



1640-1660 Carling Avenue

TIA Step 4 – Strategy Report

DRAFT

December 2022

1640-1660 Carling Avenue

TIA Step 4 – Strategy Report

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STRATEGY REPORT

Parsons has been retained by the Hobin Architecture Inc. to prepare a Transportation Impact Assessment (TIA) in support of a Zoning By-Law Amendment (ZBLA) and Plan of Subdivision Application for the 1640-1660 Carling Avenue site, located south of Carling Avenue and east of Clyde Avenue. This document follows the TIA process, presenting a Step 4 Strategy Report, as outlined in the City Transportation Impact Assessment (TIA) Guidelines, 2017. Note that City comments on the Forecasting Report submission (dated November 18, 2022) have not been received as of yet. The following Analysis section has been prepared in support of the Plan of Subdivision process in draft format, recognizing comments to the Forecasting section are pending. This report will be revised in the future to incorporate any comments by the City on the Forecasting Report submission.

1.0 SCREENING FORM

The Screening Form confirmed the need for a TIA Report based on the Trip Generation trigger since the proposed development consists of approximately 1,700 residential apartment units; the Location trigger since the development is located within 600 meters from the Carling Avenue Transit Priority and the Carling Arterial Mainstreet Design Priority Area; and the Safety trigger since the development proposes a new/reconfigured driveway to Clyde Avenue. The Screening Form has been provided in **Appendix A**.

2.0 SCOPING REPORT

2.1. Existing and Planned Conditions

2.1.1. Proposed Development

The proposed development is located at the municipal address of 1640-1660 Carling Avenue, on the southeast corner of the Carling Avenue/Clyde Avenue intersection. The site is currently occupied by a Canadian Tire retail store, which will be removed, and Boston Pizza restaurant, which will be replaced at full buildout of the development.

The plan of subdivision proposes up to 6 new residential buildings of various heights ranging from 9 to 40-storeys, which will cater to condo, retail and senior apartment dwelling units. More than 1,700 residential units are proposed in a multi-phase development. For the purposes of this TIA, the development is anticipated to proceed in three phases, where Phase 1 (consisting of 810 units, buildings 5 and 6) is assumed to be constructed by 2026, Phase 2 (consisting of 691 units, buildings 2, 3 and 4) by 2031 and Phase 3 (full buildout – consisting of 214 units, building 1) by 2036. The Boston Pizza in the northeast quadrant of the site will remain until Phase 3, where it will be replaced by building 1.

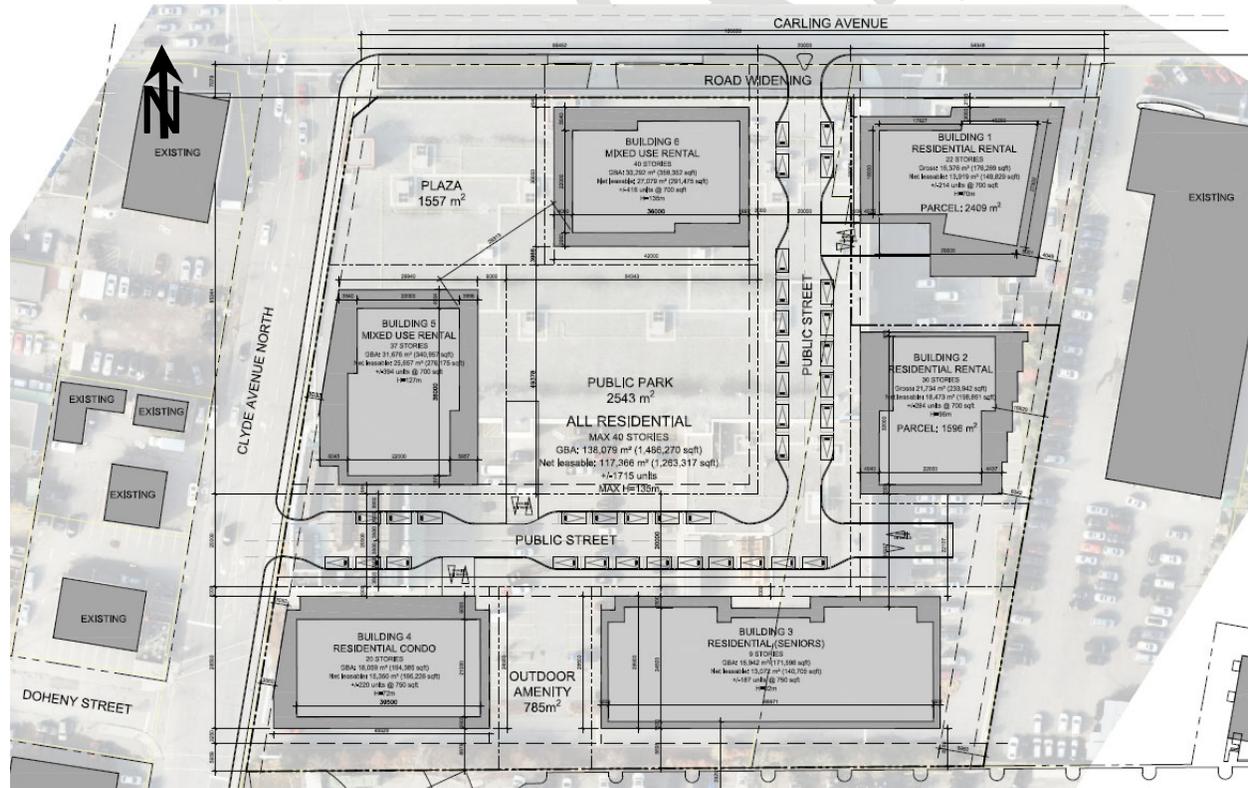
Figure 1 provides the local transportation context, which includes Carling Avenue as the primary east-west arterial and future rapid transit corridor, and Clyde Avenue North, a north-south local roadway. More details regarding the existing study area elements can be found in **Section 2.1.2**.

An initial concept plan of the subdivision, its building layout, and its proposed access strategy to Clyde Avenue and Carling Avenue is illustrated in **Figure 2**. A PDF copy of the latest subdivision plan is included within **Appendix A**. The internal site street will be a public local street. The development will incorporate Transit Oriented Design (TOD) to promote multi-modal mode share uses and design the local street to a 30 km/h design speed, per City of Ottawa guidelines. The internal street is assumed to be constructed at Phase 1. In the interim phases, access to the Boston Pizza restaurant will be provided along the proposed north-south section of the proposed internal public street.

Figure 1: Local Context and Proposed Study Area



Figure 2: Proposed Conceptual Site Plan (December, 2022) – 1640-1660 Carling Ave



2.1.2. Existing Conditions

Area Road Network

The following roads are included in the TIA. Description for each road within the study area has been provided below.

Carling Ave is an east-west municipal arterial roadway within the City of Ottawa that runs from Bronson Ave in the east to March Rd in the west. Within the study area, Carling Ave has a six-lane divided cross-section, with a posted speed limit of 60km/h and auxiliary turn lanes at major intersections.

Churchill Ave N is a north-south municipal roadway within the City of Ottawa, classified as a local roadway south of Carling Ave and as a major collector roadway north of Carling Ave. Churchill Ave N has a two-lane cross-section, with a posted speed limit of 50km/h and auxiliary turn-lanes at major intersections.

Clyde Ave is a north-south municipal local roadway within the City of Ottawa that extends from Carling Ave in the north and terminates at 951 Clyde Ave. The roadway then continues at Castle Hill Crescent intersection down to Merivale Rd/Lotta Ave. Within the study area, Clyde Ave has a two-lane cross-section an assumed speed limit of 50km/h and auxiliary turn lanes at major intersections.

Broadview Ave is a north-south municipal road within the City of Ottawa, classified as a local roadway south of Carling Ave and as a collector roadway north of Carling Ave. Broadview Ave extends from Richmond Rd in the north to Ernest Ave in the south. The posted speed limit is 30km/h north of Carling Ave and assumed to be 50km/h south of thereof. Broadview Ave provides a two-lane cross-section and auxiliary turn lanes at Carling Ave intersection.

Doheny St is an east-west local municipal roadway within the City of Ottawa that extends from Clyde Ave in the east to Boyd Ave, where it continues west as Kerr Ave to Rex Ave. This roadway currently opposes the existing site access at the Clyde Ave intersection. Doheny St provides a two-lane cross-section and an assumed speed limit of 50km/h.

Woodward Dr is an east-west major collector municipal roadway extending from Clyde Ave in the east to Maitland Ave in the west. The roadway provides a two-lane cross-section and an assumed speed limit of 50km/h.

Laperriere Ave is an east-west major collector municipal roadway extending from Clyde Ave in the west to Merivale Rd in the east. The roadway provides a two-lane cross-section and a posted speed limit of 50km/h.

Saigon Ct is a short 130m north-south local municipal road providing access to office buildings and intersecting Carling Ave at both the WB and EB lanes. A two-lane cross-section is provided and a speed limit of 40km/h is assumed given the short length.

Existing Study Area Intersections

Carling/Churchill

The Carling/Churchill intersection is a four-legged signalized intersection. The east and west legs consist of two through lanes, 1 shared through/right-turn lane and one auxiliary left-turn lane. While the north and south legs consist of one shared through/right-turn lane and one auxiliary left-turn lane, with a curbside bike lane and bike crossing provided for the south leg and a cycle track available for the north leg. There are no restricted movements at this intersection. Zebra stripe crosswalks are provided on all legs of the intersection. Advance pedestrian walk phases are provided for the east and west crosswalks.



Carling/Clyde/Cole

The Carling/Clyde/Cole intersection is a four-legged signalized intersection. The east and west legs consist of two through lanes, 1 shared through/right-turn lane and one auxiliary left-turn lane. The north leg consists of one shared through/right-turn lane and one auxiliary left-turn lane. The south leg consists of one through lane, one auxiliary left-turn lane and one auxiliary right-turn lane. There are no restricted movements at this intersection. However, trucks are not permitted to enter the north leg of the intersection. Crosswalks are provided on all legs of the intersection.



Clyde/Doheny

The Clyde/Doheny intersection is a four-legged signalized intersection. The east leg is an existing site access to the Canadian Tire store and provides a shared through/left-turn lane and an auxiliary right-turn lane. The west leg consists of a shared all movement lane. The north and south legs of the intersection consist of one shared through/right-turn lane and one auxiliary left-turn lane. There are no restricted movements at this intersection. Crosswalks are provided on all legs of the intersection.



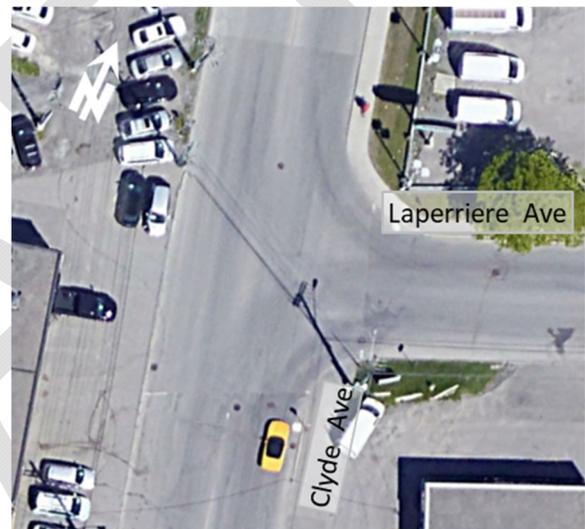
Carling/Broadview

The Carling/Broadview intersection is a four-legged signalized intersection. The east and west legs consist of two through lanes, 1 shared through/right-turn lane and one auxiliary left-turn lane. The north and south legs consist of one shared through/right-turn lane and one auxiliary left-turn lane. There are no restricted movements at this intersection. However, trucks are not permitted to enter the north leg of the intersection. Crosswalks are provided on all legs of the intersection, with median refuge and zebra stripe crossing on the east and west legs. Advance pedestrian walk phases are provided for the east and west crosswalks.



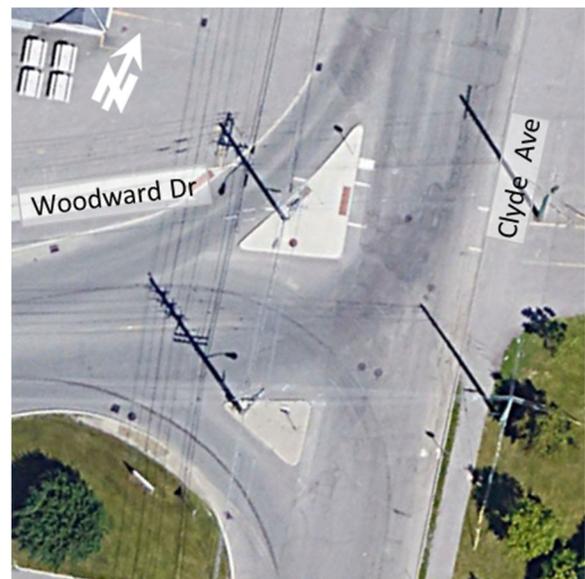
Clyde/Laperriere

The Clyde/Laperriere intersection is a three-legged unsignalized intersection with all-way stop control. All legs of the intersection consist of a single all movement lane. There are no restricted movements at this intersection. However, trucks are not permitted to enter the east leg of the intersection. Crosswalks are provided on all legs of the intersection.



Clyde/Woodward

The Clyde/Laperriere intersection is a three-legged unsignalized intersection with stop control on the north/south approaches along Clyde Ave and yield control on the southbound and eastbound right-turns. The north leg consists of a through lane and a channelized auxiliary right-turn lane. The south leg consists of a shared all movement lane. The west leg consists of a left-turn lane and a channelized auxiliary right-turn lane. There are no restricted movements at this intersection. A crosswalk is provided on the north leg of the intersection.



Carling/Saigon N

The Carling/Saigon N intersection is a four-legged signalized intersection, where Saigon intersects the westbound lanes along Carling Ave. The east leg consists of a through lane, a shared through/right-turn lane, two through lanes and an auxiliary left-turn lane. The north and south legs consist of a single all movement lane. Eastbound movements are not permitted at the intersection. Crosswalks are provided on all legs of the intersection.

Note the aerial image on the right is outdated as the intersection has been reconfigured to the above mentioned configuration as of 2022.



Carling/Saigon S

The Carling/Saigon S intersection is a three-legged signalized intersection, where Saigon intersects the eastbound lanes along Carling Ave. The north leg consists of a double left-turn lane. The west leg consists of two through lane and one shared through/left-turn lane. Westbound movements are not permitted at the intersection. A crosswalk is provided on the west leg of the intersection.

Note the aerial image on the right is outdated as the intersection has been signalized as of 2022 and no recent aerial view is available.



Existing Driveways to Adjacent Developments

There are multiple existing driveways to adjacent developments within 200m of the proposed site accesses at Carling Ave and Clyde Ave. It should be noted that the proposed site already provides access to both Carling Ave via a right-in right-out and Clyde Ave via a right-in right-out and a full movement traffic signal. The Clyde accesses are expected to be combined into a mid-block access location for the proposed 1640-1660 Carling subdivision development. The existing driveways as shown in **Figure 3** include:

- Along Carling Avenue, there are five adjacent driveways on the south side, two located east of Clyde Ave and three located west of Clyde Ave:
 - East of Clyde Ave, the two driveways provide access to car dealerships.
 - West of Clyde Ave, the three adjacent driveways provide access to an auto shop, a restaurant and a dental office.
- Along Clyde Ave, there are eleven adjacent driveways south of Carling Ave, two on the east side and nine on the west side:
 - On the east die, the two driveways provide access to a one-storey building that has not been in use since 2018. The site is in the process of undergoing a development proposal for future residential buildings.

- On the west side, the nine driveways provide access to a mix of minor land uses, including small office buildings, retail stores, restaurants and an auto shop.

Figure 3: Existing Driveways Adjacent to Development



Existing Area Traffic Management Measures

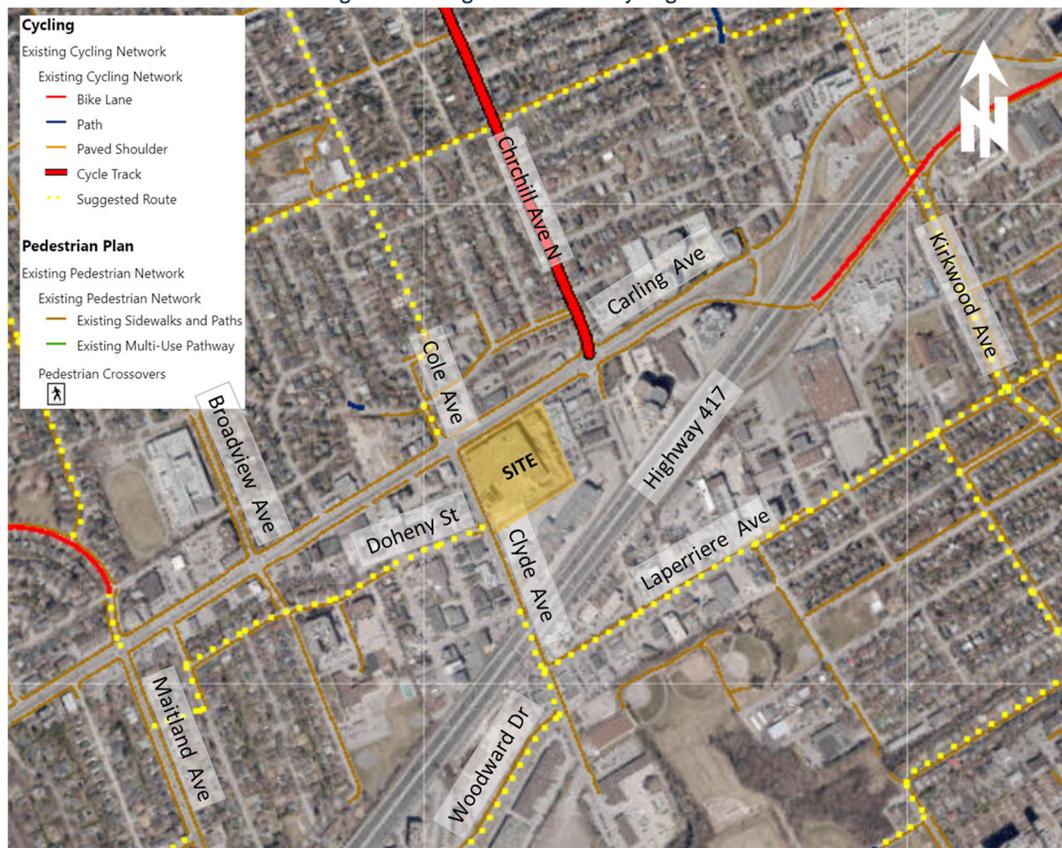
Below are the known existing area traffic management measures within the study area:

- Sidewalk facilities with some crosswalks including high-visibility zebra stripes at the intersections of Carling/Broadview and Carling/Churchill.
- A reduced speed limit of 30km/h along Broadview Ave north of Carling Ave.
- Advance pedestrians walk phases on the east and west legs at the Carling/Churchill and Carling/Broadview intersections.
- Right-turn channel islands at the Clyde/Woodward intersection.
- Flex stakes are provided down the centreline of Broadview Ave.

Pedestrian/Cycling Network

The existing active transportation (walking/cycling) facilities are illustrated in **Figure 4**. Pedestrian sidewalk facilities are provided throughout the study area, including both sides of Carling Ave and the east side of Clyde Ave. With regards to cycling facilities, unidirectional cycle tracks are provided on both sides of Churchill Ave N, between Carling Ave and Byron Ave. There are no dedicated cycling facilities on Carling Ave within the study area, although it is identified as a spine route in the TMP. Cole Ave, Doheny St, Laperriere Ave and Woodward Dr are all suggested cycling routes.

Figure 4: Existing Pedestrian and Cycling Networks



Transit Network

The following OC Transpo routes currently operate at the frontage of the site:

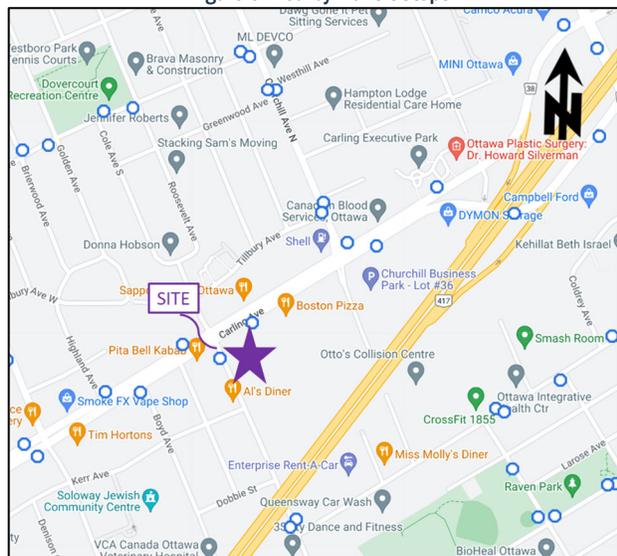
- Route #50 (Tunney's Pasture <-> Lincoln Fields):** identified by OC Transpo as a "Local Route", this route operates on customized routing and schedules, to serve local destinations. Route #50 operates at an average rate of once every 30 minutes during weekdays. The nearest bus stops to the site are near the Carling/Clyde intersection for both Tunney's Pasture and Lincoln Fields destinations.
- Route #85 (Gatineau <-> Bayshore):** identified by OC Transpo as a "Frequent Route", this route operates at a high frequency along Carling Ave. Route #85 operates 7 days a week, at an average rate of every 15 minutes or less during weekday peak hours. The nearest bus stops to the site are the Carling/Cole stop for the Bayshore destination and the Carling/Clyde North stop, for the Gatineau destination.

