	-	-	-	-
Follow-up Hdwy	3.545	3.345	-	-	2.245	-
Pot Cap-1 Maneuver	620	941	-	-	1444	-
Stage 1	912	-	-	-	-	-
Stage 2	768	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	608	941	-	-	1444	-
Mov Cap-2 Maneuver	608	-	-	-	-	-
Stage 1	912	-	-	-	-	-
Stage 2	753	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.4	0	0.8
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	859	1444	-
HCM Lane V/C Ratio	-	-	0.051	0.018	-
HCM Control Delay (s)	-	-	9.4	7.5	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.2	0.1	-

Intersection	
Int Delay, s/veh	1.7

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Vol, veh/h	6	60	203	69	69	327
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	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	5	5	5	5	5	5
Mvmt Flow	7	65	221	75	75	355

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	763	258	0	0	296	0
Stage 1	258	-	-	-	-	-
Stage 2	505	-	-	-	-	-
Critical Hdwy	6.45	6.25	-	-	4.15	-
Critical Hdwy Stg 1	5.45	-	-	-	-	-
Critical Hdwy Stg 2	5.45	-	-	-	-	-
Follow-up Hdwy	3.545	3.345	-	-	2.245	-
Pot Cap-1 Maneuver	368	773	-	-	1248	-
Stage 1	778	-	-	-	-	-
Stage 2	600	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	340	773	-	-	1248	-
Mov Cap-2 Maneuver	340	-	-	-	-	-
Stage 1	778	-	-	-	-	-
Stage 2	555	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.8	0	1.4
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	693	1248	-
HCM Lane V/C Ratio	-	-	0.104	0.06	-
HCM Control Delay (s)	-	-	10.8	8.1	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.3	0.2	-

Intersection	
Int Delay, s/veh	4.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR
Vol, veh/h	55	40	1	18	27	32	1	249	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	8	8	8	8	8	8	5	5	5
Mvmt Flow	60	43	1	20	29	35	1	271	1

Major/Minor	Minor2			Minor1			Major1		
Conflicting Flow All	598	567	226	589	581	271	240	0	0
Stage 1	293	293	-	273	273	-	-	-	-
Stage 2	305	274	-	316	308	-	-	-	-
Critical Hdwy	7.18	6.58	6.28	7.18	6.58	6.28	4.15	-	-
Critical Hdwy Stg 1	6.18	5.58	-	6.18	5.58	-	-	-	-
Critical Hdwy Stg 2	6.18	5.58	-	6.18	5.58	-	-	-	-
Follow-up Hdwy	3.572	4.072	3.372	3.572	4.072	3.372	2.245	-	-
Pot Cap-1 Maneuver	405	425	799	411	417	753	1309	-	-
Stage 1	702	660	-	720	673	-	-	-	-
Stage 2	692	672	-	683	650	-	-	-	-
Platoon blocked, %								-	-
Mov Cap-1 Maneuver	356	411	799	368	404	753	1309	-	-
Mov Cap-2 Maneuver	356	411	-	368	404	-	-	-	-
Stage 1	701	640	-	719	672	-	-	-	-
Stage 2	631	671	-	616	630	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	18.1	13.9	0
HCM LOS	C	B	

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1309	-	-	379	487	1274	-	-
HCM Lane V/C Ratio	0.001	-	-	0.275	0.172	0.026	-	-
HCM Control Delay (s)	7.8	0	-	18.1	13.9	7.9	0	-
HCM Lane LOS	A	A	-	C	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	1.1	0.6	0.1	-	-

Intersection	
Int Delay, s/veh	

Movement	SBL	SBT	SBR
Vol, veh/h	31	195	26
Conflicting Peds, #/hr	0	0	0
Sign Control	Free	Free	Free
RT Channelized	-	-	None
Storage Length	-	-	-
Veh in Median Storage, #	-	0	-
Grade, %	-	0	-
Peak Hour Factor	92	92	92
Heavy Vehicles, %	5	5	5
Mvmt Flow	34	212	28

Major/Minor	Major2		
Conflicting Flow All	272	0	0
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	4.15	-	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	2.245	-	-
Pot Cap-1 Maneuver	1274	-	-
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	1274	-	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	SB
HCM Control Delay, s	1
HCM LOS	

Minor Lane/Major Mvmt

Intersection	
Int Delay, s/veh	3.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR
Vol, veh/h	36	0	76	0	0	1	101	232	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	5	5	5	5	5	5	5	5	5
Mvmt Flow	39	0	83	0	0	1	110	252	1

Major/Minor	Minor2			Minor1			Major1		
Conflicting Flow All	751	751	273	791	762	253	286	0	0
Stage 1	278	278	-	472	472	-	-	-	-
Stage 2	473	473	-	319	290	-	-	-	-
Critical Hdwy	7.15	6.55	6.25	7.15	6.55	6.25	4.15	-	-
Critical Hdwy Stg 1	6.15	5.55	-	6.15	5.55	-	-	-	-
Critical Hdwy Stg 2	6.15	5.55	-	6.15	5.55	-	-	-	-
Follow-up Hdwy	3.545	4.045	3.345	3.545	4.045	3.345	2.245	-	-
Pot Cap-1 Maneuver	323	336	759	304	331	778	1259	-	-
Stage 1	722	675	-	567	554	-	-	-	-
Stage 2	566	553	-	686	667	-	-	-	-
Platoon blocked, %								-	-
Mov Cap-1 Maneuver	297	301	759	249	297	778	1259	-	-
Mov Cap-2 Maneuver	297	301	-	249	297	-	-	-	-
Stage 1	648	674	-	509	497	-	-	-	-
Stage 2	508	497	-	610	666	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	14.4	9.6	2.5
HCM LOS	B	A	

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1259	-	-	506	778	1295	-	-
HCM Lane V/C Ratio	0.087	-	-	0.241	0.001	0.002	-	-
HCM Control Delay (s)	8.1	0	-	14.4	9.6	7.8	0	-
HCM Lane LOS	A	A	-	B	A	A	A	-
HCM 95th %tile Q(veh)	0.3	-	-	0.9	0	0	-	-

Intersection	
Int Delay, s/veh	

Movement	SBL	SBT	SBR
Vol, veh/h	2	240	23
Conflicting Peds, #/hr	0	0	0
Sign Control	Free	Free	Free
RT Channelized	-	-	None
Storage Length	-	-	-
Veh in Median Storage, #	-	0	-
Grade, %	-	0	-
Peak Hour Factor	92	92	92
Heavy Vehicles, %	5	5	5
Mvmt Flow	2	261	25

Major/Minor	Major2		
Conflicting Flow All	253	0	0
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	4.15	-	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	2.245	-	-
Pot Cap-1 Maneuver	1295	-	-
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	1295	-	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	SB
HCM Control Delay, s	0.1
HCM LOS	

Minor Lane/Major Mvmt

Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR
Vol, veh/h	1	289	6	18	449	0	4	6	8
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None
Storage Length	-	-	1000	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	5	5	5	5	5	5	5	5	5
Mvmt Flow	1	314	7	20	488	0	4	7	9

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	488	0	0	314	0	0	599	843	314
Stage 1	-	-	-	-	-	-	316	316	-
Stage 2	-	-	-	-	-	-	283	527	-
Critical Hdwy	4.2	-	-	4.15	-	-	7.375	6.575	6.275
Critical Hdwy Stg 1	-	-	-	-	-	-	6.175	5.575	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.575	5.575	-
Follow-up Hdwy	2.25	-	-	2.245	-	-	3.5475	4.0475	3.3475
Pot Cap-1 Maneuver	1051	-	-	1229	-	-	394	295	717
Stage 1	-	-	-	-	-	-	687	648	-
Stage 2	-	-	-	-	-	-	694	521	-
Platoon blocked, %		-	-		-	-			
Mov Cap-1 Maneuver	1051	-	-	1229	-	-	387	288	717
Mov Cap-2 Maneuver	-	-	-	-	-	-	488	388	-
Stage 1	-	-	-	-	-	-	686	647	-
Stage 2	-	-	-	-	-	-	679	510	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.4	12.2
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	517	1051	-	-	1229	-	-	-
HCM Lane V/C Ratio	0.038	0.001	-	-	0.016	-	-	-
HCM Control Delay (s)	12.2	8.4	0	-	8	0.1	-	0
HCM Lane LOS	B	A	A	-	A	A	-	A
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	-

Intersection	
Int Delay, s/veh	

Movement	SBL	SBT	SBR
Vol, veh/h	0	0	0
Conflicting Peds, #/hr	0	0	0
Sign Control	Stop	Stop	Stop
RT Channelized	-	-	None
Storage Length	-	-	-
Veh in Median Storage, #	-	1	-
Grade, %	-	0	-
Peak Hour Factor	92	92	92
Heavy Vehicles, %	5	5	5
Mvmt Flow	0	0	0

Major/Minor	Minor2		
Conflicting Flow All	851	843	244
Stage 1	527	527	-
Stage 2	324	316	-
Critical Hdwy	7.375	6.575	6.975
Critical Hdwy Stg 1	6.575	5.575	-
Critical Hdwy Stg 2	6.175	5.575	-
Follow-up Hdwy	3.5475	4.0475	3.3475
Pot Cap-1 Maneuver	262	295	749
Stage 1	497	521	-
Stage 2	680	648	-
Platoon blocked, %			
Mov Cap-1 Maneuver	251	288	749
Mov Cap-2 Maneuver	367	385	-
Stage 1	497	510	-
Stage 2	664	647	-

Approach	SB
HCM Control Delay, s	0
HCM LOS	A

Minor Lane/Major Mvmt

Intersection	
Int Delay, s/veh	1.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR
Vol, veh/h	1	106	1	5	76	10	3	1	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	5	5	5	5	5	5	5	5	5
Mvmt Flow	1	115	1	5	83	11	3	1	5

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	93	0	0	116	0	0	223	222	116
Stage 1	-	-	-	-	-	-	118	118	-
Stage 2	-	-	-	-	-	-	105	104	-
Critical Hdwy	4.15	-	-	4.15	-	-	7.15	6.55	6.25
Critical Hdwy Stg 1	-	-	-	-	-	-	6.15	5.55	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.15	5.55	-
Follow-up Hdwy	2.245	-	-	2.245	-	-	3.545	4.045	3.345
Pot Cap-1 Maneuver	1483	-	-	1454	-	-	726	671	928
Stage 1	-	-	-	-	-	-	879	792	-
Stage 2	-	-	-	-	-	-	893	803	-
Platoon blocked, %		-	-		-	-			
Mov Cap-1 Maneuver	1483	-	-	1454	-	-	714	668	928
Mov Cap-2 Maneuver	-	-	-	-	-	-	714	668	-
Stage 1	-	-	-	-	-	-	878	791	-
Stage 2	-	-	-	-	-	-	878	800	-

Approach	EB	WB	NB
HCM Control Delay, s	0.1	0.4	9.5
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	812	1483	-	-	1454	-	-	802
HCM Lane V/C Ratio	0.012	0.001	-	-	0.004	-	-	0.028
HCM Control Delay (s)	9.5	7.4	0	-	7.5	0	-	9.6
HCM Lane LOS	A	A	A	-	A	A	-	A
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	0.1

Intersection	
Int Delay, s/veh	

Movement	SBL	SBT	SBR
Vol, veh/h	10	2	9
Conflicting Peds, #/hr	0	0	0
Sign Control	Stop	Stop	Stop
RT Channelized	-	-	None
Storage Length	-	-	-
Veh in Median Storage, #	-	0	-
Grade, %	-	0	-
Peak Hour Factor	92	92	92
Heavy Vehicles, %	5	5	5
Mvmt Flow	11	2	10

Major/Minor	Minor2		
Conflicting Flow All	220	217	88
Stage 1	99	99	-
Stage 2	121	118	-
Critical Hdwy	7.15	6.55	6.25
Critical Hdwy Stg 1	6.15	5.55	-
Critical Hdwy Stg 2	6.15	5.55	-
Follow-up Hdwy	3.545	4.045	3.345
Pot Cap-1 Maneuver	730	676	962
Stage 1	900	807	-
Stage 2	876	792	-
Platoon blocked, %			
Mov Cap-1 Maneuver	722	673	962
Mov Cap-2 Maneuver	722	673	-
Stage 1	899	804	-
Stage 2	869	791	-

Approach	SB
HCM Control Delay, s	9.6
HCM LOS	A

Minor Lane/Major Mvmt

Intersection	
Int Delay, s/veh	3.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR
Vol, veh/h	101	269	0	0	120	9	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	5	5	5	5	5	5	5	5	5
Mvmt Flow	110	292	0	0	130	10	0	0	0

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	140	0	0	292	0	0	678	652	292
Stage 1	-	-	-	-	-	-	512	512	-
Stage 2	-	-	-	-	-	-	166	140	-
Critical Hdwy	4.15	-	-	4.15	-	-	7.15	6.55	6.25
Critical Hdwy Stg 1	-	-	-	-	-	-	6.15	5.55	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.15	5.55	-
Follow-up Hdwy	2.245	-	-	2.245	-	-	3.545	4.045	3.345
Pot Cap-1 Maneuver	1425	-	-	1253	-	-	362	383	740
Stage 1	-	-	-	-	-	-	539	532	-
Stage 2	-	-	-	-	-	-	829	775	-
Platoon blocked, %		-	-		-	-			
Mov Cap-1 Maneuver	1425	-	-	1253	-	-	314	348	740
Mov Cap-2 Maneuver	-	-	-	-	-	-	314	348	-
Stage 1	-	-	-	-	-	-	489	483	-
Stage 2	-	-	-	-	-	-	773	775	-

Approach	EB	WB	NB
HCM Control Delay, s	2.1	0	0
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	1425	-	-	1253	-	-	577
HCM Lane V/C Ratio	-	0.077	-	-	-	-	-	0.166
HCM Control Delay (s)	0	7.7	0	-	0	-	-	12.5
HCM Lane LOS	A	A	A	-	A	-	-	B
HCM 95th %tile Q(veh)	-	0.2	-	-	0	-	-	0.6

Intersection			
Int Delay, s/veh			

Movement	SBL	SBT	SBR
Vol, veh/h	32	0	56
Conflicting Peds, #/hr	0	0	0
Sign Control	Stop	Stop	Stop
RT Channelized	-	-	None
Storage Length	-	-	-
Veh in Median Storage, #	-	0	-
Grade, %	-	0	-
Peak Hour Factor	92	92	92
Heavy Vehicles, %	5	5	5
Mvmt Flow	35	0	61

Major/Minor	Minor2		
Conflicting Flow All	647	647	135
Stage 1	135	135	-
Stage 2	512	512	-
Critical Hdwy	7.15	6.55	6.25
Critical Hdwy Stg 1	6.15	5.55	-
Critical Hdwy Stg 2	6.15	5.55	-
Follow-up Hdwy	3.545	4.045	3.345
Pot Cap-1 Maneuver	380	386	906
Stage 1	861	779	-
Stage 2	539	532	-
Platoon blocked, %			
Mov Cap-1 Maneuver	353	350	906
Mov Cap-2 Maneuver	353	350	-
Stage 1	782	779	-
Stage 2	489	483	-

Approach	SB
HCM Control Delay, s	12.5
HCM LOS	B

Minor Lane/Major Mvmt

Intersection	
Intersection Delay, s/veh	15.7
Intersection LOS	C

Approach	EB	NB	SB
Entry Lanes	1	1	1
Conflicting Circle Lanes	1	1	1
Adj Approach Flow, veh/h	557	290	677
Demand Flow Rate, veh/h	602	305	711
Vehicles Circulating, veh/h	328	565	17
Vehicles Exiting, veh/h	400	365	853
Follow-Up Headway, s	3.186	3.186	3.186
Ped Vol Crossing Leg, #/h	0	0	0
Ped Cap Adj	1.000	1.000	1.000
Approach Delay, s/veh	20.8	13.5	12.4
Approach LOS	C	B	B

Lane	Left	Left	Left
Designated Moves	LR	LT	TR
Assumed Moves	LR	LT	TR
RT Channelized			
Lane Util	1.000	1.000	1.000
Critical Headway, s	5.193	5.193	5.193
Entry Flow, veh/h	602	305	711
Cap Entry Lane, veh/h	814	642	1111
Entry HV Adj Factor	0.925	0.952	0.953
Flow Entry, veh/h	557	290	677
Cap Entry, veh/h	753	611	1058
V/C Ratio	0.740	0.475	0.640
Control Delay, s/veh	20.8	13.5	12.4
LOS	C	B	B
95th %tile Queue, veh	7	3	5

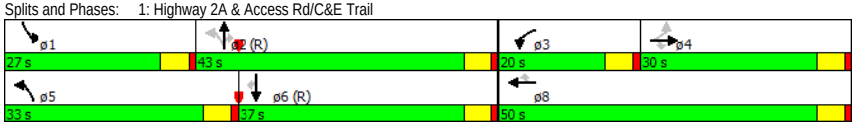
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	37	144	414	318	105	404	426	866	435	678	646	74
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	50.0		50.0	50.0		50.0
Storage Lanes	1		1	2		1	1		1	2		1
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	0.97	1.00	1.00	1.00	0.95	1.00	0.97	0.95	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1738	1830	1555	3219	1830	1484	1738	3380	1484	3219	3380	1555
Flt Permitted	0.684			0.950			0.219			0.950		
Satd. Flow (perm)	1251	1830	1555	3219	1830	1484	401	3380	1484	3219	3380	1555
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			378			439			318			155
Link Speed (k/h)		50			50			80			80	
Link Distance (m)		55.8			82.6			547.5			300.8	
Travel Time (s)		4.0			5.9			24.6			13.5	
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
Heavy Vehicles (%)	5%	5%	5%	10%	5%	10%	5%	8%	10%	10%	8%	5%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	40	157	450	346	114	439	463	941	473	737	702	80
Turn Type	Perm	NA	Perm	Prot	NA	Perm	pm+pt	NA	Perm	Prot	NA	Perm
Protected Phases		4		3	8		5	2		1	6	
Permitted Phases	4		4			8	2		2			6
Detector Phase	4	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	4.0	10.0	10.0	8.0	20.0	20.0	8.0	20.0	20.0
Minimum Split (s)	30.0	30.0	30.0	9.0	30.0	30.0	13.0	25.0	25.0	13.0	25.0	25.0
Total Split (s)	30.0	30.0	30.0	20.0	50.0	50.0	33.0	43.0	43.0	27.0	37.0	37.0
Total Split (%)	25.0%	25.0%	25.0%	16.7%	41.7%	41.7%	27.5%	35.8%	35.8%	22.5%	30.8%	30.8%
Yellow 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
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lag	Lag	Lag	Lead			Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes			Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Min	C-Min	None	C-Min	C-Min
Act Effct Green (s)	17.4	17.4	17.4	14.8	37.3	37.3	67.0	37.2	37.2	30.5	37.5	37.5
Actuated g/C Ratio	0.14	0.14	0.14	0.12	0.31	0.31	0.56	0.31	0.31	0.25	0.31	0.31
v/c Ratio	0.22	0.59	0.82	0.87	0.20	0.58	0.83	0.90	0.70	0.90	0.66	0.14
Control Delay	45.7	56.1	21.9	69.6	29.7	7.1	42.2	46.0	14.9	59.4	40.9	0.5
Queue Delay	0.0	0.0	0.0	0.0	0.7	0.8	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	45.7	56.1	21.9	69.6	30.3	7.9	42.2	46.0	14.9	59.4	40.9	0.5
LOS	D	E	C	E	C	A	D	D	B	E	D	A
Approach Delay		31.7			34.5			37.2			47.8	
Approach LOS		C			C			D			D	
Queue Length 50th (m)	8.4	35.0	15.4	38.7	17.0	2.2	85.7	112.3	31.8	87.7	78.8	0.0
Queue Length 95th (m)	17.6	52.7	51.9	#65.6	m35.8	38.5	m#119.6	m119.4	m38.8	#148.7	103.0	0.0
Internal Link Dist (m)		31.8			58.6			523.5			276.8	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Bay Length (m)							50.0		50.0	50.0		50.0
Base Capacity (vph)	260	381	623	402	686	830	566	1070	687	819	1056	592
Starvation Cap Reductn	0	0	0	0	353	165	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.15	0.41	0.72	0.86	0.34	0.66	0.82	0.88	0.69	0.90	0.66	0.14