OC Transpo route maps for routes #50 and #85 have been provided in **Appendix B. Figure 5** below illustrates the area transit network surrounding the subject site, while **Figure 6** provides the nearest bus stop locations to the development site in the form of blue dots.

Figure 5: Area Transit Network



Figure 6: Nearby Transit Stops



Peak Hour Travel Demands

Most study area intersection counts listed below have been obtained from the City of Ottawa, where they have been conducted between 2016 and 2019 (pre-COVID-19 conditions). Raw traffic count data has been provided in **Appendix C**.

- Carling/Churchill (City of Ottawa, conducted April 25, 2017).
- Carling/Clyde/Cole (City of Ottawa, conducted January 27, 2016). Note that:
 - A February 23, 2022, count was also obtained from the City. However, it was not used as the through volumes were significantly lower than the 2016 count due to ongoing construction along Carling Ave.
 - The EBR volume in the 2016 count was oddly low, therefore, it was replaced with the EBR volume in the 2022 count.
- Carling/Broadview (City of Ottawa, conducted April 20, 2017).
- Carling/Saigon N (City of Ottawa, conducted April 05, 2018).
- Carling/Saigon S (City of Ottawa, conducted April 05, 2018).
- Clyde/Doheny (City of Ottawa, conducted February 27, 2019).
- Clyde/Laperriere (City of Ottawa, conducted February 27, 2019).
- Clyde/Woodward (reference from the Novatech 2021 TIA Report for the adjacent future residential buildings development at 861 Clyde Ave).

After reviewing the existing traffic volumes, the east-west through volumes on Carling Ave were balanced conservatively to the higher adjacent intersection volume. The existing peak hour vehicle traffic and active travel volumes within the study area are illustrated in **Figure 7** and **Figure 8**, respectively.

It is important to note that all counts obtained were conducted in the months of January-April, in which pedestrian and cyclist volumes may be reduced due to the colder weather.

Figure 7: Existing Peak Hour Traffic Volumes (2022)

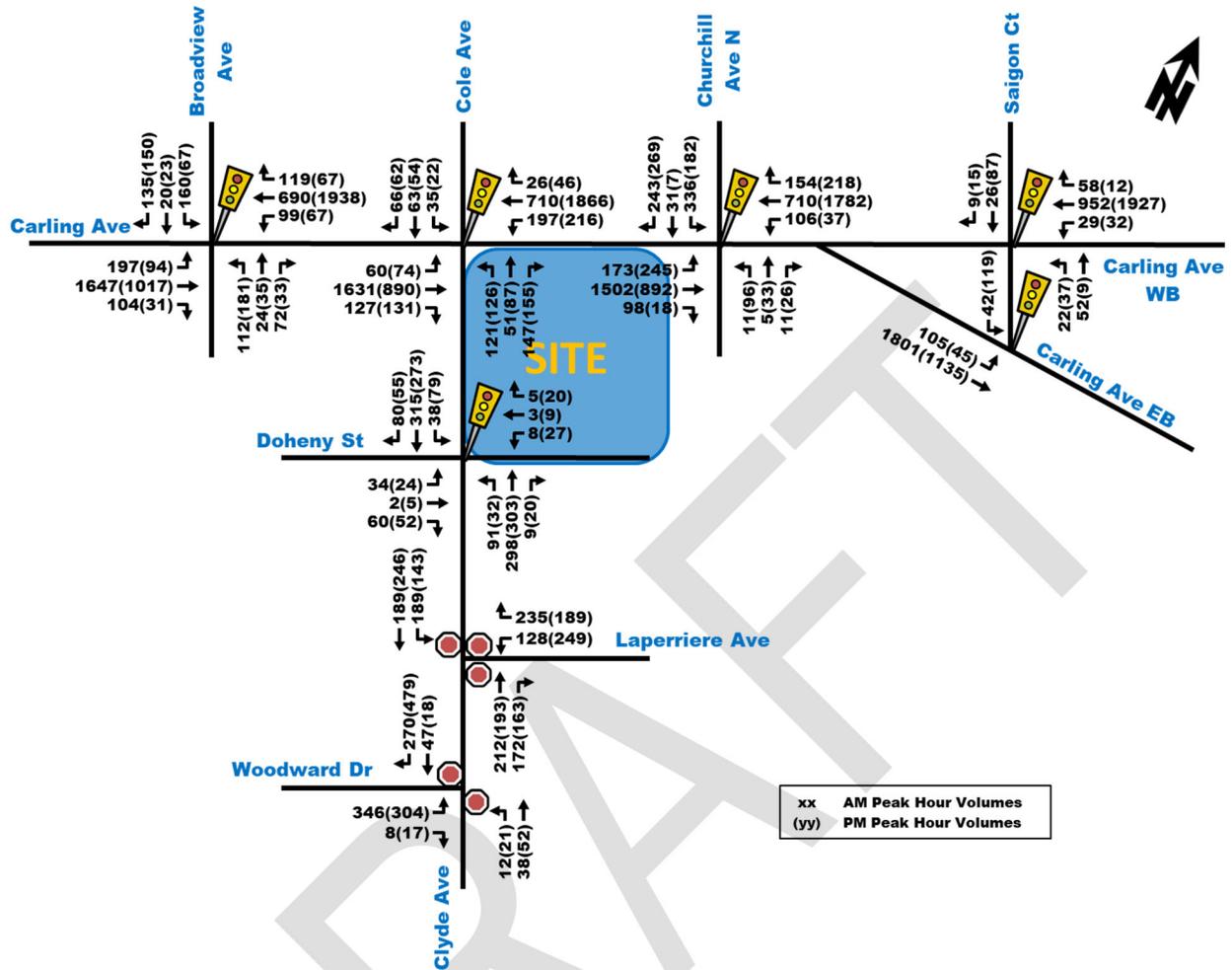
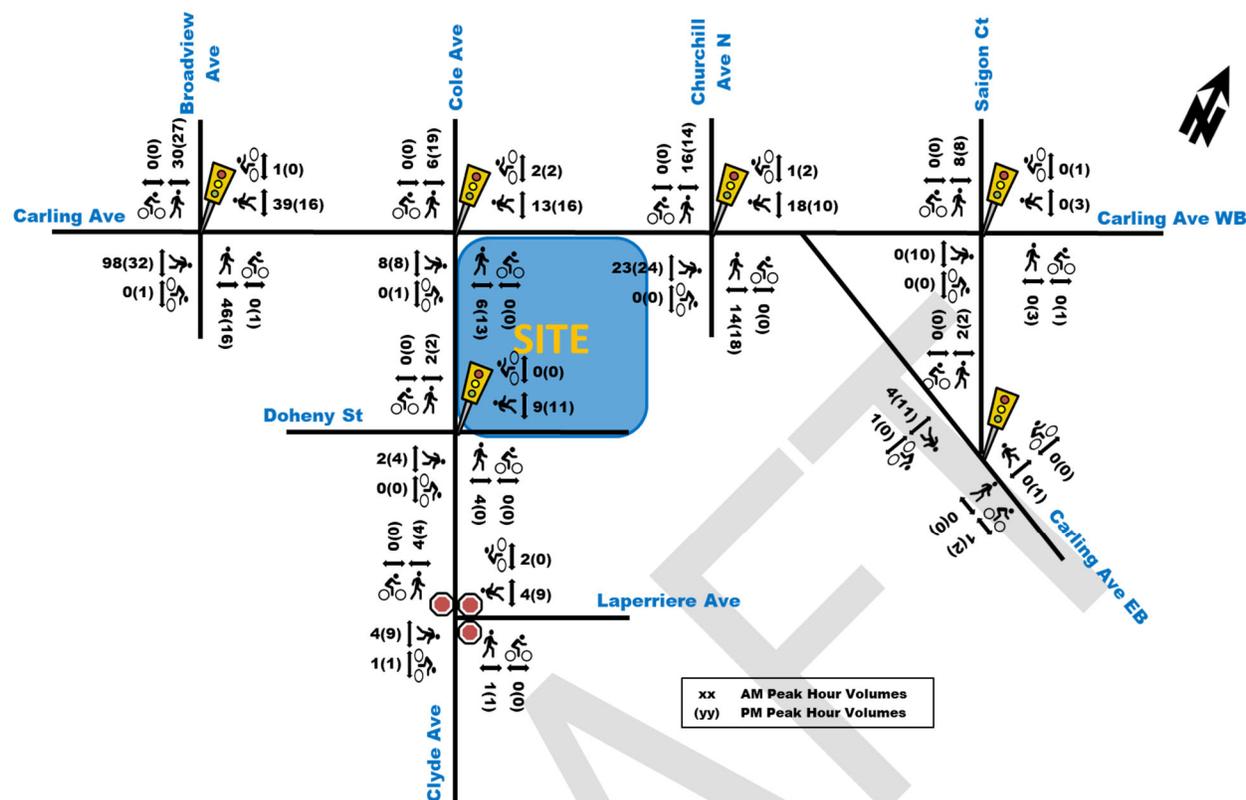


Figure 8: Existing Peak Hour Pedestrian/Cycling Volumes



Existing Road Safety Conditions

A five-year collision history data (2016-2020, inclusive) was requested and obtained from the City of Ottawa for intersections and road segments bordering/near the proposed development site. Collision data is provided in **Appendix D** with analysis conducted by Parsons. Upon analyzing the collision data, the total number of collisions observed within the study area was determined to be 99 collisions within the past five-years. The majority of the collisions (70 collisions, 83%) resulted in property damage only, while the remaining collisions resulted in a non-fatal injury. Furthermore, the type of impacts that resulted in 84 collisions were broken down into the following: 30 rear ends, 29 turning movements, 25 sideswipes, 7 angled, 7 single vehicle (other) and 1 “other”.

A standard unit of measure for assessing collisions at an intersection is based on the number of collisions per million entering vehicles (MEV), where a ratio of 1.0 or greater is considered critical. Additionally, the City of Ottawa TIA Guidelines identifies 7 or more collisions of the same impact type for a particular movement to be a collision pattern. At signalized intersections bordering the proposed development site, reported collisions have historically taken place at a rate of:

- 0.43 Collisions/MEV at the intersection of Carling/Churchill. A total of 30 collisions took place at this intersection within the five-year period. Although the Collisions/MEV is not in critical condition, a breakdown of collision data shows that 8 rear end collisions have occurred for the eastbound movement of the intersection. Most of those eastbound rear ends occurred from a vehicle “following too close” to another vehicle, which does not indicate a safety concern due to the intersection design.
- 0.82 Collisions/MEV at the intersection of Carling/Clyde/Cole. A total of 53 collisions took place at this intersection within the five-year period. Of these, 21 collisions occurred as a result of turning movements between the WB/EB left-turns and the opposing EB/WB through movements, respectively. The City of Ottawa Traffic Signal Operations Unit have indicated that these left turns are planned to be modified to be fully protected in 2022, as part of planned safety improvements. Therefore, it is expected that

potential conflicts as a result of the existing protected/permissive turn-type will be significantly reduced for these movements in the future.

- Additionally, three collisions involved non-fatal injuries for pedestrians at this intersection, where 1 collision occurred due to a northbound right-turn and 2 due to a northbound left-turn where vehicles failed to yield.
- One collision involved non-fatal injury to cyclist travelling westbound and a westbound right-turn vehicle failing to yield.
- Three collisions have occurred at the intersection of Clyde/Doheny.

Lastly, 13 collisions were observed along road segments at the frontage of the proposed development site, with 1 and 8 collisions in the westbound and eastbound lanes, respectively, along Carling Ave, between Clyde/Cole and Churchill, and 4 collisions on Clyde Ave, between Carling and Doheny.

2.1.3. Planned Conditions

Planned Study Area Transportation Network Changes

Transit Network

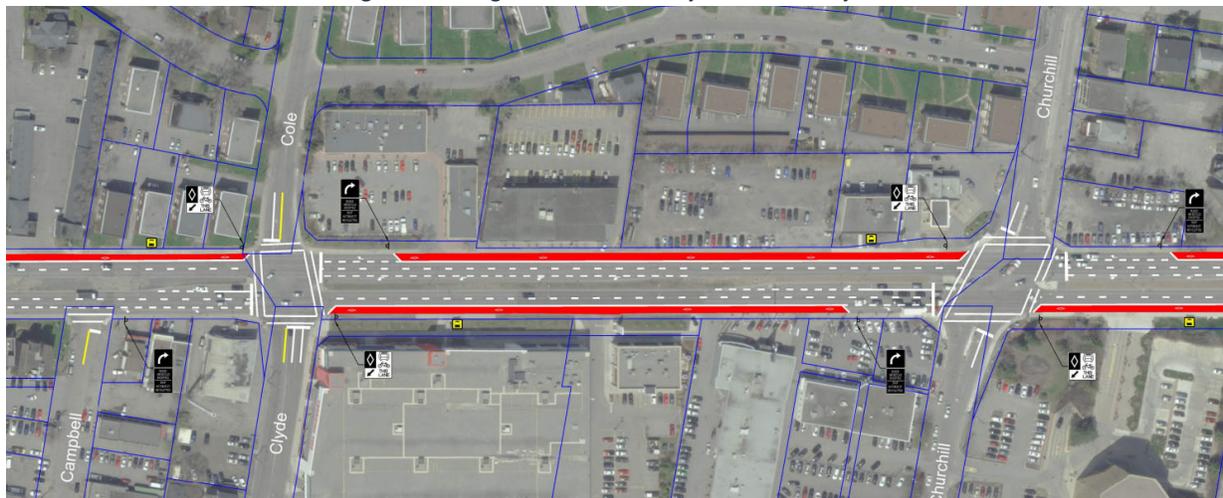
Based on the City of Ottawa's TMP, the 2031 Affordable Network for Rapid Transit and Transit Priority illustrates Carling Ave as a Transit Priority Corridor (Continuous Measures) at the frontage of the site, as shown by the solid blue line in **Figure 9**.

Figure 9: TMP Transit Affordable Network (Map 5)



The Carling Avenue Transit Priority project is currently underway to provide bus lanes along Carling Ave. The current plan within the vicinity of the site is shown as **Figure 10**, where bus lanes are illustrated in red. The plan is to convert a general traffic lane to a transit lane in both travel directions of Carling Ave, along different sections between Lincoln Fields and Bronson Ave. The timing of the planned modifications along Carling Ave are expected to take place by 2023 or soon after between Sherwood Dr and Fairlawn Ave, as confirmed by the City of Ottawa project manager, Stacey Rathwell.

Figure 10: Carling Avenue Transit Priority Plan within Study Area



Road Network

As part of an integrated road, water and sewer City project expected to take place in the study area over the next 2-3 years, it is anticipated that the intersection of Carling/Churchill will be designed as a protected intersection. Additionally, City staff have also specified that the eastbound and westbound left-turns at the intersection of Carling/Clyde/Cole will be modified to fully protected left-turn movements as part of planned safety improvements. The eastbound left-turn lane's storage length will be increased from 20m to 70m. Similarly, at the intersection of Carling/Broadview, the eastbound left-turn storage will be modified very slightly, while the westbound left-turn storage length will be increased from 50m to 75m.

The re-allocation of Carling Avenue ROW to a transit-focused environment is anticipated to result in a net reduction of east-west auto capacity, and therefore, auto volumes. This is discussed in more detail in **Section 3.3, Demand Rationalization**.

Cycling Network

There are no currently projected cycling plans in the study area.

Other Area Developments

The following section outlines adjacent developments in the general area that were considered in the TIA. The criteria for inclusion of other area developments are the proximity to the proposed development site and the potential impact to study area intersections. Developments that are either approved or have an active planning application in the City are included below.

861 Clyde Avenue North

A TIA was submitted by Novatech in May 2021 in support of an OPA and ZBLA application for a 3-phase residential development consisting of 23 townhouses and 1,712 apartment dwelling units. Full build-out of the development is forecast to generate 1,139 AM peak hour person trips and 1,188 PM peak hour person trips. The TIA has noted a significant impact to the Carling/Churchill intersection.

1619-1655 Carling Ave

A TIA was submitted by Parsons in May 2022 for a 16 and 18-storey two-tower building consisting of 418 residential units and 8,300ft² commercial space. The proposed development is expected to result in up to 116 'new' veh/h during peak hours. As such, traffic volumes generated by this development will be included in the future background volumes in this TIA report.

1705 Carling Ave

A TIA was submitted by Novatech in April 2020 for a 9-storey retirement home facility with 158 units and a 22-storey residential high-rise building with 194 units located at 1705 Carling Ave. As the site is currently occupied by an 80-unit motel and a 3500 ft² restaurant, the number of trips forecasted for the future development are expected to be less 25 veh/h during peak hours. Thus, trips for this development are minimal and will be accounted for in the future background traffic growth rate in this TIA report.

Additional Other Area Developments

Noted below are future developments located outside the study area, at distances of approximately 1.1 to 1.5km from the proposed development site. These developments will largely have a nominal impact on background traffic and is considered to be captured by background traffic growth rates in **Section 3.2.2**.

- **1995 Carling Ave:** 27-storey residential building with 210 units (2024 buildout).
- **1354-1376 Carling Ave:** Five high-rise buildings with 1,018 residential units (2023 buildout).
- **1330 Carling Ave and 815 Archibald St:** 24-storey residential building with 175 units (2023 buildout).

2.2. Study Area and Time Periods

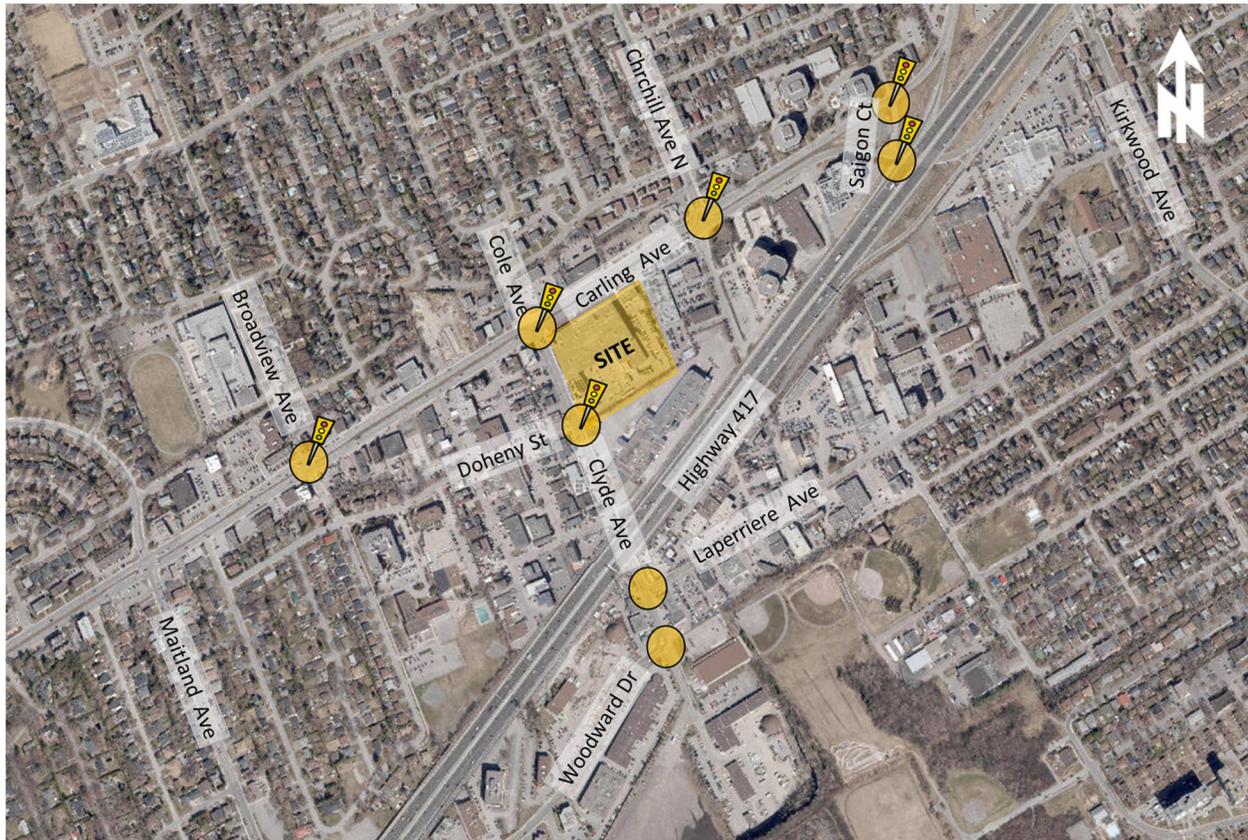
Proposed study area intersections and boundary roads are outlined below and highlighted in **Figure 11**. The study area reflects the urban nature of the development and its impact to Carling Avenue and Clyde Avenue. It is worthwhile to note that the first phase of the development is anticipated to have limited transportation implications beyond its boundary streets as the net change between the existing Canadian Tire Use and the residential use is expected to be minimal at a regional traffic level.

The proposed development is anticipated to proceed in multiple phases. For the purpose of this TIA, three phases are assumed, where Phase 1 is assumed to be constructed by 2026, Phase 2 by 2031 and Phase 3 by 2036. The TIA Guidelines typically require analysis of another horizon year at five-years after full buildout (i.e. 2041). However, the Phase 3 2036 horizon year is already five years beyond the 2031 limit of anticipated plans that the City of Ottawa TMP and affordable networks indicate for future City infrastructure. Furthermore, based on a review of the 861 Clyde Transportation Impact Assessment and of the Carling BRT forecast volumes, minimal growth is expected on Carling Avenue and Clyde Avenue beyond 2031. Therefore, additional analysis beyond Phase 3 2036 is considered redundant at this time and was not assessed in this TIA report. Considering the applicant is applying for a Site Plan Application in the future, there will be subsequent opportunities to assess the long-term transportation implications of this development, at which time there may be more clarity on the long-term plans for the City's transportation network beyond the 2036 horizon.