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Green
Natural Cycle: 110
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.90
Intersection Signal Delay: 39.2 Intersection LOS: D
Intersection Capacity Utilization 77.4% ICU Level of Service D
Analysis Period (min) 15
\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: Highway 2A & Access Rd/C&E Trail



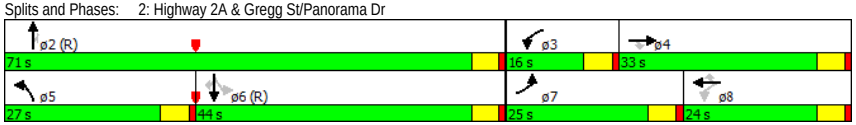
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	486	394	390	159	326	33	481	1132	224	55	911	493
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	80.0		50.0	50.0		50.0
Storage Lanes	2		1	1		1	2		1	1		1
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95	1.00	0.97	0.95	1.00	1.00	0.95	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3372	3476	1555	1738	3476	1555	3372	3476	1555	1738	3476	1555
Flt Permitted	0.950			0.503			0.950			0.228		
Satd. Flow (perm)	3372	3476	1555	920	3476	1555	3372	3476	1555	417	3476	1555
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			389			155			190			320
Link Speed (k/h)		50			50			60			60	
Link Distance (m)		48.3			68.8			472.7			547.5	
Travel Time (s)		3.5			5.0			28.4			32.9	
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)	528	428	424	173	354	36	523	1230	243	60	990	536
Turn Type	Prot	NA	Perm	pm+pt	NA	Perm	Prot	NA	Perm	Perm	NA	Perm
Protected Phases	7	4		3	8		5	2			6	
Permitted Phases			4	8		8			2	6		6
Detector Phase	7	4	4	3	8	8	5	2	2	6	6	6
Switch Phase												
Minimum Initial (s)	8.0	10.0	10.0	8.0	10.0	10.0	8.0	20.0	20.0	20.0	20.0	20.0
Minimum Split (s)	13.0	31.0	31.0	13.0	15.0	15.0	13.0	31.0	31.0	31.0	31.0	31.0
Total Split (s)	25.0	33.0	33.0	16.0	24.0	24.0	27.0	71.0	71.0	44.0	44.0	44.0
Total Split (%)	20.8%	27.5%	27.5%	13.3%	20.0%	20.0%	22.5%	59.2%	59.2%	36.7%	36.7%	36.7%
Yellow 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
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead			Lag	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes			Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Min	C-Min	C-Min	C-Min	C-Min
Act Effct Green (s)	20.1	26.2	26.2	27.5	16.8	16.8	21.6	68.1	68.1	41.5	41.5	41.5
Actuated g/C Ratio	0.17	0.22	0.22	0.23	0.14	0.14	0.18	0.57	0.57	0.35	0.35	0.35
v/c Ratio	0.94	0.56	0.66	0.61	0.73	0.10	0.86	0.62	0.25	0.42	0.82	0.72
Control Delay	74.6	44.8	11.1	35.2	54.4	0.6	57.5	24.3	9.3	54.5	51.4	29.8
Queue Delay	0.0	0.2	0.0	0.2	16.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	74.6	44.9	11.1	35.4	71.2	0.6	57.5	24.3	9.3	54.5	51.4	29.8
LOS	E	D	B	D	E	A	E	C	A	D	D	C
Approach Delay		45.9			55.7			31.2			44.3	
Approach LOS		D			E			C			D	
Queue Length 50th (m)	64.0	47.5	6.6	28.8	43.1	0.0	68.0	102.8	11.1	11.8	107.7	61.1
Queue Length 95th (m)	#96.2	62.8	37.4	38.1	59.2	0.3	m#87.0	157.1	m39.5	m18.8	#139.6	m95.9
Internal Link Dist (m)		24.3			44.8			448.7			523.5	
Turn Bay Length (m)							80.0		50.0	50.0		50.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Base Capacity (vph)	564	811	661	287	550	376	627	1973	964	144	1201	746
Starvation Cap Reductn	0	0	0	6	183	0	0	0	0	0	0	0
Spillback Cap Reductn	0	47	0	0	0	0	0	0	2	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.94	0.56	0.64	0.62	0.96	0.10	0.83	0.62	0.25	0.42	0.82	0.72

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.94
Intersection Signal Delay: 41.1 Intersection LOS: D
Intersection Capacity Utilization 87.5% ICU Level of Service E
Analysis Period (min) 15
\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: Highway 2A & Gregg St/Panorama Dr



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	71	89	36	105	30	5	58	1715	216	11	1366	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	0.0		0.0	0.0		50.0
Storage Lanes	1		0	1		0	1		1	0		1
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	0.95	0.95	1.00
Frt		0.957			0.980				0.850			0.850
Flt Protected	0.950			0.950			0.950					
Satd. Flow (prot)	1738	1751	0	1738	1793	0	1738	3380	1555	0	3476	1555
Flt Permitted	0.732			0.389			0.120				0.925	
Satd. Flow (perm)	1339	1751	0	712	1793	0	220	3380	1555	0	3216	1555
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		15			5				194			64
Link Speed (k/h)		50			50			60			60	
Link Distance (m)		54.4			44.4			100.1			472.7	
Travel Time (s)		3.9			3.2			6.0			28.4	
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
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%	5%	8%	5%	5%	5%	5%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	77	136	0	114	38	0	63	1864	235	0	1497	33
Turn Type	Perm	NA		pm+pt	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4		3	8			2			6	
Permitted Phases	4			8			2		2	6		6
Detector Phase	4	4		3	8		2	2	2	6	6	6
Switch Phase												
Minimum Initial (s)	10.0	10.0		8.0	10.0		20.0	20.0	20.0	20.0	20.0	20.0
Minimum Split (s)	31.0	31.0		13.0	31.0		25.0	25.0	25.0	25.0	25.0	25.0
Total Split (s)	31.0	31.0		13.0	44.0		76.0	76.0	76.0	76.0	76.0	76.0
Total Split (%)	25.8%	25.8%		10.8%	36.7%		63.3%	63.3%	63.3%	63.3%	63.3%	63.3%
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0		5.0	5.0
Lead/Lag	Lag	Lag		Lead								
Lead-Lag Optimize?	Yes	Yes		Yes								
Recall Mode	None	None		None	None		C-Min	C-Min	C-Min	C-Min	C-Min	C-Min
Act Effct Green (s)	15.4	15.4		28.8	28.8		81.2	81.2	81.2		81.2	81.2
Actuated g/C Ratio	0.13	0.13		0.24	0.24		0.68	0.68	0.68		0.68	0.68
v/c Ratio	0.45	0.57		0.47	0.09		0.43	0.82	0.21		0.69	0.03
Control Delay	54.9	51.9		42.3	29.9		18.4	18.0	4.6		9.8	0.1
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0		0.0	0.0
Total Delay	54.9	51.9		42.3	29.9		18.4	18.0	4.6		9.8	0.1
LOS	D	D		D	C		B	B	A		A	A
Approach Delay		53.0			39.2			16.6			9.6	
Approach LOS		D			D			B			A	
Queue Length 50th (m)	17.3	27.6		22.5	6.2		6.9	107.0	6.2		43.4	0.0
Queue Length 95th (m)	29.0	42.6		33.6	13.3		m7.9	m164.0	m11.5		63.7	m0.0
Internal Link Dist (m)		30.4			20.4			76.1			448.7	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Bay Length (m)												50.0
Base Capacity (vph)	290	391		242	586		148	2285	1114		2174	1072
Starvation Cap Reductn	0	0		0	0		0	0	0		0	0
Spillback Cap Reductn	0	0		0	0		0	0	0		0	0
Storage Cap Reductn	0	0		0	0		0	0	0		0	0
Reduced v/c Ratio	0.27	0.35		0.47	0.06		0.43	0.82	0.21		0.69	0.03

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 100			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.82			
Intersection Signal Delay: 16.7		Intersection LOS: B	
Intersection Capacity Utilization 84.9%		ICU Level of Service E	
Analysis Period (min) 15			

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 3: Highway 2A & ParkSt/Park St

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	396	17	2144	662	42	1440
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	0.0		80.0	50.0	
Storage Lanes	2	0		0	1	
Taper Length (m)	2.5				2.5	
Lane Util. Factor	0.97	0.95	0.95	1.00	1.00	0.95
Frt	0.994			0.850		
Flt Protected	0.954				0.950	
Satd. Flow (prot)	2945	0	3318	1361	1521	3476
Flt Permitted	0.954				0.045	
Satd. Flow (perm)	2945	0	3318	1361	72	3476
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)	3			720		
Link Speed (k/h)	50		60			60
Link Distance (m)	50.6		327.8			219.5
Travel Time (s)	3.6		19.7			13.2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	20%	20%	10%	20%	20%	5%
Shared Lane Traffic (%)						
Lane Group Flow (vph)	448	0	2330	720	46	1565
Turn Type	Prot		NA	Perm	Perm	NA
Protected Phases	8		2			6
Permitted Phases				2	6	
Detector Phase	8		2	2	6	6
Switch Phase						
Minimum Initial (s)	8.0		20.0	20.0	20.0	20.0
Minimum Split (s)	27.0		25.5	25.5	25.5	25.5
Total Split (s)	27.0		93.0	93.0	93.0	93.0
Total Split (%)	22.5%		77.5%	77.5%	77.5%	77.5%
Yellow Time (s)	4.0		4.0	4.0	4.0	4.0
All-Red Time (s)	1.0		1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0		5.0	5.0	5.0	5.0
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	None		C-Min	C-Min	C-Min	C-Min
Act Effct Green (s)	21.0		89.0	89.0	89.0	89.0
Actuated g/C Ratio	0.18		0.74	0.74	0.74	0.74
v/c Ratio	0.86		0.95	0.60	0.87	0.61
Control Delay	65.2		25.5	3.7	100.2	4.3
Queue Delay	0.0		0.6	0.0	0.0	0.0
Total Delay	65.2		26.1	3.7	100.2	4.3
LOS	E		C	A	F	A
Approach Delay	65.2		20.8			7.1
Approach LOS	E		C			A
Queue Length 50th (m)	52.5		263.6	14.4	5.6	29.8
Queue Length 95th (m)	#76.5		#330.3	13.9	m#21.3	38.8
Internal Link Dist (m)	26.6		303.8			195.5

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Turn Bay Length (m)				80.0	50.0	
Base Capacity (vph)	542		2460	1195	53	2577
Starvation Cap Reductn	0		25	0	0	0
Spillback Cap Reductn	0		0	0	0	0
Storage Cap Reductn	0		0	0	0	0
Reduced v/c Ratio	0.83		0.96	0.60	0.87	0.61

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Green
Natural Cycle: 110
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.95
Intersection Signal Delay: 20.4 Intersection LOS: C
Intersection Capacity Utilization 79.4% ICU Level of Service D
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 5: Highway 2A & South St

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	508	293	532	2358	1517	410
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	0.0	50.0			80.0
Storage Lanes	2	1	2			1
Taper Length (m)	2.5		2.5			
Lane Util. Factor	0.97	1.00	0.97	0.91	0.95	1.00
Frt		0.850				0.850
Flt Protected	0.950		0.950			
Satd. Flow (prot)	3372	1555	3372	4995	3476	1555
Flt Permitted	0.950		0.950			
Satd. Flow (perm)	3372	1555	3372	4995	3476	1555
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		297				344
Link Speed (k/h)	50			60	60	
Link Distance (m)	79.1			148.6	327.8	
Travel Time (s)	5.7			8.9	19.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Lane Group Flow (vph)	552	318	578	2563	1649	446
Turn Type	Prot	Perm	Prot	NA	NA	Perm
Protected Phases	7		5	2	6	
Permitted Phases		4				6
Detector Phase	7	4	5	2	6	6
Switch Phase						
Minimum Initial (s)	8.0	8.0	8.0	20.0	20.0	20.0
Minimum Split (s)	31.0	31.0	23.0	25.0	25.0	25.0
Total Split (s)	31.0	31.0	26.0	89.0	63.0	63.0
Total Split (%)	25.8%	25.8%	21.7%	74.2%	52.5%	52.5%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag			Lead		Lag	Lag
Lead-Lag Optimize?			Yes		Yes	Yes
Recall Mode	None	None	None	C-Min	C-Min	C-Min
Act Effct Green (s)	23.6	23.6	22.6	86.4	58.8	58.8
Actuated g/C Ratio	0.20	0.20	0.19	0.72	0.49	0.49
v/c Ratio	0.83	0.58	0.91	0.71	0.97	0.48
Control Delay	57.8	10.6	68.0	11.4	37.2	2.9
Queue Delay	52.6	1.0	0.0	0.1	0.0	0.0
Total Delay	110.4	11.6	68.0	11.5	37.2	2.9
LOS	F	B	E	B	D	A
Approach Delay	74.3			21.9	29.9	
Approach LOS	E			C	C	
Queue Length 50th (m)	64.1	4.0	69.6	117.0	203.6	1.0
Queue Length 95th (m)	82.7	29.3	#106.3	138.5	#251.4	m10.5
Internal Link Dist (m)	55.1			124.6	303.8	
Turn Bay Length (m)			50.0			80.0

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Base Capacity (vph)	730	569	634	3595	1704	937
Starvation Cap Reductn	235	89	0	0	0	0
Spillback Cap Reductn	17	0	0	174	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	1.12	0.66	0.91	0.75	0.97	0.48

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 110
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.97
Intersection Signal Delay: 32.1 Intersection LOS: C
Intersection Capacity Utilization 84.1% ICU Level of Service E
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 6: Highway 2A & Broadway Ave

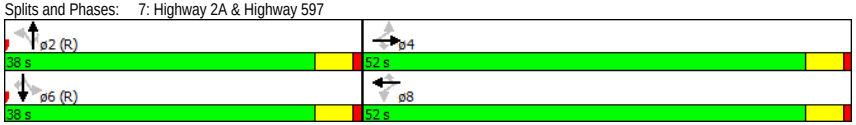
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	126	206	366	161	171	413	359	1998	78	218	1363	97
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		50.0	0.0		50.0	50.0		50.0	50.0		50.0
Storage Lanes	0		1	0		1	1		1	1		1
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected		0.981			0.976		0.950			0.950		
Satd. Flow (prot)	0	1714	1512	0	1696	1555	1690	1779	1512	1738	1830	1555
Flt Permitted		0.599			0.534		0.096			0.096		
Satd. Flow (perm)	0	1046	1512	0	928	1555	171	1779	1512	176	1830	1555
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			24			24			24			34
Link Speed (k/h)		50			50			60			60	
Link Distance (m)		67.4			78.0			157.9			368.2	
Travel Time (s)		4.9			5.6			9.5			22.1	
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
Heavy Vehicles (%)	5%	13%	8%	8%	13%	5%	8%	8%	8%	5%	5%	5%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	361	398	0	361	449	390	2172	85	237	1482	105
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2		2	6		6
Detector Phase	4	4	4	8	8	8	2	2	2	6	6	6
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	20.0	20.0	20.0	20.0	20.0	20.0
Minimum Split (s)	24.0	24.0	24.0	24.0	24.0	24.0	26.0	26.0	26.0	26.0	26.0	26.0
Total Split (s)	52.0	52.0	52.0	52.0	52.0	52.0	38.0	38.0	38.0	38.0	38.0	38.0
Total Split (%)	57.8%	57.8%	57.8%	57.8%	57.8%	57.8%	42.2%	42.2%	42.2%	42.2%	42.2%	42.2%
Yellow 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
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	None	None	None	None	None	None	C-Max	C-Max	C-Max	C-Max	C-Max	C-Max
Act Effct Green (s)		38.4	38.4		38.4	38.4	41.6	41.6	41.6	41.6	41.6	41.6
Actuated g/C Ratio		0.43	0.43		0.43	0.43	0.46	0.46	0.46	0.46	0.46	0.46
v/c Ratio		0.81	0.60		0.91	0.66	4.94	2.64	0.12	2.93	1.75	0.14
Control Delay		36.4	21.6		51.7	23.5	1821.7	759.7	13.5	915.4	365.5	12.7
Queue Delay		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay		36.4	21.6		51.7	23.5	1821.7	759.7	13.5	915.4	365.5	12.7
LOS		D	C		D	C	F	F	B	F	F	B
Approach Delay		28.7			36.1			892.2			416.7	
Approach LOS		C			D			F			F	
Queue Length 50th (m)		50.7	46.4		54.4	54.6	~117.8	~647.0	6.0	~60.1	~392.2	7.0
Queue Length 95th (m)		75.8	63.2		#94.7	73.1	#176.8	#750.2	16.5	#109.6	#493.9	18.8
Internal Link Dist (m)		43.4			54.0			133.9			344.2	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Bay Length (m)			50.0			50.0	50.0		50.0	50.0		50.0
Base Capacity (vph)		546	801		484	823	79	822	712	81	846	737
Starvation Cap Reductn		0	0		0	0	0	0	0	0	0	0
Spillback Cap Reductn		0	0		0	0	0	0	0	0	0	0
Storage Cap Reductn		0	0		0	0	0	0	0	0	0	0
Reduced v/c Ratio		0.66	0.50		0.75	0.55	4.94	2.64	0.12	2.93	1.75	0.14

Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 60
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 4.94
Intersection Signal Delay: 525.3 Intersection LOS: F
Intersection Capacity Utilization 174.2% ICU Level of Service H
Analysis Period (min) 15
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 7: Highway 2A & Highway 597