As such, the 2026, 2031 and 2036 horizon years will be analyzed using the weekday morning and afternoon peak hour time periods.

- Carling/Broadview (signalized)
- Carling/Clyde (signalized)
- Carling/Churchill (signalized)
- Carling/Saigon N (signalized)
- Carling/Saigon S (signalized)
- Clyde/Doheny (signalized)
- Clyde/Lapierre (unsignalized)
- Clyde/Woodward (unsignalized)
- Carling Ave, between Churchill Ave and Cole Ave/Clyde Ave
- Clyde Ave, between Carling Ave and Doheny St

Figure 11: Study Area Boundaries and Intersections



2.3. Exemption Review

The modules/elements of the TIA process provided in **Table 1** are recommended to be exempt in the subsequent steps of the TIA process, based on the City’s TIA guidelines and the application type.

Table 1: Exemptions Review Summary

| Module | Element | Exemption Consideration |
|-----------------------------------|--------------|---|
| 4.1 – 4.4 Design Review Component | All elements | Not required for applications involving ZBLA or OPA. However, a brief description will be provided. |
| 4.8 Network Concept | All elements | To be provided within the TIA |

3.0 FORECASTING REPORT

The following Forecasting Report has been revised to incorporate a third full build-out planning horizon. It is considered DRAFT as City comments have not been received from the November 18th, 2022 Step 3 submission.

3.1. Development Generated Travel Demand

3.1.1. Trip Generation and mode shares

Existing Trip Generation

As mentioned previously, the site currently consists of a Canadian Tire store and a Boston Pizza restaurant. The Canadian Tire store will be removed and replaced at Phase 1 of the proposed development, while the restaurant

is currently expected to remain at its location in Phases 1 and 2 and be replaced by full buildout in Phase 3. Note that the Canadian Tire store has already been closed as of September 2022, with a new location opened at Carlingwood Mall (approximately 2km to the west). Since the traffic counts in this TIA report were all conducted prior to the closure of the Canadian Tire, trips previously generated by the Canadian Tire store will be accounted for and reduced in the study area accordingly. Vehicle trips generated by the Boston Pizza restaurant will also be accounted for and included at the site accesses in Phases 1 and 2 during the afternoon peak hour only, given that it is closed during the morning peak hour.

The appropriate trip generation rates for the Canadian Tire store and Boston Pizza restaurant were obtained from the ITE Trip Generation Manual (11th edition) assuming the Department Store (ITE 875) and High-Turnover (Site-Down) Restaurant (ITE 932) land uses, respectively. The trip rates are provided in **Table 2**.

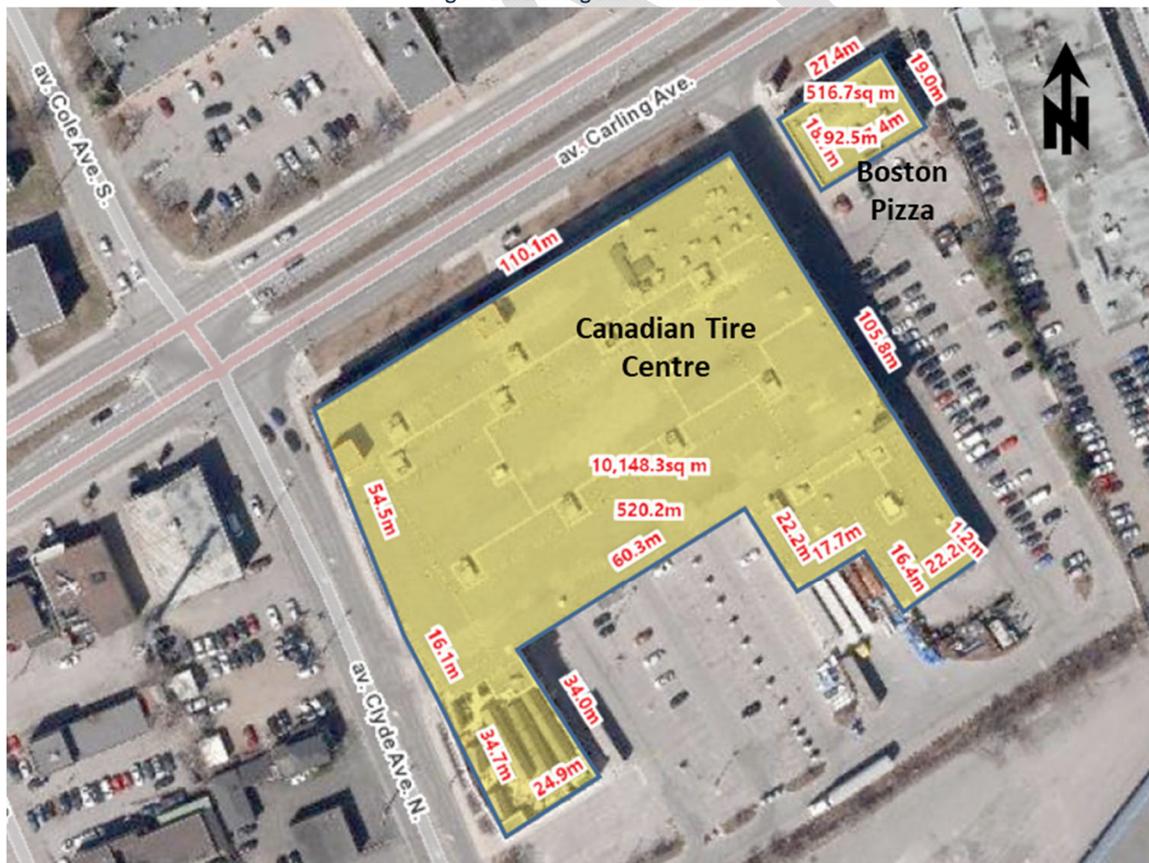
Table 2: Trip Rates for Existing Land Uses

| Land Use | Data Source | Trip Rates | |
|-------------------------------------|-------------|----------------|----------------|
| | | AM Peak Hour | PM Peak Hour |
| Department Store | ITE 875 | $T = 0.58(x);$ | $T = 1.95(x);$ |
| High-Turnover (Sit-Down) Restaurant | ITE 932 | - | $T = 9.05(x)$ |

Notes: T = Average Vehicle Trip Ends
x = Gross Floor Area (GFA) (1000 ft²)

The gross floor areas for the two buildings were determined using the GeoOttawa measuring tool, as shown in **Figure 12**. The Boston Pizza restaurant has an area of approximately 520m² (5,600ft²), while the Canadian Tire store has a total area of 18,200m² (195,900ft²) after factoring in the second floor's area.

Figure 12: Existing Land Uses Areas



Using the trip rates for the two existing land uses and the total gross floor areas, the person trips generated by the Canadian Tire Centre and Boston Pizza restaurant can be calculated. As per TIA standards, trip rates are multiplied by a factor of 1.28 to account for typical North American auto occupancy values of approximately 1.15 and combined transit and non-motorized modal shares of less than 10%. The resulting total person trips/hour for the two existing land uses are provided in **Table 3**, with inbound/outbound percentages obtained from the ITE Manual.

Table 3: Existing Land Uses Peak Hour Person Trips

| Land Use | Area (ft ²) | AM Peak (Person Trips/h) | | | PM Peak (Person Trips/h) | | |
|-------------------------------------|-------------------------|--------------------------|-----------|------------|--------------------------|------------|------------|
| | | In | Out | Total | In | Out | Total |
| Department Store | 195,900 | 92 | 53 | 145 | 244 | 245 | 489 |
| High-Turnover (Sit-Down) Restaurant | 5,600 | - | | | 39 | 26 | 65 |
| Total | 201,500 | 92 | 54 | 145 | 283 | 271 | 554 |

As shown in **Table 3**, the Canadian Tire store is expected to have generated a total of 145 and 489 person trips, during the morning and afternoon peak hours, respectively, while the Boston Pizza restaurant generates 65 person trips during the afternoon peak hour. It can be recognized that the Department Store use does not consider that the existing Canadian Tire site offers drive-in basic auto services which could lend to additional auto demands than the ITE forecast.

Mode shares for different travel modes were obtained from the 2020 TRANS Trip Generation Manual for Commercial Generators in the Ottawa West district. As such, a breakdown of the trips generated by the different travel modes is provided in **Table 4** for the Canadian Tire store and **Table 5** for the Boston Pizza restaurant.

Table 4: Existing Canadian Tire Peak Hour Travel Modes

| Travel Mode | Mode Shares | AM Peak (Person Trips/h) | | | Mode Shares | PM Peak (Person Trips/h) | | |
|---------------------------|-------------|--------------------------|-----------|------------|-------------|--------------------------|------------|------------|
| | | In (64%) | Out (36%) | Total | | In (50%) | Out (50%) | Total |
| Auto Driver | 55% | 51 | 29 | 80 | 50% | 123 | 123 | 247 |
| Passenger | 11% | 10 | 6 | 16 | 16% | 39 | 39 | 79 |
| Transit | 11% | 10 | 6 | 16 | 10% | 26 | 26 | 51 |
| Bike | 0% | 0 | 0 | 0 | 5% | 11 | 11 | 22 |
| Walk | 23% | 22 | 12 | 34 | 18% | 45 | 45 | 90 |
| Total Person Trips | 100% | 93 | 52 | 145 | 100% | 245 | 245 | 489 |

Table 5: Existing Boston Pizza Peak Hour Travel Modes

| Travel Mode | Mode Shares | PM Peak (Person Trips/h) | | |
|---------------------------|-------------|--------------------------|-----------|-----------|
| | | In (61%) | Out (39%) | Total |
| Auto Driver | 50% | 20 | 13 | 33 |
| Passenger | 16% | 6 | 4 | 10 |
| Transit | 10% | 4 | 3 | 7 |
| Bike | 5% | 2 | 1 | 3 |
| Walk | 18% | 7 | 5 | 12 |
| Total Person Trips | 100% | 40 | 25 | 65 |

Based on the tables above, the Canadian Tire store generates 80 to 247 vehicle trips, 16 to 79 passenger trips, 16 to 51 transit trips, up to 22 cyclist trips and 34 to 90 pedestrian trips during the morning and afternoon peak hours. The Boston Pizza restaurant generates up to 33 vehicle trips, 10 passenger trips, 7 transit trips, 3 cyclist trips and 12 pedestrian trips during the afternoon peak hour.

While it could be reasonable to assume that the Boston Pizza mode shares would trend to a great share of walking trips internal to the subdivision, to remain conservative, the existing mode shares were maintained for the future analysis.

Proposed Development Trip Generation

The proposed development will replace the previous Canadian Tire store with six high-rise buildings ranging from 9 to 40-storeys high and providing approximately 1,700 residential units at full buildout (2036). Phase 1 is assumed to be constructed by 2026 and is expected to consist of approximately 810 residential units located in the northwest quadrant of the site, while Phase 2 is assumed to be constructed by 2031 and is expected to consist of approximately 691 residential units in the south and southeast quadrants. Phase 3 (full buildout) is assumed to be constructed by 2036 and is expected to consist of approximately 214 residential units in the northeast quadrant of the site. The Boston Pizza is expected to remain in-place until Phase 3 of the subdivision is initiated.

Plans to provide first floor commercial space are not confirmed at this time. However, the site is anticipated to accommodate ancillary uses for the high-density residential units and are expected to be intended for local residents, community and potentially some pass-by traffic. As such, it is not expected to be a regional attraction and is not anticipated to generate new site trips over and above that of the residential.

The appropriate trip generation rates for high-rise residential units land uses were obtained from the 2020 TRANS Trip Generation Manual. The Manual provides person-trip rates during the peak AM and PM periods (7am-9:30am and 3:30PM-6PM). The trip rates are summarized in **Table 6** below.

Table 6: High-Rise Residential Units Trip Rates

| Land Use | Data Source | Trip Rates | |
|--|-------------|---------------------------|---------------------------|
| | | AM Peak Period (7-9:30am) | PM Peak Period (3:30-6pm) |
| High-Rise Residential Units | TRANS 2020 | T = 0.8(du); | T = 0.9(du); |
| Notes: T = Average Vehicle Trip Ends du = Dwelling unit | | | |

Using the trip rates provided in **Table 6**, the total number of person trips expected to be generated during the morning and afternoon peak periods can be found in **Table 7**.

Table 7: Apartment Units Peak Period Person Trip Generation

| Land Use | Phase | Total Dwelling Units | AM Peak Period Person Trips | PM Peak Period Person Trips |
|----------------------|----------------------|----------------------|-----------------------------|-----------------------------|
| High-Rise Apartments | Phase 1 (2026) | 810 | 648 | 729 |
| | Phase 2 (2031) | 1,501 | 1,201 | 1,351 |
| | Full Buildout (2036) | 1,715 | 1,372 | 1,544 |

The proposed development is anticipated to generate 648 and 729 person trips at Phase 1, 1,201 and 1,351 person trips at Phase 2 and 1,372 and 1,544 at full buildout, during the morning and afternoon peak periods respectively. The total peak period person trips in **Table 7** are then divided into different travel modes using mode share percentages obtained from the 2020 TRANS Manual for the “Ottawa West” district. **Table 8**, **Table 9** and **Table 10** provide the travel mode breakdown for the proposed buildings in all phases.

The “Ottawa West” mode shares specific to high rise developments were adopted **without adjusting for the future Carling BRT corridor** which could influence additional transit demand in favour of auto demand. Therefore, the mode shares presented are conservative in favour of the auto vehicle impact to adjacent roadway infrastructure.

Table 8: Phase 1 Residential Peak Period Trips Mode Share Breakdown

| Travel Mode | Mode Share | AM Peak Period Person Trip | Mode Share | PM Peak Period Person Trips |
|---------------------------|-------------|----------------------------|-------------|-----------------------------|
| Auto Driver | 28% | 185 | 33% | 240 |
| Auto Passenger | 11% | 74 | 11% | 83 |
| Transit | 41% | 267 | 26% | 186 |
| Cycling | 3% | 21 | 7% | 50 |
| Walking | 16% | 101 | 23% | 169 |
| Total Person Trips | 100% | 648 | 100% | 729 |

Table 9: Phase 2 Residential Peak Period Trips Mode Share Breakdown

| Travel Mode | Mode Share | AM Peak Period Person Trip | Mode Share | PM Peak Period Person Trips |
|---------------------------|-------------|----------------------------|-------------|-----------------------------|
| Auto Driver | 28% | 342 | 33% | 444 |
| Auto Passenger | 11% | 137 | 11% | 155 |
| Transit | 41% | 494 | 26% | 345 |
| Cycling | 3% | 39 | 7% | 92 |
| Walking | 16% | 188 | 23% | 314 |
| Total Person Trips | 100% | 1,201 | 100% | 1,351 |

Table 10: Full Buildout Residential Peak Period Trips Mode Shares Breakdown

| Travel Mode | Mode Share | AM Peak Period Person Trip | Mode Share | PM Peak Period Person Trips |
|---------------------------|-------------|----------------------------|-------------|-----------------------------|
| Auto Driver | 28% | 391 | 33% | 508 |
| Auto Passenger | 11% | 157 | 11% | 177 |
| Transit | 41% | 564 | 26% | 395 |
| Cycling | 3% | 45 | 7% | 105 |
| Walking | 16% | 215 | 23% | 359 |
| Total Person Trips | 100% | 1,372 | 100% | 1,544 |

Standard traffic analysis is usually conducted using the morning and afternoon peak hour trips as they represent a worst-case scenario. In the 2020 TRANS Manual, conversion rates from peak period to peak hours for different mode shares are provided as shown in **Table 11** below.

Table 11: Peak Period to Peak Hour Conversion Factors (2020 TRANS Manual)

| Travel Mode | Peak Period to Peak Hour Conversion Factors | |
|---------------------------|---|------|
| | AM | PM |
| Auto Driver and Passenger | 0.48 | 0.44 |
| Transit | 0.55 | 0.47 |
| Bike | 0.58 | 0.48 |
| Walk | 0.58 | 0.52 |

Using the conversion rates in **Table 11** and the peak period person trips for different travel modes in **Table 8**, **Table 9** and **Table 10**, the peak hour trips for different travel modes can be calculated as shown in **Table 12**, **Table 13** and **Table 14**.

Table 12: Phase 1 Residential Peak Hour Trips Mode Share Breakdown

| Travel Mode | AM Peak Hour Trips | PM Peak Hour Trips |
|---------------------------|--------------------|--------------------|
| Auto Driver | 89 | 106 |
| Auto Passenger | 36 | 37 |
| Transit | 147 | 88 |
| Cycling | 12 | 24 |
| Walking | 59 | 88 |
| Total Person Trips | 342 | 342 |

Table 13: Phase 2 Residential Peak Hour Trips Mode Share Breakdown

| Travel Mode | AM Peak Hour Trips | PM Peak Hour Trips |
|---------------------------|--------------------|--------------------|
| Auto Driver | 164 | 196 |
| Auto Passenger | 66 | 68 |
| Transit | 272 | 162 |
| Cycling | 23 | 44 |
| Walking | 109 | 163 |
| Total Person Trips | 634 | 634 |

Table 14: Full Buildout Residential Peak Hour Trips Mode Share Breakdown

| Travel Mode | AM Peak Hour Trips | PM Peak Hour Trips |
|----------------|--------------------|--------------------|
| Auto Driver | 188 | 223 |
| Auto Passenger | 75 | 78 |
| Transit | 310 | 186 |
| Cycling | 26 | 51 |

| | | |
|---------------------------|------------|------------|
| Walking | 125 | 187 |
| Total Person Trips | 724 | 724 |

As shown in **Table 12**, **Table 13** and **Table 14**, the proposed development is anticipated to generate a total of 342 person trips at Phase 1, 634 person trips at Phase 2 and 724 person trips at full buildout, during the morning and afternoon peak hours. Inbound and outbound percentages were obtained from the 2020 TRANS Manual and applied to each travel mode as shown in **Table 15**, **Table 16** and **Table 17**.

Table 15: Phase 1 Residential Land Use Trip Generation

| Travel Mode | AM Peak (Person Trips/h) | | | PM Peak (Person Trips/h) | | |
|---------------------------|--------------------------|------------|------------|--------------------------|------------|------------|
| | In (31%) | Out (69%) | Total | In (58%) | Out (42%) | Total |
| Auto Driver | 27 | 61 | 89 | 61 | 44 | 106 |
| Passenger | 11 | 25 | 36 | 21 | 15 | 37 |
| Transit | 45 | 101 | 147 | 51 | 37 | 88 |
| Cycling | 4 | 8 | 12 | 14 | 10 | 24 |
| Walk | 18 | 41 | 59 | 51 | 37 | 88 |
| Total Person Trips | 106 | 236 | 342 | 198 | 144 | 342 |

Table 16: Phase 2 Residential Land Use Trip Generation

| Travel Mode | AM Peak (Person Trips/h) | | | PM Peak (Person Trips/h) | | |
|---------------------------|--------------------------|------------|------------|--------------------------|------------|------------|
| | In (31%) | Out (69%) | Total | In (58%) | Out (42%) | Total |
| Auto Driver | 51 | 113 | 164 | 113 | 82 | 196 |
| Passenger | 20 | 46 | 66 | 39 | 29 | 68 |
| Transit | 84 | 187 | 272 | 94 | 68 | 162 |
| Cycling | 7 | 16 | 23 | 26 | 19 | 44 |
| Walk | 34 | 75 | 109 | 95 | 69 | 163 |
| Total Person Trips | 196 | 437 | 634 | 367 | 266 | 634 |

Table 17: Full Buildout Residential Land Use Trip Generation

| Travel Mode | AM Peak (Person Trips/h) | | | PM Peak (Person Trips/h) | | |
|---------------------------|--------------------------|------------|------------|--------------------------|------------|------------|
| | In (31%) | Out (69%) | Total | In (58%) | Out (42%) | Total |
| Auto Driver | 58 | 129 | 188 | 130 | 94 | 223 |
| Passenger | 23 | 52 | 75 | 45 | 33 | 78 |
| Transit | 96 | 214 | 310 | 108 | 78 | 186 |
| Cycling | 8 | 18 | 26 | 29 | 21 | 51 |
| Walk | 39 | 86 | 125 | 108 | 78 | 187 |
| Total Person Trips | 224 | 500 | 724 | 420 | 304 | 724 |

As shown in **Table 15**, after occupancy of the Phase 1 residential buildings, the proposed development is anticipated to generate up to 106 vehicle trips, 147 transit trips and 112 Active Transport (walking and cycling) trips, during the morning and afternoon peak hours. As shown in **Table 16**, after occupancy of the Phase 2 residential buildings, the proposed development is anticipated to generate up to 196 vehicle trips, 272 transit trips and 207 Active Transport (walking and cycling) trips, during the morning and afternoon peak hours. As shown in **Table 17**, at full buildout the proposed development is anticipated to generate up to 223 vehicle trips, 310 transit trips and 238 Active Transport (walking and cycling) trips, during the morning and afternoon peak hours.