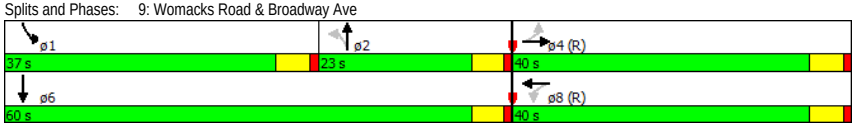


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	115	278	5	58	332	926	5	5	5	902	5	111
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	50.0		0.0	0.0		0.0	50.0		0.0	50.0		0.0
Storage Lanes	1		0	0		1	1		0	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.97	1.00	1.00
Frt		0.998				0.850		0.925			0.856	
Flt Protected	0.950				0.993		0.950			0.950		
Satd. Flow (prot)	1738	1826	0	0	1817	1555	1738	1692	0	3372	1566	0
Flt Permitted	0.390				0.905		0.714			0.950		
Satd. Flow (perm)	714	1826	0	0	1656	1555	1306	1692	0	3372	1566	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		1				918		5			121	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		860.4			145.8			110.5			601.0	
Travel Time (s)		61.9			10.5			8.0			43.3	
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)	125	307	0	0	424	1007	5	10	0	980	126	0
Turn Type	Perm	NA		Perm	NA	Free	Perm	NA		Prot	NA	
Protected Phases		4			8			2		1	6	
Permitted Phases	4			8		Free	2					
Detector Phase	4	4		8	8		2	2		1	6	
Switch Phase												
Minimum Initial (s)	20.0	20.0		20.0	20.0		10.0	10.0		8.0	10.0	
Minimum Split (s)	25.0	25.0		25.0	25.0		23.0	23.0		13.0	23.0	
Total Split (s)	40.0	40.0		40.0	40.0		23.0	23.0		37.0	60.0	
Total Split (%)	40.0%	40.0%		40.0%	40.0%		23.0%	23.0%		37.0%	60.0%	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.0	5.0			5.0		5.0	5.0		5.0	5.0	
Lead/Lag							Lag	Lag		Lead		
Lead-Lag Optimize?							Yes	Yes		Yes		
Recall Mode	C-Min	C-Min		C-Min	C-Min		None	None		Min	Min	
Act Effct Green (s)	49.9	49.9			49.9	100.0	11.6	11.6		32.5	40.1	
Actuated g/C Ratio	0.50	0.50			0.50	1.00	0.12	0.12		0.32	0.40	
v/c Ratio	0.35	0.34			0.51	0.65	0.03	0.05		0.89	0.18	
Control Delay	22.8	19.0			30.5	4.7	37.4	28.8		43.9	3.2	
Queue Delay	0.0	0.0			0.6	0.0	0.0	0.0		0.0	0.0	
Total Delay	22.8	19.0			31.2	4.7	37.4	28.8		43.9	3.2	
LOS	C	B			C	A	D	C		D	A	
Approach Delay		20.1			12.5			31.7			39.3	
Approach LOS		C			B			C			D	
Queue Length 50th (m)	13.0	31.5			59.3	51.3	0.9	0.9		86.3	0.6	
Queue Length 95th (m)	37.6	70.3			116.3	120.9	3.9	5.2		#129.6	8.1	
Internal Link Dist (m)		836.4			121.8			86.5			577.0	
Turn Bay Length (m)	50.0						50.0			50.0		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Base Capacity (vph)	356	911			826	1555	235	308		1115	915	
Starvation Cap Reductn	0	0			147	0	0	0		0	0	
Spillback Cap Reductn	0	0			0	0	0	0		0	0	
Storage Cap Reductn	0	0			0	0	0	0		0	0	
Reduced v/c Ratio	0.35	0.34			0.62	0.65	0.02	0.03		0.88	0.14	

Intersection Summary		
Area Type:	Other	
Cycle Length: 100		
Actuated Cycle Length: 100		
Offset: 52 (52%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green		
Natural Cycle: 90		
Control Type: Actuated-Coordinated		
Maximum v/c Ratio: 0.89		
Intersection Signal Delay: 23.6	Intersection LOS: C	
Intersection Capacity Utilization 82.2%	ICU Level of Service E	
Analysis Period (min) 15		
# 95th percentile volume exceeds capacity, queue may be longer.		
Queue shown is maximum after two cycles.		

Splits and Phases: 9: Womacks Road & Broadway Ave



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	113	60	700	235	53	579
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	0.95	0.95	0.95	0.95
Frt	0.953		0.962			
Flt Protected	0.968					0.996
Satd. Flow (prot)	1688	0	3344	0	0	3462
Flt Permitted	0.968					0.816
Satd. Flow (perm)	1688	0	3344	0	0	2837
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)	26		86			
Link Speed (k/h)	50		50			50
Link Distance (m)	315.7		332.5			232.9
Travel Time (s)	22.7		23.9			16.8
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Lane Group Flow (vph)	188	0	1016	0	0	687
Turn Type	Prot		NA		Perm	NA
Protected Phases	8		2			6
Permitted Phases					6	
Detector Phase	8		2		6	6
Switch Phase						
Minimum Initial (s)	8.0		20.0		20.0	20.0
Minimum Split (s)	24.0		25.0		25.0	25.0
Total Split (s)	33.0		67.0		67.0	67.0
Total Split (%)	33.0%		67.0%		67.0%	67.0%
Yellow Time (s)	4.0		4.0		4.0	4.0
All-Red Time (s)	1.0		1.0		1.0	1.0
Lost Time Adjust (s)	0.0		0.0			0.0
Total Lost Time (s)	5.0		5.0			5.0
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	None		Min		Min	Min
Act Effct Green (s)	11.0		24.0			24.0
Actuated g/C Ratio	0.24		0.53			0.53
v/c Ratio	0.44		0.56			0.46
Control Delay	16.0		8.4			8.3
Queue Delay	0.0		0.0			0.0
Total Delay	16.0		8.4			8.3
LOS	B		A			A
Approach Delay	16.0		8.4			8.3
Approach LOS	B		A			A
Queue Length 50th (m)	9.1		19.4			13.6
Queue Length 95th (m)	26.9		48.7			34.7
Internal Link Dist (m)	291.7		308.5			208.9
Turn Bay Length (m)						
Base Capacity (vph)	1081		3344			2837
Starvation Cap Reductn	0		0			0
Spillback Cap Reductn	0		0			0

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Storage Cap Reductn	0		0			0
Reduced v/c Ratio	0.17		0.30			0.24

Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 45.2			
Natural Cycle: 50			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.56			
Intersection Signal Delay: 9.1		Intersection LOS: A	
Intersection Capacity Utilization 66.8%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 16: Vista Trail & Womacks Road

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	164	409	144	716	513	118
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	0.95	0.95	0.95	0.95
Frt		0.850			0.972	
Flt Protected	0.950			0.992		
Satd. Flow (prot)	1460	1306	0	3448	3285	0
Flt Permitted	0.950			0.704		
Satd. Flow (perm)	1460	1306	0	2447	3285	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		293			37	
Link Speed (k/h)	50			50	50	
Link Distance (m)	151.9			480.9	332.5	
Travel Time (s)	10.9			34.6	23.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	25%	25%	5%	5%	8%	8%
Shared Lane Traffic (%)						
Lane Group Flow (vph)	178	445	0	935	686	0
Turn Type	Prot	Perm	pm+pt	NA	NA	
Protected Phases	4		5	2	6	
Permitted Phases		4	2			
Detector Phase	4	4	5	2	6	
Switch Phase						
Minimum Initial (s)	8.0	8.0	4.0	20.0	20.0	
Minimum Split (s)	24.0	24.0	9.0	25.0	25.0	
Total Split (s)	40.0	40.0	9.0	60.0	51.0	
Total Split (%)	40.0%	40.0%	9.0%	60.0%	51.0%	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.0	5.0		5.0	5.0	
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?			Yes		Yes	
Recall Mode	None	None	None	Min	Min	
Act Effct Green (s)	17.7	17.7		35.1	35.1	
Actuated g/C Ratio	0.28	0.28		0.55	0.55	
v/c Ratio	0.44	0.78		0.70	0.38	
Control Delay	24.7	18.8		15.0	9.2	
Queue Delay	0.0	0.0		0.0	0.0	
Total Delay	24.7	18.8		15.0	9.2	
LOS	C	B		B	A	
Approach Delay	20.5			15.0	9.2	
Approach LOS	C			B	A	
Queue Length 50th (m)	15.6	13.3		33.3	17.8	
Queue Length 95th (m)	43.0	60.2		88.6	47.2	
Internal Link Dist (m)	127.9			456.9	308.5	
Turn Bay Length (m)						
Base Capacity (vph)	902	919		2049	2583	
Starvation Cap Reductn	0	0		0	0	

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Spillback Cap Reductn	0	0		0	0	
Storage Cap Reductn	0	0		0	0	
Reduced v/c Ratio	0.20	0.48		0.46	0.27	

Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 64.1			
Natural Cycle: 60			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.78			
Intersection Signal Delay: 14.7		Intersection LOS: B	
Intersection Capacity Utilization 63.5%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 17: Vista Trail & Ducan Ave