Net Total Trips Generated

To determine the number of net 'new' trips anticipated to be generated by the development site in the future, trips previously generated by the existing Canadian Tire store (**Table 4**) will be considered a reduction in all phases, while trips generated by the existing Boston Pizza restaurant (**Table 5**) are added to the trips anticipated to be generated by the proposed future residential development in Phases 1 and 2 (**Table 15** and **Table 16**) and removed at full buildout (**Table 17**). This results in the net 'new' site generated trips of the proposed development presented in **Table 18** for Phase 1 (2026), **Table 19** for Phase 2 (2031) and **Table 20** for full buildout (2036).

Table 18: Phase 1 (2026) Net Total Trip Generation – With Boston Pizza / Without Canadian Tire

| Travel Mode | AM Peak (Person Trips/h) | | | PM Peak (Person Trips/h) | | |
|---------------------------|--------------------------|------------|------------|--------------------------|------------|------------|
| | In | Out | Total | In | Out | Total |
| Auto Driver | -24 | 32 | 9 | -42 | -66 | -108 |
| Passenger | 1 | 19 | 20 | -12 | -20 | -32 |
| Transit | 35 | 95 | 131 | 29 | 14 | 44 |
| Cycling | 4 | 8 | 12 | 5 | 0 | 5 |
| Walk | -4 | 29 | 25 | 13 | -3 | 10 |
| Total Person Trips | 13 | 184 | 197 | -7 | -76 | -82 |

Table 19: Phase 2 (2031) Net Total Trip Generation – With Boston Pizza / Without Canadian Tire

| Travel Mode | AM Peak (Person Trips/h) | | | PM Peak (Person Trips/h) | | |
|---------------------------|--------------------------|------------|------------|--------------------------|-----------|------------|
| | In | Out | Total | In | Out | Total |
| Auto Driver | 0 | 84 | 84 | 10 | -28 | -18 |
| Passenger | 10 | 40 | 50 | 6 | -6 | -1 |
| Transit | 74 | 181 | 256 | 72 | 45 | 118 |
| Cycling | 7 | 16 | 23 | 17 | 9 | 25 |
| Walk | 12 | 63 | 75 | 57 | 29 | 85 |
| Total Person Trips | 103 | 385 | 489 | 162 | 46 | 210 |

Table 20: Full Buildout (2036) Net Total Trip Generation – Without Boston Pizza / Without Canadian Tire

| Travel Mode | AM Peak (Person Trips/h) | | | PM Peak (Person Trips/h) | | |
|---------------------------|--------------------------|------------|------------|--------------------------|-----------|------------|
| | In | Out | Total | In | Out | Total |
| Auto Driver | 7 | 100 | 108 | -13 | -42 | -57 |
| Passenger | 13 | 46 | 59 | 0 | -10 | -11 |
| Transit | 86 | 208 | 294 | 78 | 49 | 128 |
| Cycling | 8 | 18 | 26 | 16 | 9 | 26 |
| Walk | 17 | 74 | 91 | 56 | 28 | 85 |
| Total Person Trips | 131 | 448 | 579 | 135 | 34 | 170 |

As shown in the tables above, the difference in trips between the existing and proposed land uses results in a significant reduction to the site generated vehicle trips, where a net negative number of vehicle trips will be generated for all phases during the afternoon peak hour. During the morning peak hour, up to approximately 108 new vehicle trips are anticipated by full buildout. The highest number of new trips are being generated by the transit mode share, with up to 294 and 128 new trips during the morning afternoon peak hours by full buildout.

3.1.2. Trip Distribution and Assignment

Based on the 2011 OD Survey (Ottawa West district), the site-generated commuter traffic (i.e. vehicles travelling to work in the AM peak hour and back from work in the PM peak hour) was estimated to have the following distribution:

- 10% to/from the north using Churchill Ave or Broadview Ave;
- 30% to/from the south using Woodward Ave and Highway 417;
- 35% to/from the east using Carling Ave or Highway 417; and,
- 25% to/from the west using Carling Ave or Highway 417.

The anticipated site-generated auto trips for the proposed building from **Table 15**, **Table 16** and **Table 17** were then assigned to the road networks as shown in **Figure 13** (Phase 1), **Figure 14** (Phase 2) and **Figure 15** (full buildout). The net site-generated auto trips from **Table 18**, **Table 19** and **Table 20** were also assigned to the road networks as shown in **Figure 16** (Phase 1), **Figure 17** (Phase 2) and **Figure 18** (full buildout).

Note that prior to being replaced at full buildout, the Boston Pizza restaurant is expected to be accessed using the proposed north-south internal public street of the proposed development.

Figure 13: Phase 1 Proposed Development Site-Generated Traffic

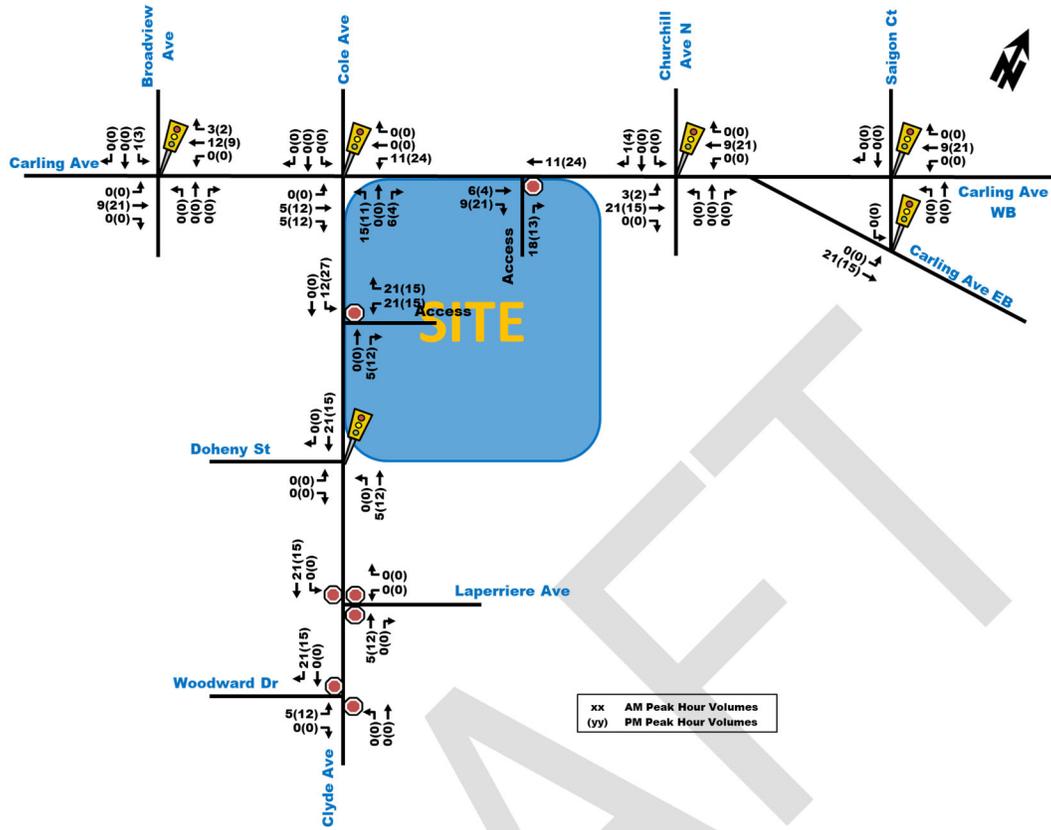


Figure 14: Phase 2 Proposed Development Site-Generated Traffic

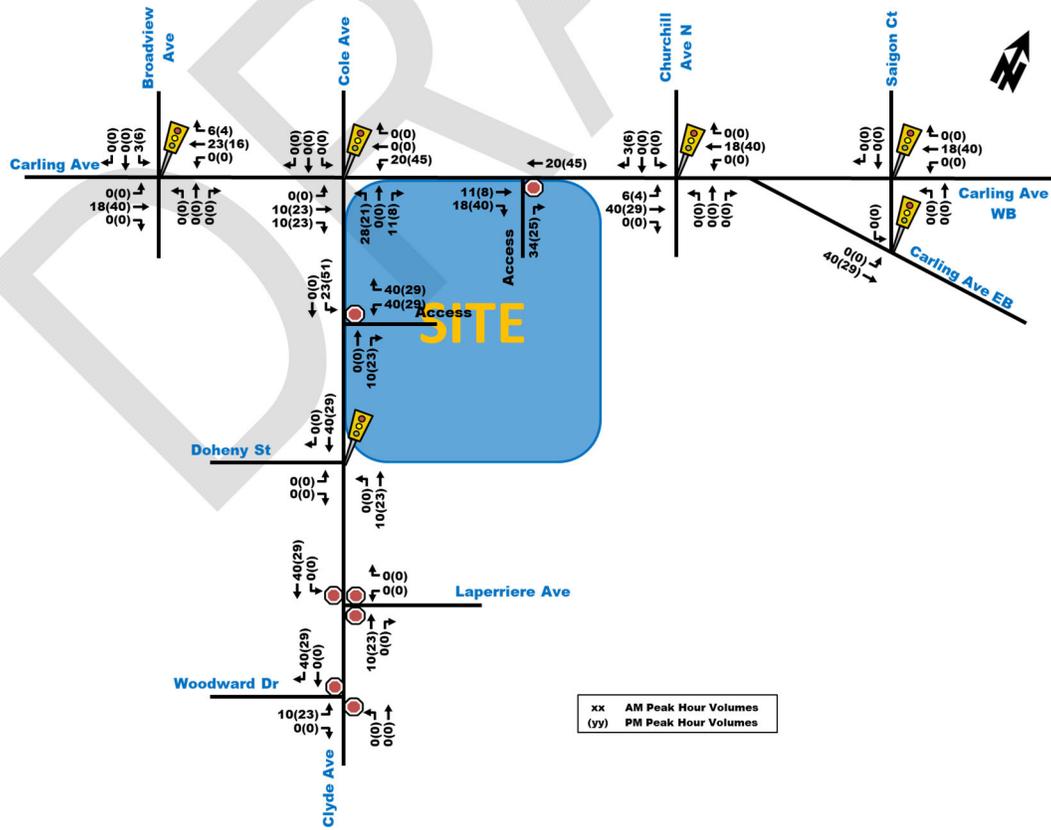


Figure 15: Full Buildout Proposed Development Site-Generated Traffic

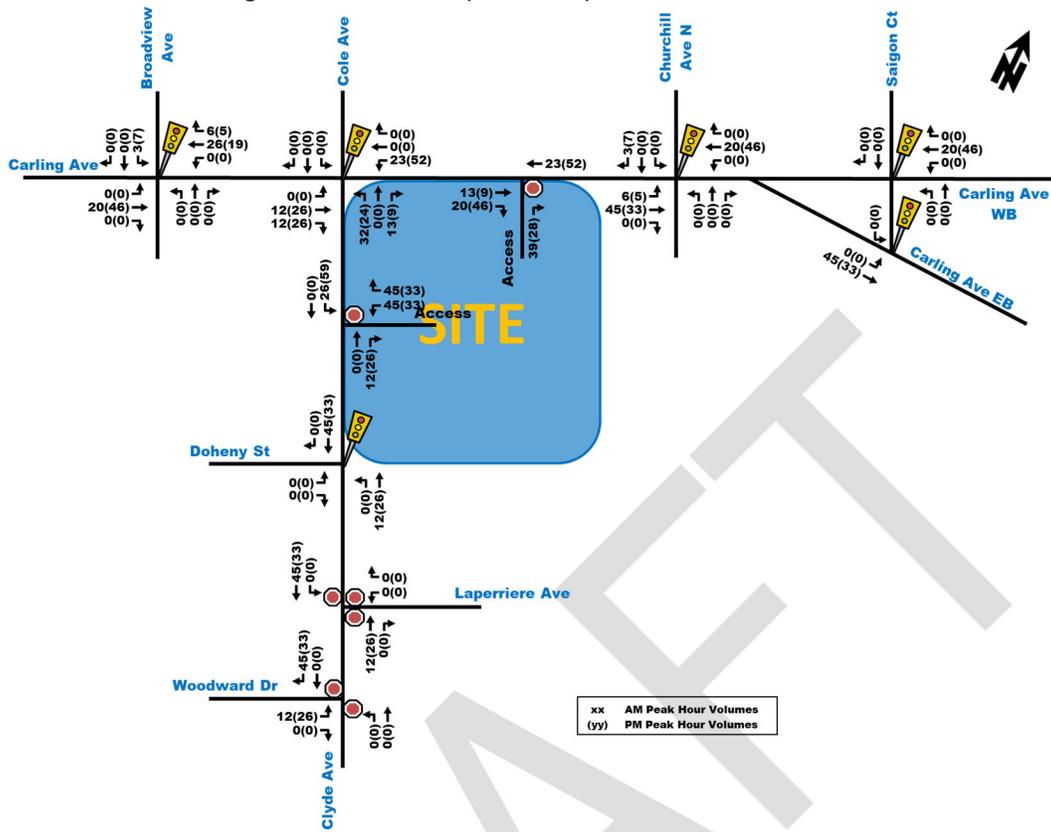


Figure 16: Phase 1 Net Site-Generated Traffic

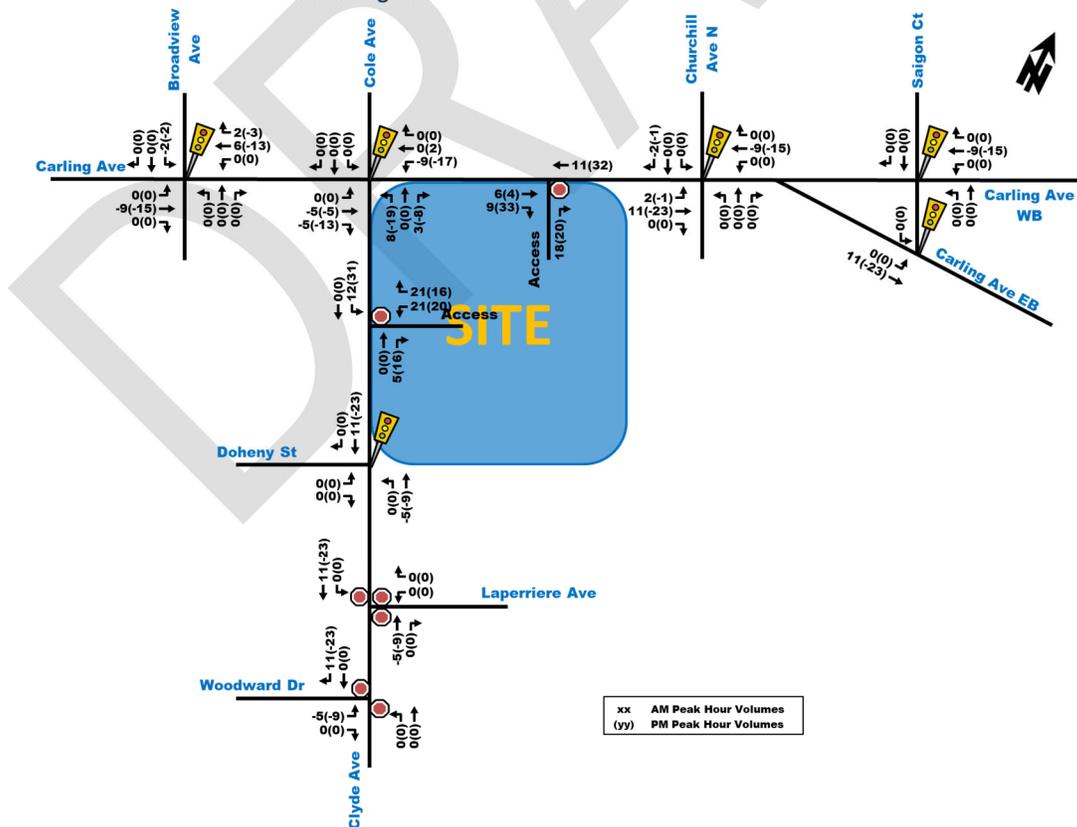


Figure 17: Phase 2 Net Site-Generated Traffic

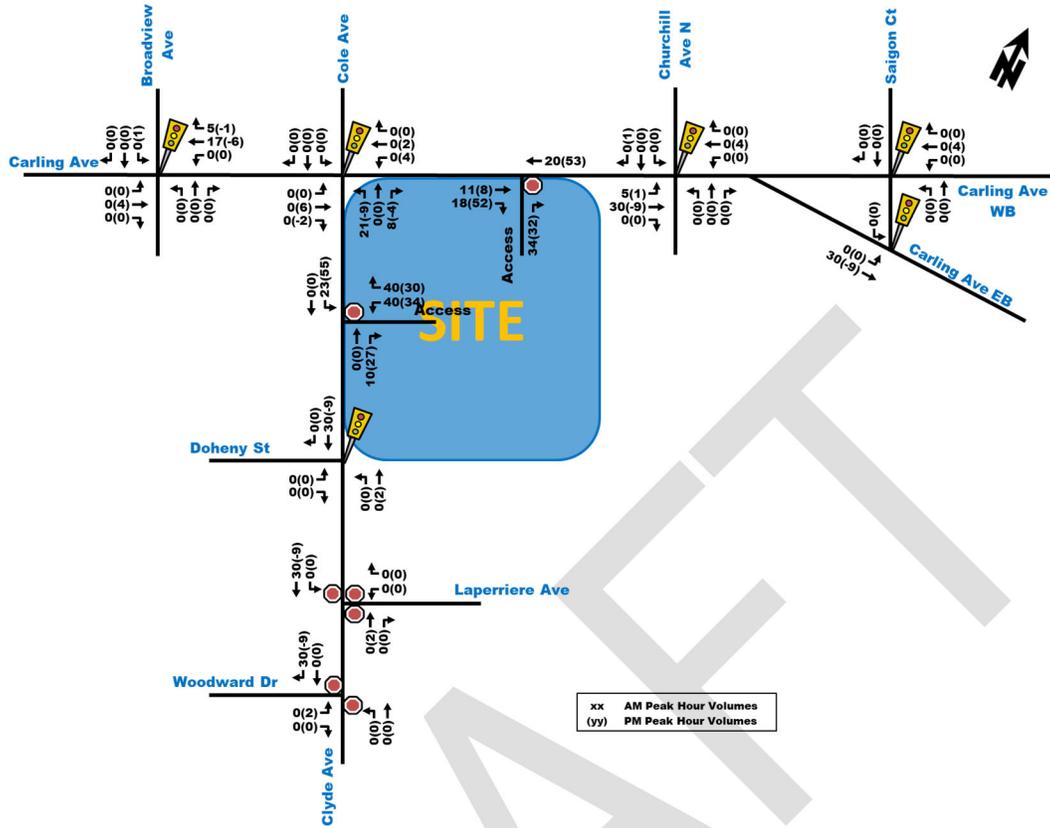
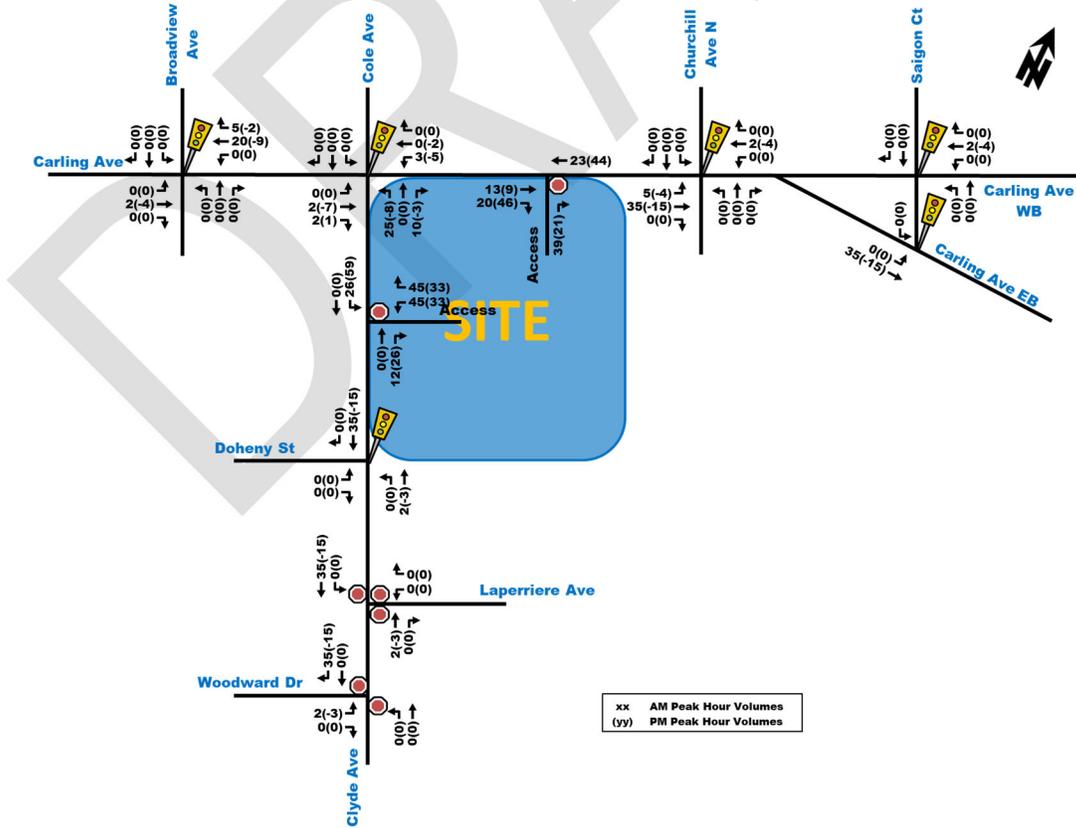


Figure 18: Full Buildout Net Site-Generated Traffic



3.2. Background Network Traffic

3.2.1. Transportation network plans

Refer to **Section 2.1.3: Planned Study Area Transportation Network Changes** for a summary of all future modifications anticipated within the study area. The following modifications are expected prior to construction of proposed development:

- Carling Transit Priority project, where a vehicle lane in both directions will be converted to a dedicated bus lane.
- The intersection of Carling/Churchill will be designed as a protected intersection.
- The eastbound and westbound left-turns at the intersection of Carling/Clyde/Cole will be modified to fully protected left-turn movements. The eastbound left-turn storage length will be increased from 20m to 70m.
- The westbound left-turn storage length at Carling/Broadview will be increased from 50m to 75m.