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	10	26	42	182	1	44	2	835	398	71	841	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		100.0	0.0		50.0	0.0		0.0
Storage Lanes	1		0	1		0	0		1	0		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95	0.95
Frt		0.907			0.853				0.850			
Flt Protected	0.950			0.950							0.996	
Satd. Flow (prot)	1547	1477	0	1738	1561	0	0	3476	1555	0	3462	0
Flt Permitted	0.725			0.709				0.954			0.776	
Satd. Flow (perm)	1180	1477	0	1297	1561	0	0	3316	1555	0	2698	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		46			48				433			
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		276.5			746.2			141.8			480.9	
Travel Time (s)		19.9			53.7			10.2			34.6	
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
Heavy Vehicles (%)	18%	18%	18%	5%	5%	5%	5%	5%	5%	5%	5%	5%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	11	74	0	198	49	0	0	910	433	0	993	0
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		
Detector Phase	4	4		8	8		2	2	2	6	6	
Switch Phase												
Minimum Initial (s)	8.0	8.0		8.0	8.0		10.0	10.0	10.0	10.0	10.0	
Minimum Split (s)	27.0	27.0		27.0	27.0		24.0	24.0	24.0	24.0	24.0	
Total Split (s)	41.0	41.0		41.0	41.0		79.0	79.0	79.0	79.0	79.0	
Total Split (%)	34.2%	34.2%		34.2%	34.2%		65.8%	65.8%	65.8%	65.8%	65.8%	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0	0.0		0.0	
Total Lost Time (s)	5.0	5.0		5.0	5.0			5.0	5.0		5.0	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	None	None		None	None		C-Min	C-Min	C-Min	C-Min	C-Min	
Act Effct Green (s)	23.6	23.6		23.6	23.6			86.4	86.4		86.4	
Actuated g/C Ratio	0.20	0.20		0.20	0.20			0.72	0.72		0.72	
v/c Ratio	0.05	0.23		0.78	0.14			0.38	0.35		0.51	
Control Delay	35.4	18.3		64.9	10.8			7.8	1.5		9.5	
Queue Delay	0.0	0.0		0.0	0.0			0.0	0.0		0.0	
Total Delay	35.4	18.3		64.9	10.8			7.8	1.5		9.5	
LOS	D	B		E	B			A	A		A	
Approach Delay		20.5			54.2			5.8			9.5	
Approach LOS		C			D			A			A	
Queue Length 50th (m)	2.1	5.5		44.5	0.2			38.6	0.0		48.4	
Queue Length 95th (m)	6.6	16.7		65.1	9.4			63.7	10.5		81.3	
Internal Link Dist (m)		252.5			722.2			117.8			456.9	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Bay Length (m)									50.0			
Base Capacity (vph)	354	475		389	501			2386	1240		1941	
Starvation Cap Reductn	0	0		0	0			0	0		0	
Spillback Cap Reductn	0	0		0	0			0	0		0	
Storage Cap Reductn	0	0		0	0			0	0		0	
Reduced v/c Ratio	0.03	0.16		0.51	0.10			0.38	0.35		0.51	

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 60
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.78
Intersection Signal Delay: 12.1 Intersection LOS: B
Intersection Capacity Utilization 77.8% ICU Level of Service D
Analysis Period (min) 15

Splits and Phases: 18: South St & Vista Trail

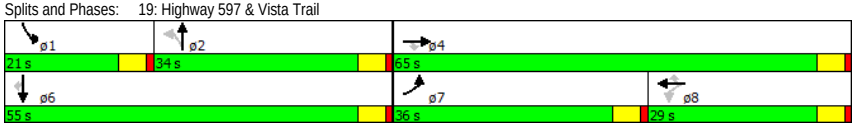
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	847	454	8	2	627	362	10	8	7	439	0	641
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	50.0		50.0	50.0		50.0	0.0		0.0	50.0		0.0
Storage Lanes	2		1	1		1	0		0	2		1
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	0.97	1.00	1.00
Frt			0.850			0.850		0.961				
Flt Protected	0.950			0.950				0.981		0.950		
Satd. Flow (prot)	3278	3230	1555	1738	3174	1512	0	1725	0	3278	1830	1779
Flt Permitted	0.950			0.472				0.883		0.950		
Satd. Flow (perm)	3278	3230	1555	864	3174	1512	0	1553	0	3278	1830	1779
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			64			311		8				619
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		267.0			499.4			80.3			111.2	
Travel Time (s)		19.2			36.0			5.8			8.0	
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
Heavy Vehicles (%)	8%	13%	5%	5%	15%	8%	5%	5%	5%	8%	5%	8%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	921	493	9	2	682	393	0	28	0	477	0	697
Turn Type	Prot	NA	Perm	Perm	NA	Perm	Perm	NA		Prot		Perm
Protected Phases	7	4			8			2		1	6	
Permitted Phases			4	8		8	2					6
Detector Phase	7	4	4	8	8	8	2	2		1	6	6
Switch Phase												
Minimum Initial (s)	8.0	20.0	20.0	20.0	20.0	20.0	10.0	10.0		8.0	8.0	8.0
Minimum Split (s)	13.0	28.0	28.0	28.0	28.0	28.0	34.0	34.0		13.0	34.0	34.0
Total Split (s)	36.0	65.0	65.0	29.0	29.0	29.0	34.0	34.0		21.0	55.0	55.0
Total Split (%)	30.0%	54.2%	54.2%	24.2%	24.2%	24.2%	28.3%	28.3%		17.5%	45.8%	45.8%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0		1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0		0.0		0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0		5.0		5.0	5.0	5.0
Lead/Lag	Lead			Lag	Lag	Lag	Lag	Lag		Lead		
Lead-Lag Optimize?	Yes			Yes	Yes	Yes	Yes	Yes		Yes		
Recall Mode	None	Min	Min	Min	Min	Min	None	None		None	None	None
Act Effct Green (s)	31.5	60.9	60.9	24.4	24.4	24.4		13.3		16.2		27.7
Actuated g/C Ratio	0.32	0.62	0.62	0.25	0.25	0.25		0.13		0.16		0.28
v/c Ratio	0.88	0.25	0.01	0.01	0.87	0.65		0.13		0.88		0.74
Control Delay	44.9	10.9	0.0	35.0	50.7	14.6		31.6		61.5		9.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0		0.0		0.0
Total Delay	44.9	10.9	0.0	35.0	50.7	14.6		31.6		61.5		9.1
LOS	D	B	A	C	D	B		C		E		A
Approach Delay		32.8			37.5			31.6				
Approach LOS		C			D			C				
Queue Length 50th (m)	89.2	22.5	0.0	0.3	68.5	13.0		3.7		47.9		11.0
Queue Length 95th (m)	#164.5	46.4	0.0	2.7	#130.8	52.8		11.2		#98.1		42.5
Internal Link Dist (m)		243.0			475.4			56.3			87.2	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Bay Length (m)	50.0		50.0	50.0		50.0				50.0		
Base Capacity (vph)	1044	1991	983	213	782	607		468		539		1215
Starvation Cap Reductn	0	0	0	0	0	0		0		0		0
Spillback Cap Reductn	0	0	0	0	0	0		0		0		0
Storage Cap Reductn	0	0	0	0	0	0		0		0		0
Reduced v/c Ratio	0.88	0.25	0.01	0.01	0.87	0.65		0.06		0.88		0.57

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 98.8
Natural Cycle: 130
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.88
Intersection Signal Delay: 33.4 Intersection LOS: C
Intersection Capacity Utilization 77.9% ICU Level of Service D
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 19: Highway 597 & Vista Trail



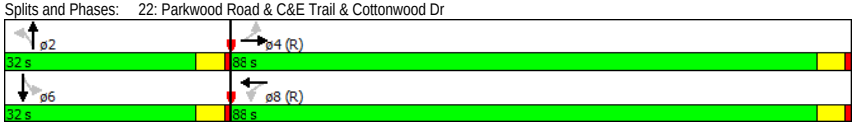
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	240	953	74	30	594	35	64	45	49	53	18	215
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.989			0.993			0.922			0.862	
Flt Protected	0.950				0.998		0.950			0.950		
Satd. Flow (prot)	1659	3282	0	0	1763	0	1706	1655	0	1706	1548	0
Flt Permitted	0.379				0.911		0.298			0.663		
Satd. Flow (perm)	662	3282	0	0	1609	0	535	1655	0	1190	1548	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		15			5			42			234	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		82.6			312.1			555.4			387.8	
Travel Time (s)		5.9			22.5			40.0			27.9	
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
Heavy Vehicles (%)	10%	10%	10%	8%	8%	8%	7%	7%	7%	7%	7%	7%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	261	1116	0	0	717	0	70	102	0	58	254	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		20.0	20.0		20.0	20.0	
Minimum Split (s)	24.0	24.0		24.0	24.0		25.0	25.0		25.0	25.0	
Total Split (s)	88.0	88.0		88.0	88.0		32.0	32.0		32.0	32.0	
Total Split (%)	73.3%	73.3%		73.3%	73.3%		26.7%	26.7%		26.7%	26.7%	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.0	5.0			5.0		5.0	5.0		5.0	5.0	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	C-Min	C-Min		C-Min	C-Min		Min	Min		Min	Min	
Act Effct Green (s)	88.0	88.0			88.0		22.0	22.0		22.0	22.0	
Actuated g/C Ratio	0.73	0.73			0.73		0.18	0.18		0.18	0.18	
v/c Ratio	0.54	0.46			0.61		0.71	0.30		0.27	0.54	
Control Delay	8.4	4.2			10.8		73.9	20.1		44.5	11.2	
Queue Delay	1.3	1.4			0.0		1.1	0.0		0.0	0.1	
Total Delay	9.7	5.6			10.9		75.0	20.1		44.5	11.3	
LOS	A	A			B		E	C		D	B	
Approach Delay		6.4			10.9			42.4			17.5	
Approach LOS		A			B			D			B	
Queue Length 50th (m)	13.6	28.2			65.2		16.5	7.0		12.1	4.0	
Queue Length 95th (m)	m18.1	m23.0			124.3		#34.3	32.5		22.9	25.4	
Internal Link Dist (m)		58.6			288.1			531.4			363.8	
Turn Bay Length (m)												
Base Capacity (vph)	486	2416			1184		121	407		269	531	
Starvation Cap Reductn	90	1035			0		0	0		0	0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Spillback Cap Reductn	0	0			15		6	0		0	21	
Storage Cap Reductn	0	0			0		0	0		0	0	
Reduced v/c Ratio	0.66	0.81			0.61		0.61	0.25		0.22	0.50	

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 76 (63%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green
Natural Cycle: 65
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.71
Intersection Signal Delay: 11.4 Intersection LOS: B
Intersection Capacity Utilization 113.7% ICU Level of Service H
Analysis Period (min) 15
\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 22: Parkwood Road & C&E Trail & Cottonwood Dr

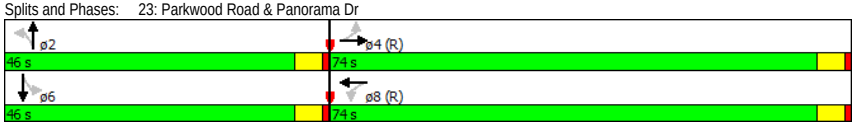


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	283	364	40	12	236	46	41	50	33	57	37	250
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.991			0.979			0.940			0.869	
Flt Protected		0.980			0.998		0.950			0.950		
Satd. Flow (prot)	0	3376	0	0	1788	0	1706	1688	0	1706	1560	0
Flt Permitted		0.717			0.966		0.284			0.670		
Satd. Flow (perm)	0	2470	0	0	1730	0	510	1688	0	1203	1560	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		9			13			30			272	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		68.8			305.1			487.4			555.4	
Travel Time (s)		5.0			22.0			35.1			40.0	
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
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%	7%	7%	7%	7%	7%	7%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	747	0	0	320	0	45	90	0	62	312	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	20.0	20.0		20.0	20.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	25.0	25.0		25.0	25.0		23.0	23.0		23.0	23.0	
Total Split (s)	74.0	74.0		74.0	74.0		46.0	46.0		46.0	46.0	
Total Split (%)	61.7%	61.7%		61.7%	61.7%		38.3%	38.3%		38.3%	38.3%	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		5.0			5.0		5.0	5.0		5.0	5.0	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	C-Min	C-Min		C-Min	C-Min		None	None		None	None	
Act Effct Green (s)		95.9			95.9		14.1	14.1		14.1	14.1	
Actuated g/C Ratio		0.80			0.80		0.12	0.12		0.12	0.12	
v/c Ratio		0.38			0.23		0.76	0.40		0.44	0.74	
Control Delay		4.5			3.7		106.7	32.1		53.9	17.8	
Queue Delay		0.6			0.0		0.6	0.0		0.0	0.3	
Total Delay		5.2			3.7		107.3	32.1		53.9	18.2	
LOS		A			A		F	C		D	B	
Approach Delay		5.2			3.7			57.2			24.1	
Approach LOS		A			A			E			C	
Queue Length 50th (m)		18.4			13.2		11.2	13.1		13.8	9.7	
Queue Length 95th (m)		79.6			30.2		m#24.6	m27.1		m25.5	36.7	
Internal Link Dist (m)		44.8			281.1			463.4			531.4	
Turn Bay Length (m)												
Base Capacity (vph)		1976			1385		174	596		411	712	
Starvation Cap Reductn		805			0		0	0		0	0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Spillback Cap Reductn		0			98		30	0		0	98	
Storage Cap Reductn		0			0		0	0		0	0	
Reduced v/c Ratio		0.64			0.25		0.31	0.15		0.15	0.51	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 1 (1%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green			
Natural Cycle: 50			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.76			
Intersection Signal Delay: 13.8		Intersection LOS: B	
Intersection Capacity Utilization 78.6%		ICU Level of Service D	
Analysis Period (min) 15			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			
m Volume for 95th percentile queue is metered by upstream signal.			

Splits and Phases: 23: Parkwood Road & Panorama Dr

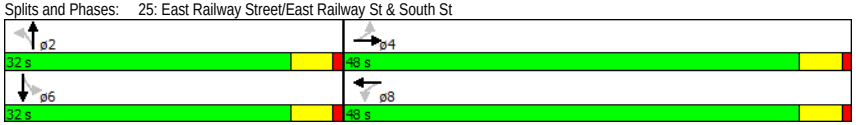


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	433	109	50	2	117	1	62	140	3	0	105	269
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	0.95	0.95	0.95
Frt		0.953			0.999			0.998			0.892	
Flt Protected	0.950				0.999			0.985				
Satd. Flow (prot)	1690	1710	0	0	1826	0	0	3417	0	0	2998	0
Flt Permitted	0.674				0.997			0.749				
Satd. Flow (perm)	1199	1710	0	0	1822	0	0	2599	0	0	2998	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		45			1			2			292	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		746.2			468.9			641.2			463.5	
Travel Time (s)		53.7			33.8			46.2			33.4	
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
Heavy Vehicles (%)	8%	8%	5%	5%	5%	5%	5%	5%	5%	10%	5%	10%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	471	172	0	0	130	0	0	222	0	0	406	0
Turn Type	Perm	NA		Perm	NA		Perm	NA			NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	23.0	23.0		23.0	23.0		23.0	23.0		23.0	23.0	
Total Split (s)	48.0	48.0		48.0	48.0		32.0	32.0		32.0	32.0	
Total Split (%)	60.0%	60.0%		60.0%	60.0%		40.0%	40.0%		40.0%	40.0%	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0			0.0			0.0			0.0	
Total Lost Time (s)	5.0	5.0			5.0			5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	Min	Min		Min	Min		None	None		None	None	
Act Effct Green (s)	23.9	23.9			23.9			12.1			12.1	
Actuated g/C Ratio	0.51	0.51			0.51			0.26			0.26	
v/c Ratio	0.77	0.19			0.14			0.33			0.41	
Control Delay	18.4	4.9			5.9			18.0			7.1	
Queue Delay	0.0	0.0			0.0			0.0			0.0	
Total Delay	18.4	4.9			5.9			18.0			7.1	
LOS	B	A			A			B			A	
Approach Delay		14.8			5.9			18.0			7.1	
Approach LOS		B			A			B			A	
Queue Length 50th (m)	23.0	4.1			4.1			6.8			3.3	
Queue Length 95th (m)	66.7	13.5			12.6			21.4			16.5	
Internal Link Dist (m)		722.2			444.9			617.2			439.5	
Turn Bay Length (m)												
Base Capacity (vph)	1070	1531			1626			1614			1972	
Starvation Cap Reductn	0	0			0			0			0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Spillback Cap Reductn	0	0			0			0			0	
Storage Cap Reductn	0	0			0			0			0	
Reduced v/c Ratio	0.44	0.11			0.08			0.14			0.21	

Intersection Summary			
Area Type:	Other		
Cycle Length: 80			
Actuated Cycle Length: 46.7			
Natural Cycle: 60			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.77			
Intersection Signal Delay: 12.3		Intersection LOS: B	
Intersection Capacity Utilization 63.1%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 25: East Railway Street/East Railway St & South St

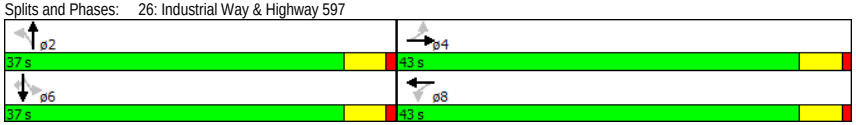


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	18	375	17	3	523	0	102	1	6	5	1	467
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	50.0		0.0	0.0		0.0	50.0		0.0	0.0		0.0
Storage Lanes	1		0	1		0	1		0	0		1
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.994						0.869				0.850
Flt Protected	0.950			0.950			0.950				0.960	
Satd. Flow (prot)	1690	1731	0	1547	1700	0	1547	1415	0	0	1708	1512
Flt Permitted	0.300			0.434			0.754				0.896	
Satd. Flow (perm)	534	1731	0	707	1700	0	1228	1415	0	0	1594	1512
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		4						7				229
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		450.4			2117.8			178.3			143.7	
Travel Time (s)		32.4			152.5			12.8			10.3	
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
Heavy Vehicles (%)	8%	10%	18%	18%	13%	8%	18%	18%	18%	8%	8%	8%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	20	426	0	3	568	0	111	8	0	0	6	508
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		6
Detector Phase	4	4		8	8		2	2		6	6	6
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
Minimum Split (s)	23.0	23.0		23.0	23.0		23.0	23.0		23.0	23.0	23.0
Total Split (s)	43.0	43.0		43.0	43.0		37.0	37.0		37.0	37.0	37.0
Total Split (%)	53.8%	53.8%		53.8%	53.8%		46.3%	46.3%		46.3%	46.3%	46.3%
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0			0.0	0.0
Total Lost Time (s)	5.0	5.0		5.0	5.0		5.0	5.0			5.0	5.0
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	Min	Min		Min	Min		None	None		None	None	None
Act Effct Green (s)	23.7	23.7		23.7	23.7		18.0	18.0			18.0	18.0
Actuated g/C Ratio	0.45	0.45		0.45	0.45		0.34	0.34			0.34	0.34
v/c Ratio	0.08	0.55		0.01	0.75		0.27	0.02			0.01	0.76
Control Delay	11.4	14.8		10.3	20.5		16.1	9.1			13.7	17.6
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0			0.0	0.0
Total Delay	11.4	14.8		10.3	20.5		16.1	9.1			13.7	17.6
LOS	B	B		B	C		B	A			B	B
Approach Delay		14.6			20.4			15.6			17.6	
Approach LOS		B			C			B			B	
Queue Length 50th (m)	1.0	25.9		0.2	39.4		7.0	0.1			0.4	19.6
Queue Length 95th (m)	5.4	67.4		1.6	101.8		21.7	2.5			2.7	67.7
Internal Link Dist (m)		426.4			2093.8			154.3			119.7	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Bay Length (m)	50.0						50.0					
Base Capacity (vph)	401	1301		531	1277		815	942			1059	1081
Starvation Cap Reductn	0	0		0	0		0	0			0	0
Spillback Cap Reductn	0	0		0	0		0	0			0	0
Storage Cap Reductn	0	0		0	0		0	0			0	0
Reduced v/c Ratio	0.05	0.33		0.01	0.44		0.14	0.01			0.01	0.47