3.2.2. Background Growth

Historic traffic data as shown in **Figure 19** indicates that study area intersections have seen a traffic decline during the morning peak period. It is possible that such a trend in traffic will continue in the future given that transit will be improved along Carling Ave through the implementation of dedicated bus lanes, which may result in increased transit usage and decreased general traffic volumes. Furthermore, the reduced lane capacity from three to two lanes along Carling Ave may naturally deter some traffic to use adjacent alternate routes such as the Highway 417. Therefore, future east-west peak hour auto demand will likely be lower as a result.

However, there exists worst-case scenario where future developments are expected to be constructed outside of and within the study area along Carling Ave in the coming years, and no shift in traffic occurs. This could result in a conservative assumption of a 1% per year background growth rate between horizon years 2026 and 2031, for the through movements along Carling Ave to account for the influence of those developments and the lack of inherent demand rationalization. These worst-case future background 2026 and 2031 traffic volumes are illustrated in **Figure 20** and **Figure 21**. As mentioned, this growth rate is not expected to occur in the case where sufficient demand shifts from the corridor. For horizon year 2036, no background growth rate is being assumed between 2031 and 2036, therefore, future background 2036 volumes are assumed to be the same as 2031.

Figure 19: Traffic Growth Rates at City of Ottawa Intersections

INTERSECTION TRAFFIC GROWTH RATES, AM PEAK PERIOD (0700 to 0900) Total Vehicular Volume Entering the Intersection, 1995 to 2013, Scenario F AM 2

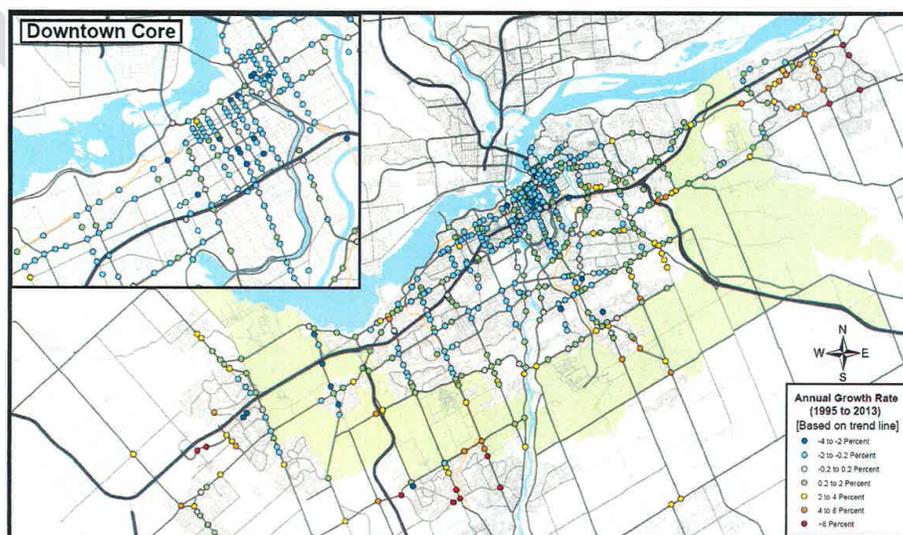


Figure 20: Future Background 2026 Traffic Volumes – Without Demand Rationalization

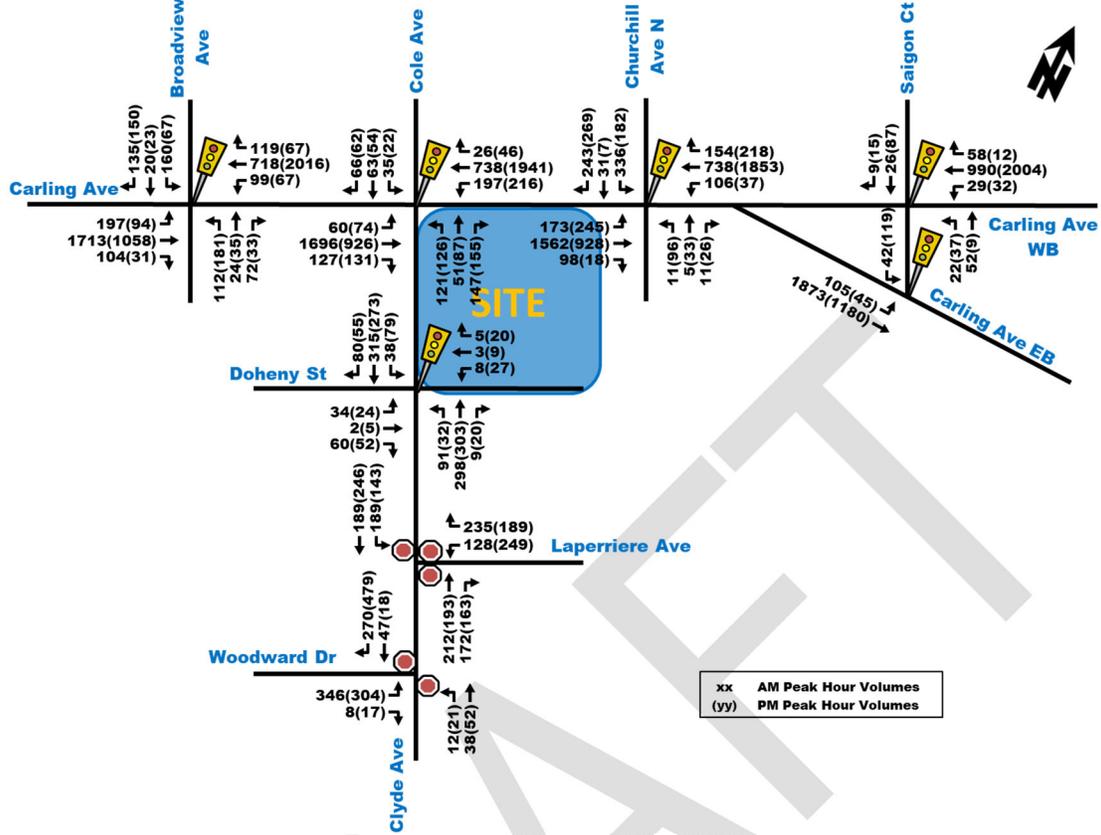
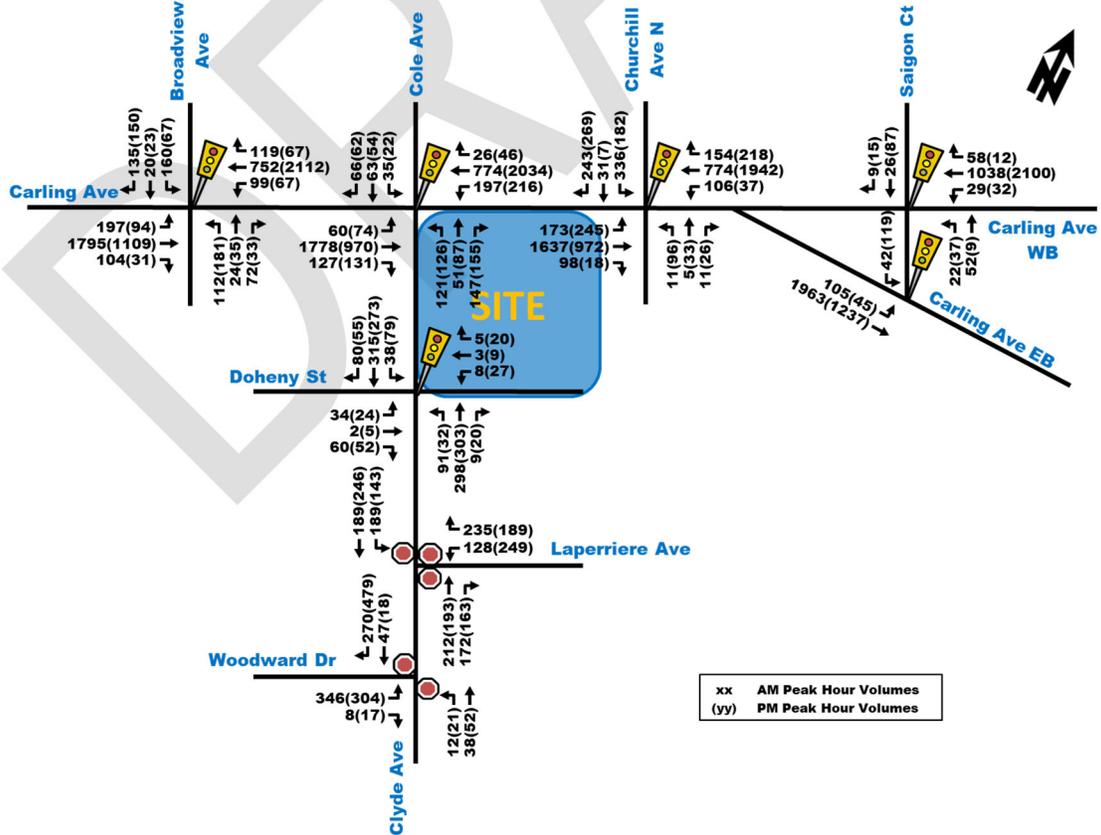


Figure 21: Future Background 2031 and 2036 Traffic Volumes – Without Demand Rationalization



3.2.3. Other Developments

Description of other area developments taking place within the study area was provided in **Section 2.1.3: Other Area Developments**. Traffic volumes anticipated to be generated by the two future adjacent developments at 861 Clyde Ave and 1619-1655 Carling Ave are being included in study area volumes as shown in **Figure 22** for Phase 1 of the 861 Clyde Ave development (access along Churchill Ave only) and **Figure 23** for full buildout of the 861 Clyde Ave development (access along both Churchill Ave and Clyde Ave). Site-generated volume figure excerpts from the respective TIAs have been provided in **Appendix E**. Note that WBL volumes at the intersection of Carling/Clyde are expected to consist of U-turns mainly.

Total future background 2026, 2031 and 2036 volumes are illustrated in **Figure 24**, **Figure 25** and **Figure 26**, where the adjacent development volumes in **Figure 22** were added to the future background 2026 and 2031 volumes in **Figure 20** and **Figure 21**, and the adjacent development volumes in **Figure 23** were added to the future background 2036 volumes also in **Figure 21**.

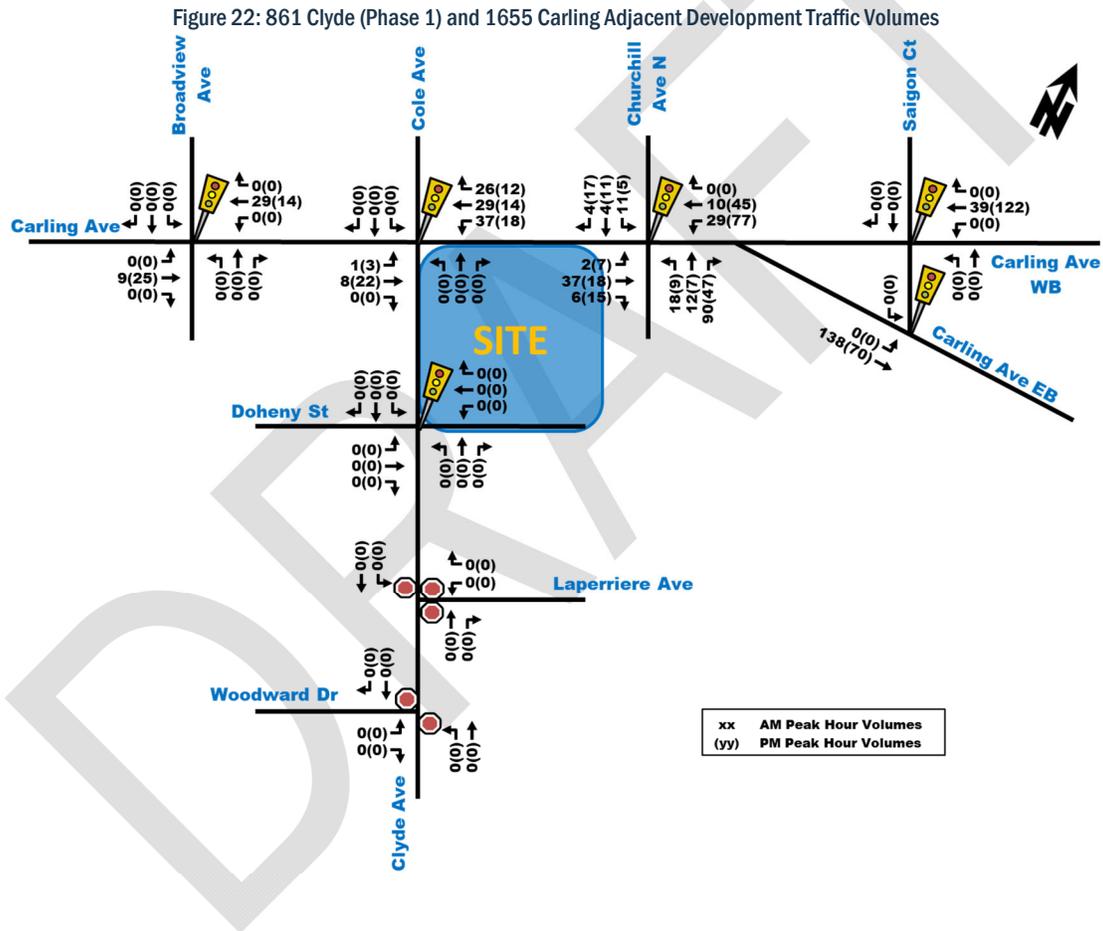


Figure 23: 861 Clyde (Full Buildout) and 1655 Carling Adjacent Development Traffic Volumes