Intersection Summary			
Area Type:	Other		
Cycle Length: 80			
Actuated Cycle Length: 53.1			
Natural Cycle: 55			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.76			
Intersection Signal Delay: 17.6		Intersection LOS: B	
Intersection Capacity Utilization 74.6%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 26: Industrial Way & Highway 597

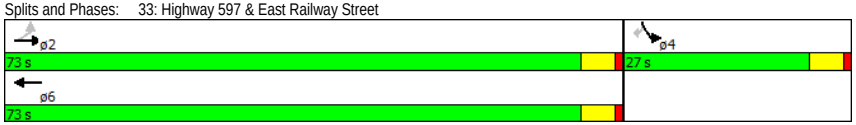


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	354	546	543	84	56	251
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	100.0			100.0	0.0	0.0
Storage Lanes	1			0	1	1
Taper Length (m)	2.5				2.5	
Lane Util. Factor	1.00	0.95	0.95	0.95	1.00	1.00
Frt			0.980			0.850
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1738	3476	3407	0	1738	1555
Flt Permitted	0.390				0.950	
Satd. Flow (perm)	714	3476	3407	0	1738	1555
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)			38			273
Link Speed (k/h)		50	50		50	
Link Distance (m)		499.4	774.4		641.2	
Travel Time (s)		36.0	55.8		46.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Lane Group Flow (vph)	385	593	681	0	61	273
Turn Type	Perm	NA	NA		Prot	Perm
Protected Phases		2	6		4	
Permitted Phases	2					4
Detector Phase	2	2	6		4	4
Switch Phase						
Minimum Initial (s)	20.0	20.0	20.0		8.0	8.0
Minimum Split (s)	25.0	25.0	25.0		27.0	27.0
Total Split (s)	73.0	73.0	73.0		27.0	27.0
Total Split (%)	73.0%	73.0%	73.0%		27.0%	27.0%
Yellow Time (s)	4.0	4.0	4.0		4.0	4.0
All-Red Time (s)	1.0	1.0	1.0		1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0		5.0	5.0
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	Min	Min	Min		None	None
Act Effct Green (s)	43.2	43.2	43.2		11.1	11.1
Actuated g/C Ratio	0.66	0.66	0.66		0.17	0.17
v/c Ratio	0.82	0.26	0.30		0.21	0.56
Control Delay	24.8	4.6	4.6		30.9	9.4
Queue Delay	0.0	0.0	0.0		0.0	0.0
Total Delay	24.8	4.6	4.6		30.9	9.4
LOS	C	A	A		C	A
Approach Delay		12.6	4.6		13.3	
Approach LOS		B	A		B	
Queue Length 50th (m)	21.4	9.6	10.6		6.1	0.0
Queue Length 95th (m)	#112.9	27.7	30.7		20.3	19.6
Internal Link Dist (m)		475.4	750.4		617.2	
Turn Bay Length (m)	100.0					

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Base Capacity (vph)	648	3155	3096		653	754
Starvation Cap Reductn	0	0	0		0	0
Spillback Cap Reductn	0	0	0		0	0
Storage Cap Reductn	0	0	0		0	0
Reduced v/c Ratio	0.59	0.19	0.22		0.09	0.36

Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 65.4			
Natural Cycle: 90			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.82			
Intersection Signal Delay: 9.9		Intersection LOS: A	
Intersection Capacity Utilization 56.5%		ICU Level of Service B	
Analysis Period (min) 15			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

Splits and Phases: 33: Highway 597 & East Railway Street



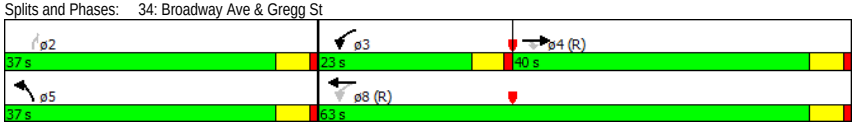
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	859	310	260	1038	366	410
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)		50.0	50.0		50.0	0.0
Storage Lanes		1	1		0	1
Taper Length (m)			2.5		2.5	
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Frt		0.850				0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	3476	1555	1738	3476	1738	1555
Flt Permitted			0.171		0.950	
Satd. Flow (perm)	3476	1555	313	3476	1738	1555
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		288				390
Link Speed (k/h)	50			50	50	
Link Distance (m)	145.8			292.0	243.5	
Travel Time (s)	10.5			21.0	17.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Lane Group Flow (vph)	934	337	283	1128	398	446
Turn Type	NA	Perm	pm+pt	NA	Prot	Perm
Protected Phases	4		3	8	5	
Permitted Phases		4	8			2
Detector Phase	4	4	3	8	5	2
Switch Phase						
Minimum Initial (s)	20.0	20.0	4.0	20.0	8.0	8.0
Minimum Split (s)	25.0	25.0	9.0	25.0	13.0	23.0
Total Split (s)	40.0	40.0	23.0	63.0	37.0	37.0
Total Split (%)	40.0%	40.0%	23.0%	63.0%	37.0%	37.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lag	Lag	Lead			
Lead-Lag Optimize?	Yes	Yes	Yes			
Recall Mode	C-Min	C-Min	None	C-Min	None	None
Act Effct Green (s)	43.2	43.2	62.9	62.9	27.1	27.1
Actuated g/C Ratio	0.43	0.43	0.63	0.63	0.27	0.27
v/c Ratio	0.62	0.40	0.70	0.52	0.85	0.63
Control Delay	10.2	1.7	21.5	11.9	51.0	9.2
Queue Delay	0.3	0.0	0.0	0.0	0.1	0.0
Total Delay	10.6	1.7	21.5	11.9	51.1	9.2
LOS	B	A	C	B	D	A
Approach Delay	8.2			13.9	28.9	
Approach LOS	A			B	C	
Queue Length 50th (m)	32.8	1.1	23.0	59.7	71.8	8.1
Queue Length 95th (m)	m28.3	m3.6	50.0	84.4	101.6	34.1
Internal Link Dist (m)	121.8			268.0	219.5	
Turn Bay Length (m)		50.0	50.0		50.0	

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Base Capacity (vph)	1502	835	455	2186	556	762
Starvation Cap Reductn	161	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	4	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.70	0.40	0.62	0.52	0.72	0.59

Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 0 (0%), Referenced to phase 4:EBT and 8:WBTL, Start of Green
Natural Cycle: 60
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.85
Intersection Signal Delay: 15.4 Intersection LOS: B
Intersection Capacity Utilization 70.9% ICU Level of Service C
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 34: Broadway Ave & Gregg St



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	26	605	551	385	195	79
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt				0.850	0.961	
Flt Protected	0.950				0.966	
Satd. Flow (prot)	1738	1830	1830	1555	1698	0
Flt Permitted	0.438				0.966	
Satd. Flow (perm)	801	1830	1830	1555	1698	0
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)				418	26	
Link Speed (k/h)		50	50		50	
Link Distance (m)		169.9	79.1		260.2	
Travel Time (s)		12.2	5.7		18.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Lane Group Flow (vph)	28	658	599	418	298	0
Turn Type	Perm	NA	NA	Perm	Prot	
Protected Phases		4	2!		6!	
Permitted Phases	4			2		
Detector Phase	4	4	2	2	6	
Switch Phase						
Minimum Initial (s)	10.0	10.0	10.0	10.0	8.0	
Minimum Split (s)	23.0	23.0	23.0	23.0	30.0	
Total Split (s)	51.0	51.0	49.0	49.0	49.0	
Total Split (%)	51.0%	51.0%	49.0%	49.0%	49.0%	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	None	None	C-Min	C-Min	C-Min	
Act Effct Green (s)	41.2	41.2	48.8	48.8	48.8	
Actuated g/C Ratio	0.41	0.41	0.49	0.49	0.49	
v/c Ratio	0.09	0.87	0.67	0.43	0.35	
Control Delay	16.7	40.2	25.5	3.3	17.0	
Queue Delay	0.0	0.0	53.3	1.1	0.0	
Total Delay	16.7	40.2	78.8	4.3	17.0	
LOS	B	D	E	A	B	
Approach Delay		39.3	48.2		17.0	
Approach LOS		D	D		B	
Queue Length 50th (m)	3.1	110.5	88.6	0.0	32.4	
Queue Length 95th (m)	8.0	150.7	136.4	16.3	55.1	
Internal Link Dist (m)		145.9	55.1		236.2	
Turn Bay Length (m)						
Base Capacity (vph)	368	841	893	973	842	
Starvation Cap Reductn	0	0	376	323	0	
Spillback Cap Reductn	0	0	0	0	0	

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Storage Cap Reductn	0	0	0	0	0	
Reduced v/c Ratio	0.08	0.78	1.16	0.64	0.35	

Intersection Summary		
Area Type:	Other	
Cycle Length: 100		
Actuated Cycle Length: 100		
Offset: 0 (0%), Referenced to phase 2:WBT and 6:SBL, Start of Green		
Natural Cycle: 60		
Control Type: Actuated-Coordinated		
Maximum v/c Ratio: 0.87		
Intersection Signal Delay: 40.5		Intersection LOS: D
Intersection Capacity Utilization 55.8%		ICU Level of Service B
Analysis Period (min) 15		

! Phase conflict between lane groups.

Splits and Phases: 35: New Collector & Broadway Ave