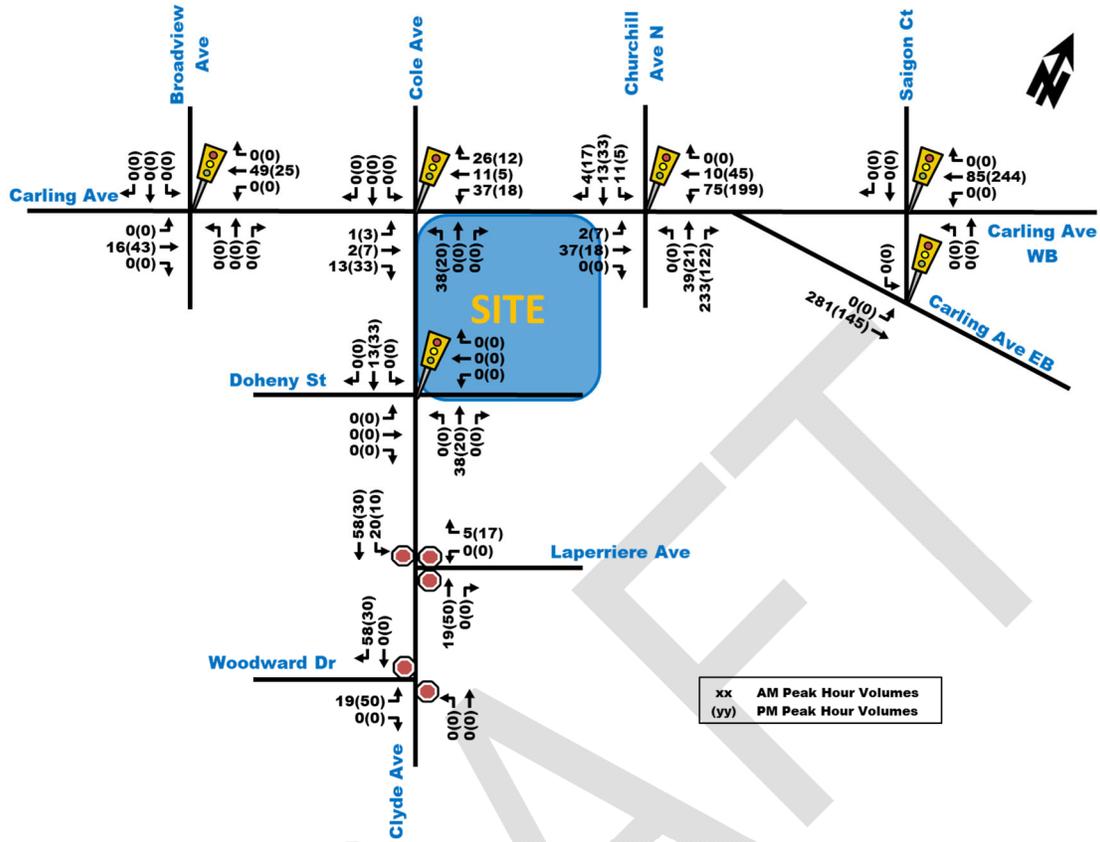


Figure 24: Total Future Background 2026 Traffic Volumes

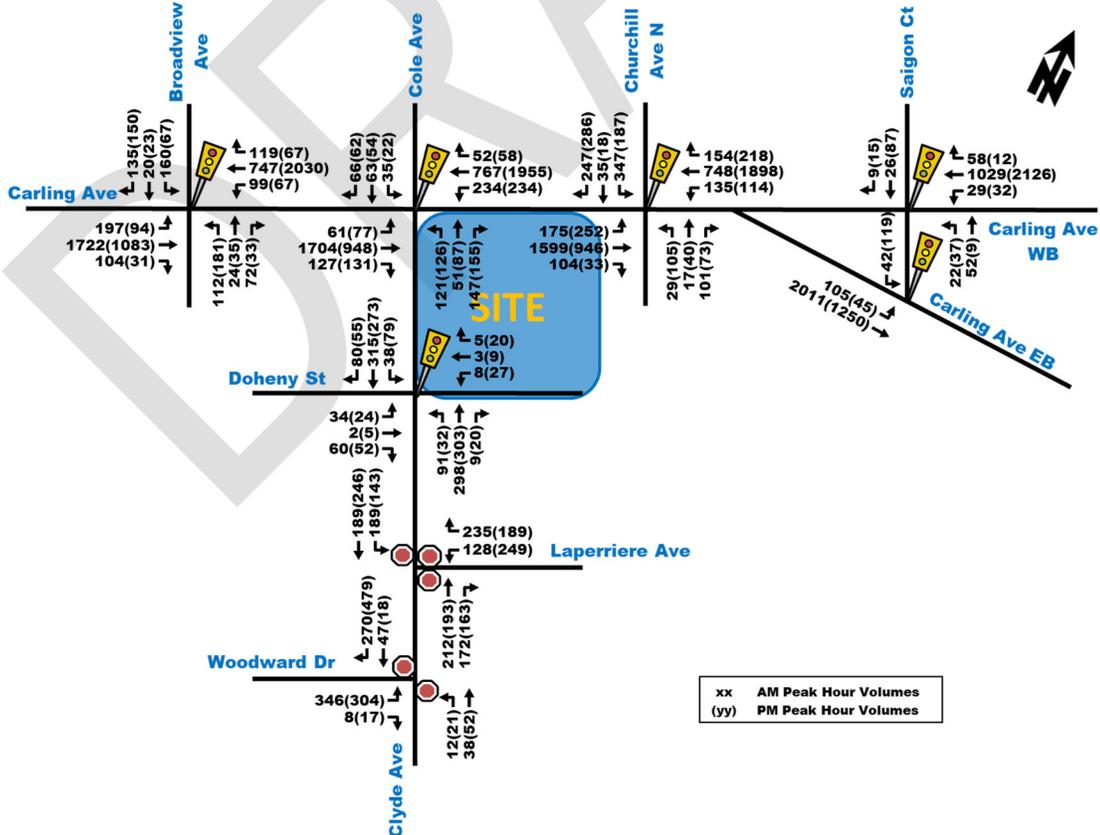


Figure 25: Total Future Background 2031 Traffic Volumes

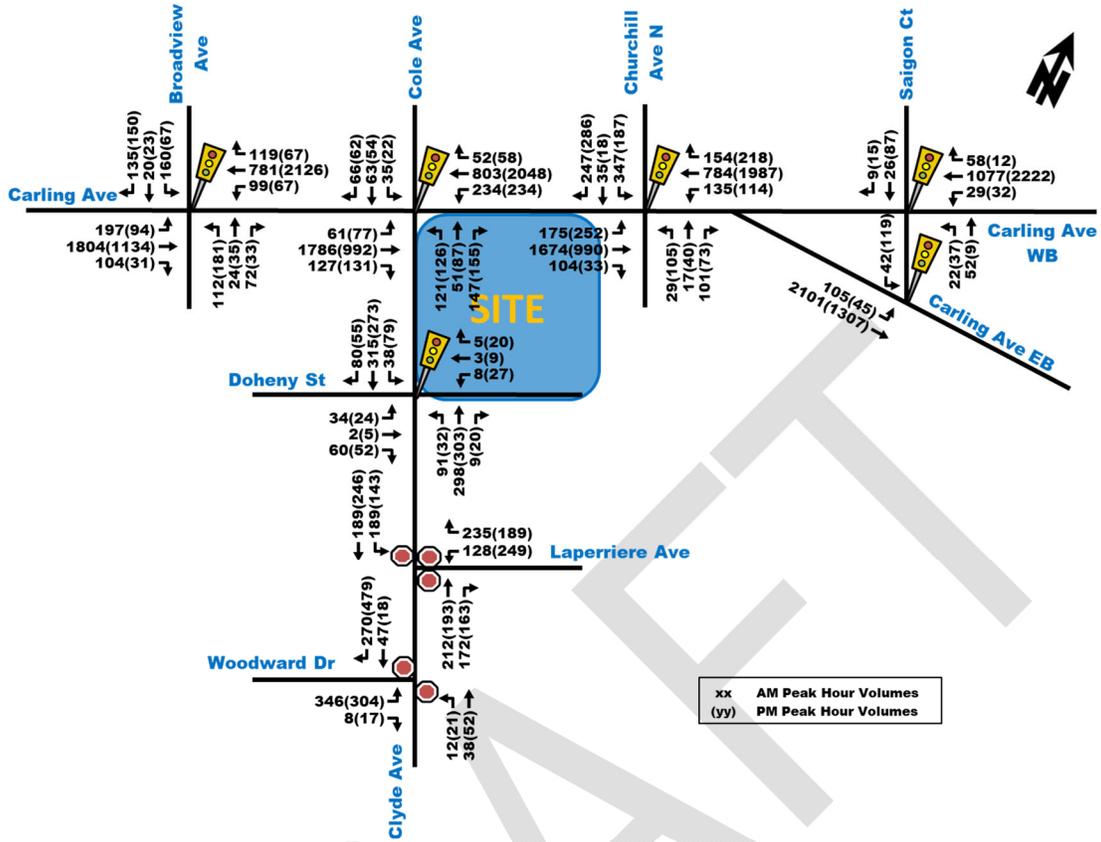
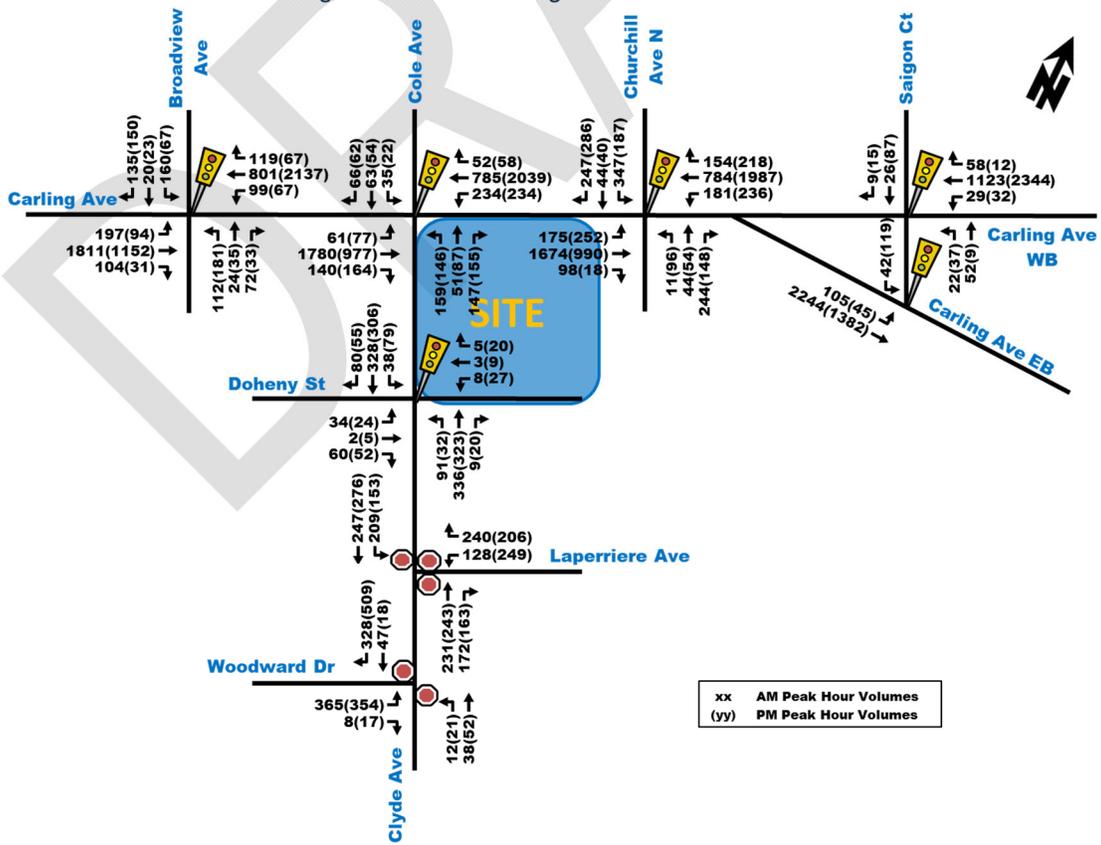


Figure 26: Total Future Background 2036 Traffic Volumes



3.3. Demand Rationalization

The total projected future traffic volumes can be determined by superimposing the net site-generated traffic volumes in each of **Figure 16**, **Figure 17** and **Figure 18**, onto their respective total future background 2026, 2031 and 2036 traffic volumes in **Figure 24**, **Figure 25** and **Figure 26**. The resulting total projected 2026, 2031 and 2036 traffic volumes are illustrated in **Figure 27**, **Figure 28** and **Figure 29**. Note that analysis of study area intersections is provided in **Section 4.9**.

Figure 27: Total Projected 2026 Traffic Volumes – with Phase 1 Development

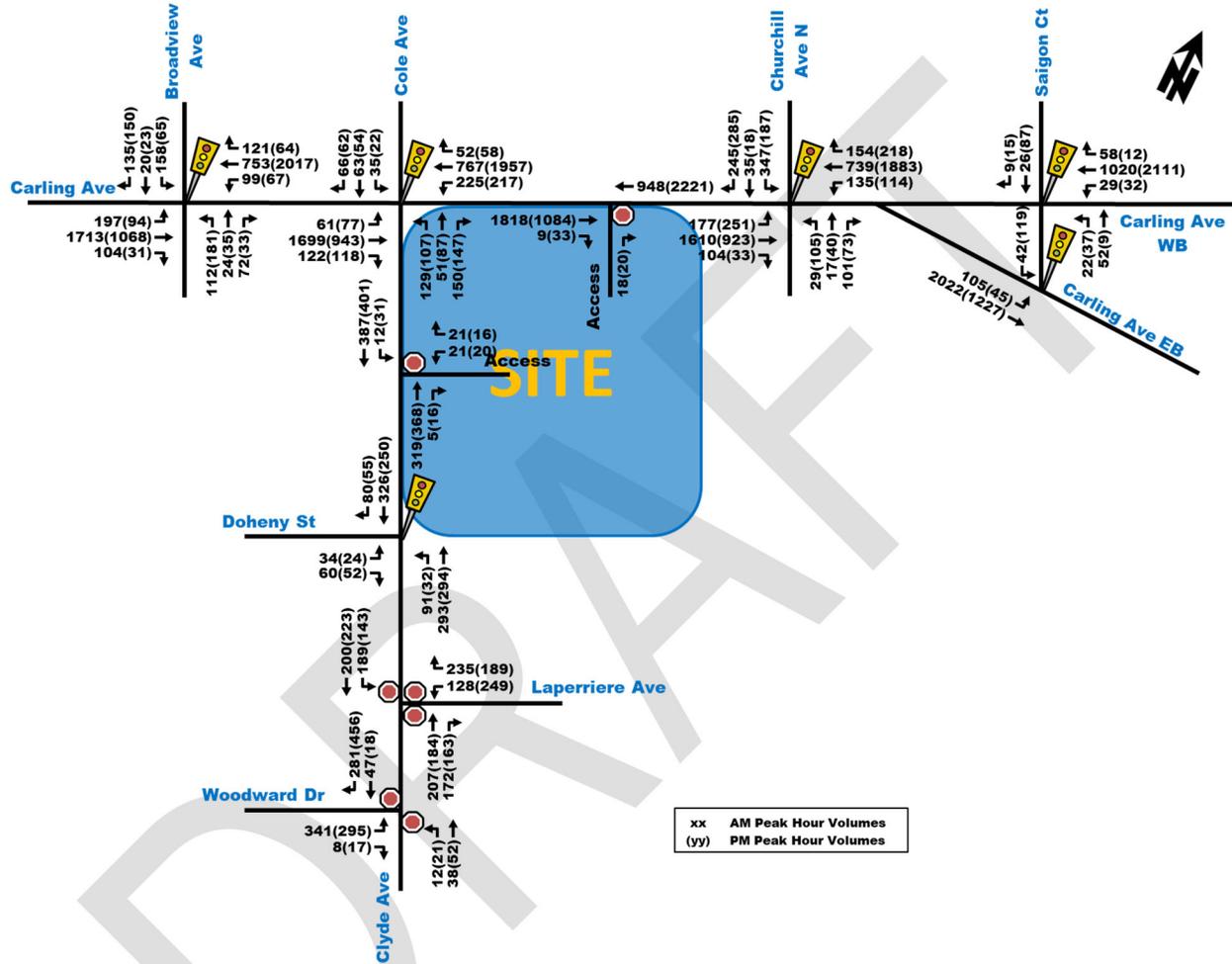


Figure 28: Total Projected 2031 Traffic Volumes – with Phase 2 Development

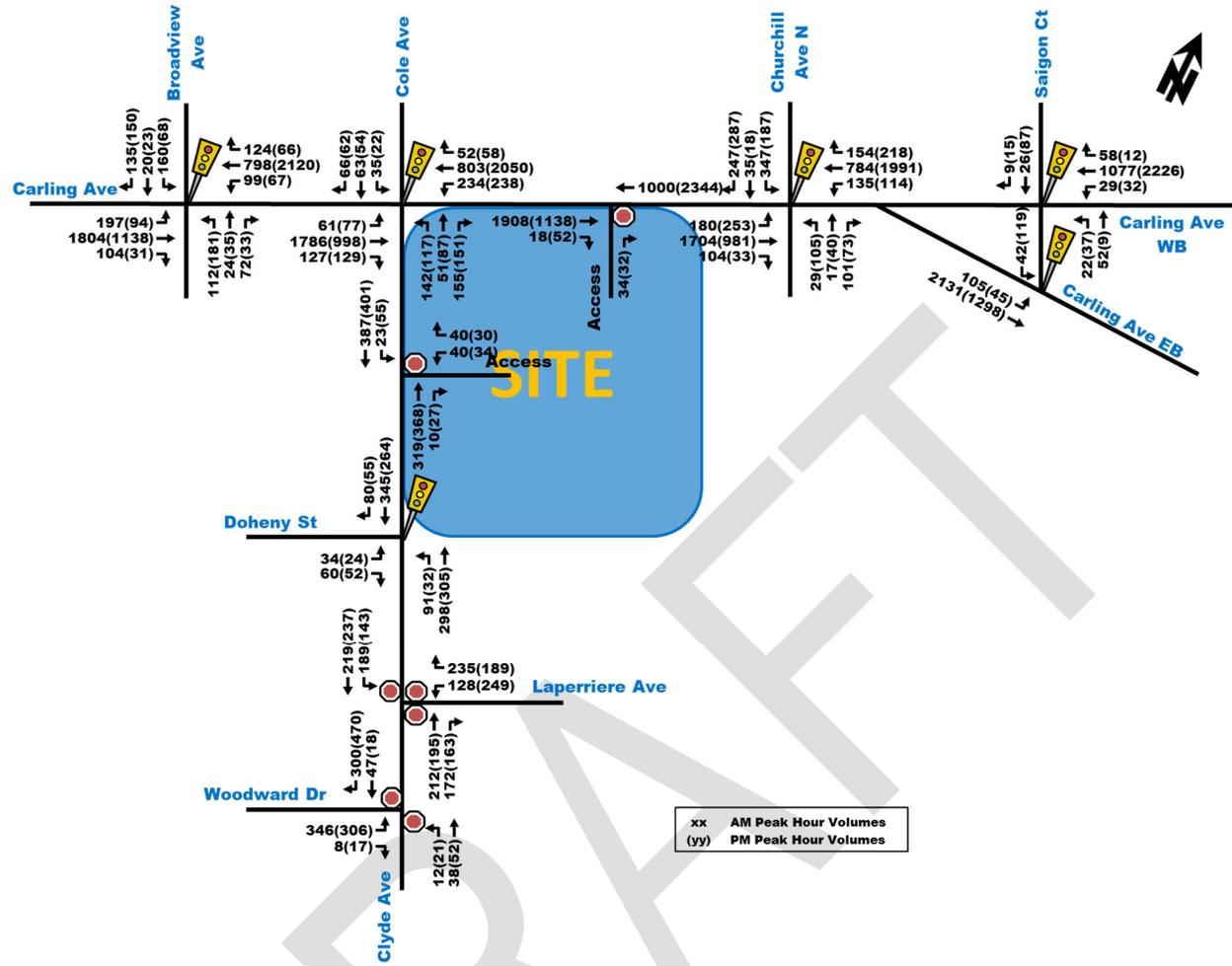
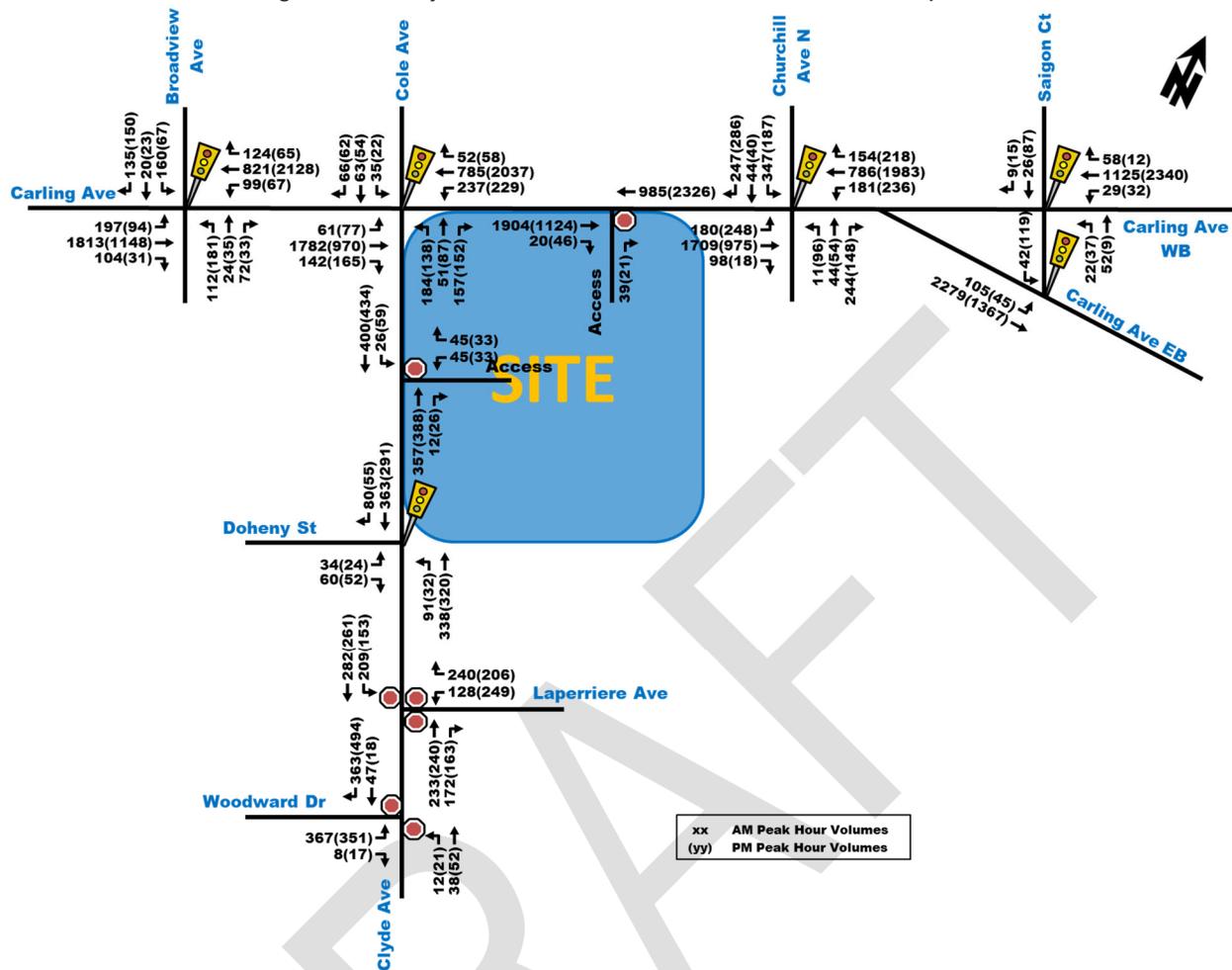


Figure 29: Total Projected 2036 Traffic Volumes – with Full Buildout of Development



Forecast Traffic Volumes

Along Clyde Ave, two-way traffic volumes are observed to reach up to approximately 900 veh/h during peak hours, in both existing and future conditions. These volumes are considered more appropriate for a major collector or similar roadway facility, rather than the existing local roadway classification. The forecast traffic volume is likely due to vehicles from both Woodward Dr and Laperriere Ave (which are major collector roads) using Clyde Ave to access major roads such as Maitland Ave or Carling Ave, or to access local communities from the mentioned major roads. It should be noted that, while Clyde Ave N is classified as a local road, it does not provide direct frontage to residential land uses as a typical local street may. Reclassifying Clyde Ave N to a collector (300 veh/h threshold) or major collector (600 veh/h threshold) may need to be taken into consideration.

Traffic volumes along Carling Ave may increase to approximately 2,400 veh/h in the peak direction and 1,200 veh/h in the off-peak direction. While these volumes may be able to be accommodated in the existing six-lane cross-section, the future lane reductions due to the introduction of bus lanes will reduce the capacity of the road significantly. This will be addressed in more detail in the following subsections.

Proposed Development Site-Generated Traffic

As detailed by the trip generation conducted in **Section 3.1.1**, given the existing site land uses, the proposed development site is anticipated to generate a very minimal net total traffic volume during the morning peak hour

at Phase 1 (2026) and up to 108 two-way vehicles at Phase 2 (2031) and full buildout (2036), which is not expected to result in major impact to the study area intersections. During the afternoon peak hour, a negative net total traffic volume is expected in the study area, with a reduction up to approximately 108 vehicles at Phase 1 (2026), 18 vehicles at Phase 2 (2031) and 57 vehicle at full buildout (2031). Therefore, no additional reductions or adjustments to site generated traffic was assumed.

Transportation Master Plan (TMP)

The City of Ottawa TMP's Road Network maps do not indicate any plans to modify study area roads by 2031. However, the Rapid Transit and Transit Priority 2031 Affordable Network illustrates Carling Ave as a Transit Priority Corridor (Continuous Measures) at the frontage of the site, as detailed in **Section 2.1.3**. Furthermore, the Ultimate Network Concept illustrates plans to provide at-grade Light Rail Transit (LRT) along Carling Ave in the future, connecting the Trillium Line and the Confederation Line crossings at Carling Ave. While these plans may take place in the long term, the City's ongoing improvements to transit measures and persistent implementation of improvements to both cyclist and pedestrian facilities throughout the City are expected to play a significant role in reducing reliance on auto vehicles in the future.

Demand Rationalization to the Background Traffic Volume Adjustments (Carling Ave Transit Priority)

Based on the Carling Avenue Transit Priority Measures Study, as transit usage increases it is expected that the implementation of the dedicated bus lanes along Carling Ave will result in a decrease of traffic volumes relative to existing. It is expected that, in addition to negligible auto traffic growth, up to 20% east-west background traffic volumes in the peak traffic direction and 15% traffic volumes in the off-peak traffic direction by 2031 will no longer impact the peak hour travel along Carling Avenue.

For the purpose of this TIA Report, the following east-west reductions will be applied to existing traffic, in addition to no assumed background growth (**Section 3.2.2**):

- 10% in both the peak and off-peak traffic directions in the Phase 1 2026 horizon year which recognizes that the BRT lanes have been recently installed and the full reduction remains to be realized through long term adoption; and
- 20% in the peak traffic direction and 15% in the off-peak traffic direction in both the 2031 and 2036 horizons which considers complete adoption of the BRT lanes, including relevant modal shifts and changes in traffic patterns.

These percent reductions will result in a decrease for background traffic volumes of approximately 200veh/h in the peak direction and 100veh/h in the off-peak direction at horizon year 2026, as well as a decrease of 400veh/h in the peak direction and 150veh/h in the off-peak direction at horizon years 2031 and 2036. The adjusted total projected 2026, 2031 and 2036 traffic volumes are illustrated in **Figure 30**, **Figure 31** and **Figure 32**, respectively.

Figure 30: Total Projected 2026 Traffic Volumes, with Traffic Volumes Reductions

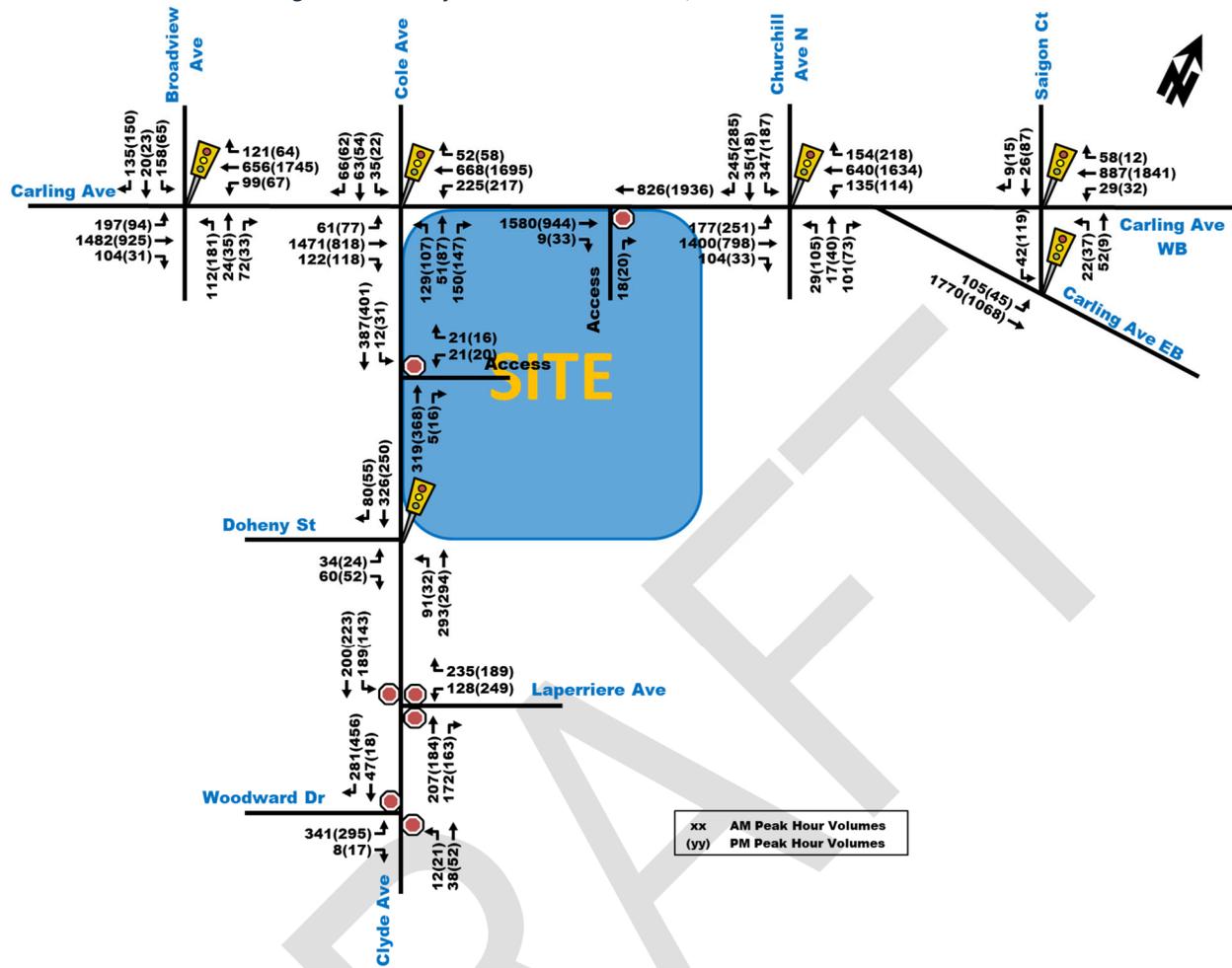


Figure 31: Total Projected 2031 Traffic Volumes, with Traffic Volumes Reductions

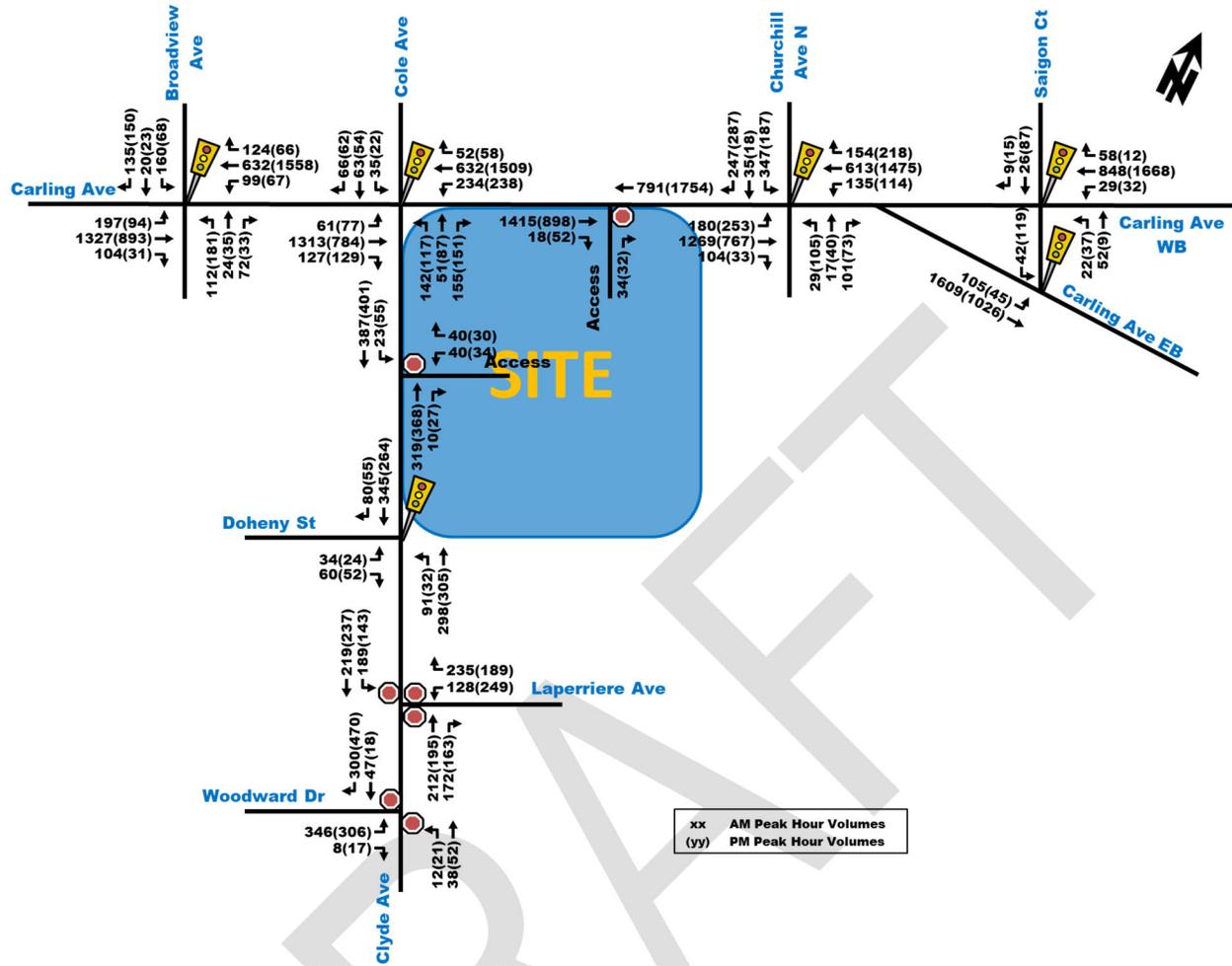
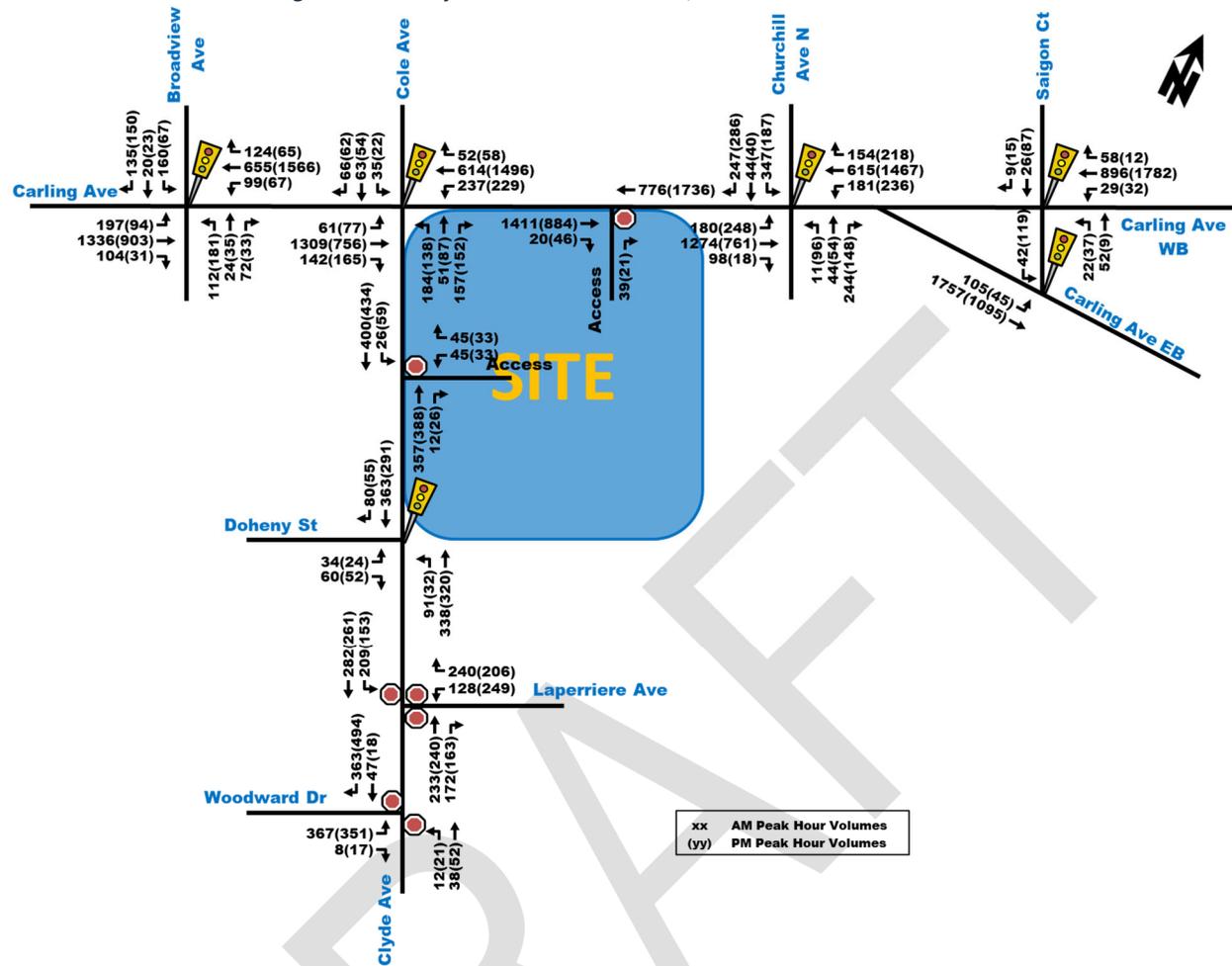


Figure 32: Total Projected 2036 Traffic Volumes, with Traffic Volumes Reductions



4.0 ANALYSIS

Note that City comments on the Forecasting Report submission (dated November 18, 2022) have not been received as of yet. The following Analysis section has been prepared in support of the Plan of Subdivision process in draft format, recognizing comments to the Forecasting section are pending. This report will be revised in the future to incorporate any comments by the City on the Forecasting Report submission.

4.1. Development Design

As this is a Plan of Subdivision, design related elements will be provided in more detail in the future Site Plan Application (SPA) submissions of the proposed development.

4.1.1. Design for Sustainable Modes

The City of Ottawa’s TDM-supportive Development Design and Infrastructure checklist has been provided in Appendix F and discussed in more detail in Section 4.5.

Auto and Bicycle Parking

Vehicle and bicycle parking are proposed to be provided in underground parking garages for each of the proposed respective buildings. Buildings are anticipated to have two to three levels of underground parking which can all be accessed via the proposed internal public street of the development.

Pedestrian and Cyclist Facilities

Pedestrian sidewalks will continue to be provided at the frontages of the proposed development, along Carling Ave and Clyde Ave. Within the subdivision, sidewalks will be provided along either side of the primary local roadway and as needed to facilitate access to building entrances. Pedestrian crossings may also be provided along the internal future public street of the development. An active transport (walking and cycling) connection is likely to be established with the adjacent future development to the south (at 861 Clyde). The design of the future internal public street will accommodate both pedestrians and cyclists.

Transit Amenities

The future transit network on Carling Ave and Clyde Ave is assumed to continue to operate in the future similar to existing conditions, indicated in **Section 2.1.2: Transit Network**. The bus pad on the south side of Carling Ave, at the frontage of the development, is not expected to be impacted or need realignment with the current proposed development plan. This will be confirmed at Site Plan Applications.

4.1.2. New Street Networks

Given that the new internal roadway will be public, it will be classified as a local roadway and designed using the City of Ottawa ROW cross-sections for local roads. As a new requirement for local roads by the City of Ottawa, the 30km/h design toolbox must be taken into account. As was shown in the development's concept plan, several measures are already being included, such as:

- **Curb extensions** at both the Carling Ave and Clyde Ave accesses, which narrows the internal roadway, resulting in reduced turning speeds and shortening crossing distances for pedestrians.
- **Internal curb extensions** at various locations along the roadway, which narrows the roadway and allows on-street parking to be organized into bays.
- **On-street parking** which can increase visual friction of travel lanes and provide short-term parking for visitors/pick-up/drop-offs.
- **Right-in/right-out channel island** at the Carling Access, which would further reduce vehicle turning speeds through narrowing travel lane width and shortens crossing distance for pedestrians.

In addition to the above, a posted speed limit of 30km/h would be required along the internal roadway. Other measures that may be considered include:

- Providing pedestrian crossings at different locations along the internal roadway, which can be included at the internal curb extensions.
- Providing short road segments to discourage vehicle speeds between access locations.
- Providing internal speed tables at different locations along the internal roadway to ensure the 30km/h speed is achieved. However, such permanent vertical measures can result in potential implications for drainage, municipal vehicle accessibility and snow clearing measures, which would need to undergo a design review. The internal speed tables can potentially be combined with the pedestrian crossings, resulting in internal raised pedestrian crossings.

4.2. Parking

The number of proposed parking spaces has not been confirmed yet. However, the minimum number of auto and bicycle parking spaces will be provided as per the City of Ottawa Parking Provisions. The proposed development is located in "Area Y", which consists of the following parking requirements:

- 0.5 vehicle parking space per dwelling unit for the residential land use,
- 0.1 vehicle parking space per dwelling unit for the visitors parking of the residential land use, with no more than 30 spaces required per building, and
- 0.5 bicycle parking space per dwelling unit for the residential land use, with preference from the City of Ottawa to provide up to 1.0 spaces per dwelling unit.

Therefore, for the 1,715 proposed total units, the development is required to provide a minimum of 858 vehicle parking spaces for tenants, 150 vehicle parking spaces for visitors and 858 (1,715 preferred) total bicycle parking spaces. Note that most parking spaces will be provided in underground parking garages for each respective building, with some layby parking areas provided along the future internal public street of the development.

4.3. Boundary Street Design

The detailed Multi-Modal Level of Service (MMLoS) analysis for boundary streets and signalized intersections will be provided in the future Site Plan Application.

4.4. Access Intersection Design

The existing site provides the following accesses which will ultimately be closed or replaced:

- A right-in right-out to Carling Avenue nearest the Boston Pizza. This access will be shifted approximately 30m to the west of its existing location.
- A right-in right-out along Clyde Avenue to the existing parking facilities. This access will be closed.
- A traffic signal controlled east leg of the Clyde/Doheny intersection. The east leg will be closed.

Access to the proposed development will be provided via a new internal public street that connects Carling Ave to Clyde Ave, with stop control at the minor legs of each access. The internal public street will connect to underground parking garage ramps and provide layby parking areas. A full movement site access will be provided along Clyde Ave, approximately 30m north of the existing Clyde/Doheny intersection. An existing SB-LT exists along the frontage of the site which will facilitate access into the site.

The internal public street will be designed as a local road with traffic calming measures included, as previously indicated in **Section 4.1**. Furthermore, in Phases 1 and 2, the Boston Pizza restaurant access is assumed to be through the internal public street.

4.5. Transportation Demand Management

4.5.1. Context for TDM

The proposed development is located in both a Design Priority Area (DPA), known as Carling Arterial Mainstreet, and along a Transit Priority (Continuous Measures) corridor, where a lane on each side of Carling Ave will be converted to a bus lane in the future.

Given the proposed land-use of the development as a residential building, it is assumed that most trips generated will be from residents leaving the site in the AM peak to go to work and returning to the site in the PM peak. **Sections 3.1.1** and **3.1.2** describe how many trips are expected to be generated per travel mode and anticipates the trip distribution based on the OD-Survey 2011 for Ottawa.

The development site is owned by RioCan REIT, who will manage the property in the future. A breakdown of unit types is not available at this time.

4.5.2. Need and Opportunity

Transit usage is anticipated to increase significantly in the area as a result of the transit priority measures being implemented along Carling Ave in the near future. Therefore, the mode share percentages used for the purposes of trip generation in this report are considered reasonable.

The proposed development is expected to utilize Transportation Demand Management (TDM) measures to maintain sustainable transit and active mode shares, as described in more detail in **Section 4.5.3** below.

4.5.3. TDM Program

The TDM-Supportive Design and Infrastructure Checklist has been provided in **Appendix F**. The TDM Measures Checklist is typically provided as well. However, no measures have been confirmed at this early stage of the process. Future TIA submissions will identify TDM Measures once they are confirmed by the proponent. The proposed measures in the Infrastructure Checklist were identified using the Site Plan and are indicated below.

TDM-Supportive Development Design and Infrastructure Checklist:

- All ten (10) Required measures related to Walking and Cycling (facilities and bicycle parking) and Vehicle Parking have been satisfied
- Eight (8) out of fourteen (14) basic measures related to Walking and Cycling, Parking and Ridesharing have been satisfied, namely:
 - Locating building entrances to minimize walk distance to sidewalks and transit.
 - Locating building doors and windows to ensure visibility of pedestrians.
 - Providing safe, direct and attractive walking routes to transit.
 - Ensuring walking routes are secure, visible, and lighted.
 - Designing roads for cyclist circulation.
 - Providing lighting, landscaping and benches along walking and cycling routes.
 - Providing wayfinding signage for site access.
 - Providing parking for long-term and short-term users.

TDM Measures Checklist:

Measured to be identified once confirmed by proponent in future TIA submissions.

4.6. Neighbourhood Traffic Management

This module compares the maximum two-way traffic of a local or collector road during morning and afternoon peak hours, to the respective ideal thresholds suggested by the City of Ottawa TIA Guidelines.

Site-generated traffic of the proposed development are expected to use local road Clyde Ave, collector road Broadview Ave, and major collector roads Churchill Ave and Woodward Dr, as part of different access routes to/from the proposed development. The thresholds suggested in the TIA Guidelines indicate an ideal two-way traffic volume of 120 veh/h for local roads, 300 veh/h for collector road and 600 veh/h for major collector roads, during peak hours. Using the existing traffic volumes in **Figure 7** and the total projected 2036 traffic volumes in **Figure 29** for comparison, the existing and future traffic volumes are compared to their respective thresholds as shown in **Table 21**.

Table 21: Existing and Projected Traffic Volumes Comparison to Thresholds

| Roadway | Classification | Daily Threshold (veh/day) | Peak Hour Threshold (veh/h) | Peak Hour Two-Way Volumes AM (PM) | |
|---------------|-----------------|---------------------------|-----------------------------|-----------------------------------|----------------|
| | | | | Existing | 2036 Projected |
| Clyde Ave | Local | 1,000 | 120 | 825 (771) | 964 (860) |
| Broadview Ave | Collector | 2,500 | 300 | 655 (436) | 660 (434) |
| Churchill Ave | Major Collector | 5,000 | 600 | 942 (954) | 1,016 (1,033) |
| Woodward Dr | Major Collector | 5,000 | 600 | 636 (821) | 750 (883) |

As shown in **Table 21**, two-way peak hour traffic volumes exceed the respective ideal thresholds of all roadways in both existing and future conditions. Note the following:

- **Clyde Ave:** volumes are significantly above the ideal peak hour threshold for a local road. The high traffic volumes are the result of a significant volume travelling along Woodward Dr and Laperriere Ave and using Clyde Ave to access major arterial roads such as Maitland Ave and Carling Ave, as well as access Highway 417 ramps. Clyde Ave does provide a typical local road ROW of 20m, but it also provides auxiliary turn lanes at its signalized intersections and has no direct frontage to residential land uses, which is not typical of a local road. It is recommended that Clyde Ave be reclassified to a major collector road based on the volumes and its connectivity. If a significant reduction of traffic volumes is desired, vehicle access to/from both Woodward Dr and Laperriere Ave would need to be limited or restricted.
- **Broadview Ave:** in the morning peak hour, volumes are nearly double the ideal threshold of a collector road. Broadview Ave connects arterial roads such as Richmond Rd and Carling Ave to local roads and collector streets, which is characteristic typical of a major collector road. Therefore, the City may consider reclassifying the road to a major collector, however, it is not considered critical.
- **Churchill Ave:** volumes are nearly 60 to 70% higher than the ideal threshold during both peak hours. Churchill Ave provides a significant connection between arterial streets such as Carling Ave, Richmond Rd and Scott St, as well as local and collector roads which provide access to communities in between. Bulb outs and on-street parking are provided along the entire stretch of the road, which may help to reduce the traffic volumes through traffic calming. Given the ongoing west extension for LRT Stage 2 is expected to become operational in 2025, traffic volumes may see a reduction in the future as transit usage increases.
- **Woodward Dr:** volumes are nearly up to 50% higher compared to the ideal threshold. Woodward Dr provides access to office, retail and industrial land uses, along with a connection between Maitland Ave and Clyde Ave, all of which contribute to the traffic volumes. Reduction in traffic volumes would require restricting or limiting access to Woodward Dr from either Maitland Ave or Clyde Ave. However, it is not considered critical with regards to current traffic operations of the road.

Due to the location and context of the proposed development, the proximity of the site to the Highway 417 and the function of major surrounding roads, high traffic volumes are to be expected during peak hours. However, with the future implementation of the transit priority lanes on Carling Ave and the continued improvement of the transit network in Ottawa, including the ongoing LRT Stage 2 extensions, a shift in volumes may gradually occur in the future and result in more transit usage and less vehicle volumes.

It is important to note that the thresholds provided in the TIA Guidelines are only ideal suggestions and not firm requirements for traffic volumes. However, the City may choose to reclassify roadways as needed, particularly in the case of Clyde Ave where volumes are significantly higher than the threshold. Other roadways are not considered critical at this time, but intersection operations will be confirmed in **Section 4.9**.

4.7. Transit

As shown in **Table 20**, the proposed development is anticipated to generate up to a total of 294 transit trips at full buildout during both the morning and afternoon peak hours. These trips are expected to utilize transit routes along both Carling Ave and Clyde Ave.

Existing conditions (combination of both pre- and post-COVID) transit ridership data was obtained from OC Transpo for three bus stops near the proposed development site, as shown in **Figure 33**. The data, provided in **Table 22**, is a summary of average bus boarding, alighting and occupancy information for bus routes at each of the respective stop numbers, during morning and afternoon peak hours.

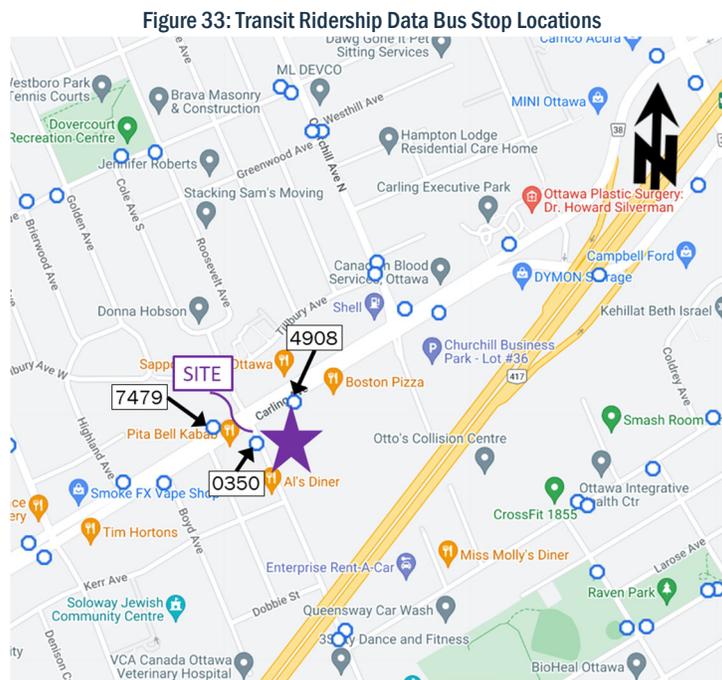


Table 22: Transit Ridership Data

| Stop No. | Location | Route | Direction | AM | | | PM | | |
|----------|-----------------------|-------|-----------|----------|-----------|----------------------|----------|-----------|----------------------|
| | | | | Boarding | Alighting | Avg. Load at Depart. | Boarding | Alighting | Avg. Load at Depart. |
| 0350 | Clyde North / Carling | 50 | WB | 1 | 7 | 10 | 3 | 10 | 11 |
| 4908 | Carling / Clyde North | 50 | EB | 7 | 10 | 12 | 9 | 7 | 11 |
| | | 85 | EB | 17 | 8 | 24 | 23 | 18 | 24 |
| 7479 | Carling / Cole South | 85 | WB | 5 | 17 | 21 | 17 | 18 | 23 |

Bold number: Winter 2020 schedule period (Jan 5 - Mar 16, 2020) which represents the last period of “normal” ridership before the effects of the pandemic began.
Non-bold numbers: Fall 2022 schedule period (Sep 4 - Nov 17, 2022) and are provided where current ridership is higher than pre-pandemic.

As shown in **Table 22**, the average load of each bus route at its respective bus stop ranges from about 10 to 24 persons during the peak hours. It should be noted that these bus routes serve their respective stops several times during peak hours. Bus route #85 is a “frequent routes” that arrives every 15 minutes or less during peak hours. In the future, while bus route #50 is a “local route” that arrives every 30 minutes during peak hours. Once the dedicated bus lanes on Carling Ave become operational, OC Transpo may further increase the bus routes and/or the frequency of buses along Carling Ave.

Based on information obtained from the OC Transpo website, the person capacity of OC Transpo vehicles, which includes the number of seats on the bus plus the standing capacity, ranges from approximately 65 occupants in its smallest vehicles to approximately 110 occupants in its largest vehicles.

Therefore, based on the low current average bus loads, the available capacity and frequency of the existing bus routes, and the potential additional future bus services on Carling Ave, the proposed development generating up to approximately 294 transit trips during peak hours is anticipated to be accommodated by the future transit services.

4.8. Review of Network Concept

Based on a review of the TRANS Screenline System map, there are no adjacent or nearby screenlines to the proposed development site. Nonetheless, the discussion provided in **Section 4.6** included a review of the existing and projected traffic volumes and their respective ideal thresholds for most roads in the study area. The review indicated that, based on the desirable thresholds set by the City of Ottawa TIA Guidelines, traffic volumes along study area roads are fairly high in both existing and future conditions. The effect of the vehicle trips on the road network and study area intersections is provided in **Section 4.9**.

With regards to Carling Ave, total projected traffic volumes (without reductions) are expected to reach up to approximately 2,500 veh/h in the peak direction. As an arterial road, Carling Ave is assumed to have a capacity of 1,000 veh/h per lane, which would be equivalent to a total capacity of 2,000 veh/h in each direction of travel, assuming 2 general traffic lanes and 1 bus lane in each direction. Therefore, without a reduction in traffic volumes, the volumes on Carling Ave are expected to exceed capacity in the peak direction during peak hours. However, with a reduction in traffic as detailed in Demand Rationalization (**Section 3.3**), total projected traffic volumes are expected to fall below 2,000 veh/h in the peak direction.

Section 4.7 provided a discussion of existing transit volumes, site-generated transit volumes and the capacity of available transit services, which indicated that the transit network should be capable of accommodating projected transit volumes. With the implementation of the Carling Ave Transit Priority Measures and the completion of the future LRT system, traffic volumes are ultimately expected to decline as transit usage increases.

4.9. Intersection Design

4.9.1. Intersection Control

Stop control will be provided for vehicles exiting the site at each of the Carling Ave and Clyde Ave accesses. The Carling access will only permit right-in/right-out movements, while the Clyde access will permit all movements. All other off-site intersection controls in the study area will continue to operate the same as existing conditions.

4.9.2. Intersection Design

Synchro 11 Trafficware was used to analyze intersection performance of intersections within the study area. Critical movements at each of the intersections were assessed based on either the movement with the highest volume-to-capacity ratio (for signalized intersections), or the movement experiencing the highest average delay (for unsignalized intersections). It should be noted that, as per the TIA Guidelines, the Peak Hour Factor (PHF) used for analysis was 0.90 in existing conditions and 1.0 in all future scenario conditions.

All future background and total projected scenarios assume the Carling Transit Priority Measures have been implemented and Carling Ave has undergone lane modifications and intersection adjustments. All signalized intersection phase times have been optimized for all future horizon years in the Synchro analysis, while cycle lengths were unchanged. The detailed Synchro reports for existing and future conditions have been provided in **Appendix G**.

Existing Conditions

Table 23 below summarizes the intersection performance of study area intersections, based on existing conditions traffic volumes illustrated in **Figure 7**.

Table 23: Existing Conditions Intersection Performance

| Intersection | Weekday AM Peak (PM Peak) | | | | | |
|--|---------------------------|----------------------------|----------|---------------------------|------|------------|
| | Critical Movement | | | Intersection 'As a Whole' | | |
| | LOS | max. v/c or avg. delay (s) | Movement | Delay (s) | LOS | v/c |
| Churchill Ave/Carling Ave (S) | E(F) | 0.91(1.39) | SBL(EBL) | 29.9(75.1) | D(F) | 0.88(1.09) |
| Clyde Ave/Cole Ave/Carling Ave (S) | C(B) | 0.80(0.70) | WBL(WBT) | 17.5(18.1) | C(B) | 0.73(0.68) |
| Broadview Ave/Carling Ave (S) | E(F) | 0.92(1.07) | EBT(WBT) | 35.8(57.7) | D(E) | 0.85(0.98) |
| Clyde Ave/Doheny St/Existing Site Access (S) | A(A) | 0.42(0.41) | EBT(EBT) | 8.7(9.1) | A(A) | 0.32(0.29) |
| Saigon Ct/Carling Ave WB (S) | A(A) | 0.52(0.57) | NBT(WBT) | 7.7(9.1) | A(A) | 0.31(0.57) |
| Carling Ave EB/Saigon Ct (S) | A(A) | 0.50(0.47) | EBT(SBL) | 2.5(4.8) | A(A) | 0.49(0.34) |
| Clyde Ave/Laperriere Ave (U) | C(E) | 23.4(35.3) | SB(WB) | 21.8(29.6) | C(D) | - |
| Clyde Ave/Woodward Dr (U) | D(D) | 26.8(28.9) | NB(NB) | 10.7(11.6) | B(B) | - |

Note: Analysis of signalized intersections assumes a PHF of 0.9 and a saturation flow rate of 1800 veh/h/lane.
(S) – Signalized intersection, movement with highest v/c ratio identified as critical movement.
(U) – Unsignalized intersection, movement with highest average delay identified as critical movement.

As shown in **Table 23**, the intersection of Churchill/Carling 'as a whole' operates at capacity during the afternoon peak hour, with the corresponding critical EBL movement also operating at capacity. The intersection of Broadview/Carling operates near capacity during the afternoon peak hour, with the corresponding critical WBT movement operating at capacity. The remaining signalized intersections 'as a whole' and their critical movements operate at LOS 'C' or better during peak hours.

The unsignalized intersections 'as a whole' operate at LOS 'D' or better, with critical movements operating at LOS 'E' or better during peak hours.

Total Future Background 2026

Table 24 below summarizes the Synchro traffic operations at study area intersections, based on total future background 2026 traffic volumes illustrated in **Figure 24**.

Table 24: Total Future Background 2026 Conditions Intersection Performance

| Intersection | Weekday AM Peak (PM Peak) | | | | | |
|--|---------------------------|----------------------------|----------|---------------------------|------|------------|
| | Critical Movement | | | Intersection 'As a Whole' | | |
| | LOS | max. v/c or avg. delay (s) | Movement | Delay (s) | LOS | v/c |
| Churchill Ave/Carling Ave (S) | F(F) | 1.06(1.38) | EBT(EBL) | 52.6(110.5) | E(F) | 0.99(1.23) |
| Clyde Ave/Cole Ave/Carling Ave (S) | F(E) | 1.01(0.95) | EBT(WBT) | 27.4(26.7) | E(D) | 0.93(0.89) |
| Broadview Ave/Carling Ave (S) | F(F) | 1.01(1.23) | EBT(WBT) | 42.7(85.0) | E(F) | 0.92(1.11) |
| Clyde Ave/Doheny St/Existing Site Access (S) | A(A) | 0.37(0.35) | EBT(EBT) | 8.6(8.9) | A(A) | 0.29(0.26) |
| Saigon Ct/Carling Ave WB (S) | A(C) | 0.48(0.79) | NBT(WBT) | 7.1(13.0) | A(C) | 0.38(0.77) |
| Carling Ave EB/Saigon Ct (S) | C(A) | 0.71(0.46) | EBT(EBT) | 4.5(4.7) | B(A) | 0.70(0.46) |
| Clyde Ave/Laperriere Ave (U) | C(C) | 17.7(22.7) | SB(WB) | 16.7(20.1) | C(C) | - |
| Clyde Ave/Woodward Dr (U) | C(C) | 22.3(23.1) | NB(NB) | 10.1(10.7) | B(B) | - |

Note: Analysis of signalized intersections assumes a PHF of 1.0 and a saturation flow rate of 1800 veh/h/lane.
(S) – Signalized intersection, movement with highest v/c ratio identified as critical movement.
(U) – Unsignalized intersection, movement with highest average delay identified as critical movement.

As shown in **Table 24**, traffic operations of signalized intersections along Carling Ave deteriorate significantly, with the Churchill Ave, Cole Ave/Clyde Ave and Broadview Ave intersections 'as a whole' operating at or near capacity during peak hours and the corresponding critical movements operating at capacity. The two Carling/Saigon intersections 'as a whole' operate acceptably with LOS 'C' or better during peak hours and critical movements also operating at LOS 'C' or better.

Operations of intersections not along Carling Ave, which includes Clyde/Doheny, Clyde/Laperriere and Clyde/Woodward improve compared to existing conditions as a result of adjusting PHF to 1.0.

Total Future Background 2031

Table 25 below summarizes the Synchro traffic operations at study area intersections, based on total future background 2031 traffic volumes illustrated in **Figure 25**.

Table 25: Total Future Background 2031 Conditions Traffic Volumes

| Intersection | Weekday AM Peak (PM Peak) | | | | | |
|--|---------------------------|----------------------------|----------|---------------------------|------|------------|
| | Critical Movement | | | Intersection 'As a Whole' | | |
| | LOS | max. v/c or avg. delay (s) | Movement | Delay (s) | LOS | v/c |
| Churchill Ave/Carling Ave (S) | F(F) | 1.10(1.50) | EBT(EBL) | 57.8(120.5) | F(F) | 1.03(1.27) |
| Clyde Ave/Cole Ave/Carling Ave (S) | F(E) | 1.08(1.00) | EBT(WBT) | 37.5(28.1) | E(E) | 0.99(0.94) |
| Broadview Ave/Carling Ave (S) | F(F) | 1.05(1.29) | EBT(WBT) | 50.2(99.8) | E(F) | 0.96(1.17) |
| Clyde Ave/Doheny St/Existing Site Access (S) | A(A) | 0.37(0.35) | EBT(EBT) | 8.6(8.9) | A(A) | 0.29(0.26) |
| Saigon Ct/Carling Ave WB (S) | A(D) | 0.48(0.83) | NBT(WBT) | 7.1(14.2) | A(D) | 0.40(0.81) |
| Carling Ave EB/Saigon Ct (S) | C(A) | 0.74(0.48) | EBT(EBT) | 5.2(4.7) | C(A) | 0.73(0.48) |
| Clyde Ave/Laperriere Ave (U) | C(C) | 17.7(22.7) | SB(WB) | 16.7(20.1) | C(C) | - |
| Clyde Ave/Woodward Dr (U) | C(C) | 22.3(23.1) | NB(NB) | 10.1(10.7) | B(B) | - |

Note: Analysis of signalized intersections assumes a PHF of 1.0 and a saturation flow rate of 1800 veh/h/lane.
(S) – Signalized intersection, movement with highest v/c ratio identified as critical movement.
(U) – Unsignalized intersection, movement with highest average delay identified as critical movement.

As shown in **Table 25**, operations at the study area intersections are anticipated to be similar to total future background 2026, with higher congestions and delays.

Total Future Background 2036

Table 26 below summarizes the Synchro traffic operations at study area intersections, based on total future background 2036 traffic volumes illustrated in **Figure 26**.

Table 26: Total Future Background 2036 Conditions Traffic Volumes

| Intersection | Weekday AM Peak (PM Peak) | | | | | |
|--|---------------------------|----------------------------|----------|---------------------------|------|------------|
| | Critical Movement | | | Intersection 'As a Whole' | | |
| | LOS | max. v/c or avg. delay (s) | Movement | Delay (s) | LOS | v/c |
| Churchill Ave/Carling Ave (S) | F(F) | 1.45(1.50) | WBL(EBL) | 103.6(120.5) | F(F) | 1.16(1.26) |
| Clyde Ave/Cole Ave/Carling Ave (S) | F(F) | 1.10(1.01) | EBT(WBT) | 43.0(27.7) | F(E) | 1.00(0.94) |
| Broadview Ave/Carling Ave (S) | F(F) | 1.06(1.30) | EBT(WBT) | 50.9(101.1) | E(F) | 0.97(1.18) |
| Clyde Ave/Doheny St/Existing Site Access (S) | A(A) | 0.38(0.35) | EBT(EBT) | 8.7(8.9) | A(A) | 0.30(0.27) |
| Saigon Ct/Carling Ave WB (S) | A(D) | 0.48(0.87) | NBT(WBT) | 7.2(16.1) | A(D) | 0.40(0.85) |
| Carling Ave EB/Saigon Ct (S) | C(A) | 0.79(0.51) | EBT(EBT) | 9.2(4.7) | C(A) | 0.78(0.51) |
| Clyde Ave/Laperriere Ave (U) | D(D) | 25.3(28.8) | SB(WB) | 21(26) | C(D) | - |
| Clyde Ave/Woodward Dr (U) | C(D) | 24.5(29.1) | NB(NB) | 10.4(11.3) | B(B) | - |

Note: Analysis of signalized intersections assumes a PHF of 1.0 and a saturation flow rate of 1800 veh/h/lane.
(S) – Signalized intersection, movement with highest v/c ratio identified as critical movement.
(U) – Unsignalized intersection, movement with highest average delay identified as critical movement.

As shown in **Table 26**, traffic operations at the study area intersections are expected to deteriorate significantly compared to total future background 2026 and 2031 due to increasing congestions and delays.

Total Projected 2026 (with Demand Rationalizations)

Table 27 below summarizes the Synchro traffic operations at study area intersections, based on total projected 2026 traffic volumes with demand rationalization, illustrated in **Figure 30**.

Table 27: Total Projected 2026 Conditions Traffic Volumes, with Demand Rationalization

| Intersection | Weekday AM Peak (PM Peak) | | | | | |
|------------------------------------|---------------------------|----------------------------|----------|---------------------------|------|------------|
| | Critical Movement | | | Intersection 'As a Whole' | | |
| | LOS | max. v/c or avg. delay (s) | Movement | Delay (s) | LOS | v/c |
| Churchill Ave/Carling Ave (S) | E(F) | 0.96(1.28) | EBT(EBL) | 42.4(75.4) | D(F) | 0.90(1.08) |
| Clyde Ave/Cole Ave/Carling Ave (S) | D(D) | 0.85(0.81) | EBT(WBT) | 20.7(23.6) | D(C) | 0.81(0.76) |
| Broadview Ave/Carling Ave (S) | D(F) | 0.89(1.06) | EBT(WBT) | 32.5(49.3) | D(E) | 0.81(0.96) |
| Clyde Ave/Doheny St (S) | A(A) | 0.34(0.35) | EBL(EBL) | 6.2(5.1) | A(A) | 0.29(0.23) |
| Saigon Ct/Carling Ave WB (S) | A(B) | 0.48(0.68) | NBT(WBT) | 7.2(10.9) | A(B) | 0.33(0.66) |
| Carling Ave EB/Saigon Ct (S) | B(A) | 0.63(0.45) | EBT(SBL) | 2.9(5.1) | B(A) | 0.62(0.40) |
| Clyde Ave/Laperriere Ave (U) | C(C) | 18.3(21.7) | SB(WB) | 16.9(18.9) | C(C) | - |
| Clyde Ave/Woodward Dr (U) | C(C) | 22.0(22.0) | NB(NB) | 10.1(10.5) | B(B) | - |
| Carling Ave/Site Access (U) | B(A) | 10.5(9.3) | NB(NB) | 0.1(0.1) | A(A) | - |
| Clyde Ave/Site Access (U) | B(B) | 11.4(12.5) | WB(WB) | 0.8(0.9) | A(A) | - |

Note: Analysis of signalized intersections assumes a PHF of 1.0 and a saturation flow rate of 1800 veh/h/lane.
(S) – Signalized intersection, movement with highest v/c ratio identified as critical movement.
(U) – Unsignalized intersection, movement with highest average delay identified as critical movement.

With the applied traffic volume reductions along Carling Ave by horizon year 2026, traffic operations at study area intersections along Carling Ave are expected to improve significantly. However, the intersection of Churchill/Carling 'as a whole' is expected to continue operating at capacity during the afternoon peak hour, with the corresponding critical EBL movement also operating at capacity.

Critical movements at the unsignalized site accesses are expected to operate at LOS 'B' or better during both peak hours.

Total Projected 2031 (with Demand Rationalizations)

Table 28 below summarizes the Synchro traffic operations at study area intersections, based on total projected 2031 traffic volumes with demand rationalization, illustrated in Figure 31.

Table 28: Total Projected 2031 Conditions Traffic Volumes, with Demand Rationalization

| Intersection | Weekday AM Peak (PM Peak) | | | | | |
|------------------------------------|---------------------------|----------------------------|----------|---------------------------|------|------------|
| | Critical Movement | | | Intersection 'As a Whole' | | |
| | LOS | max. v/c or avg. delay (s) | Movement | Delay (s) | LOS | v/c |
| Churchill Ave/Carling Ave (S) | E(F) | 0.92(1.13) | EBT(EBL) | 40.0(59.4) | D(F) | 0.86(1.00) |
| Clyde Ave/Cole Ave/Carling Ave (S) | C(C) | 0.80(0.78) | WBL(WBL) | 22.0(24.3) | C(A) | 0.75(0.52) |
| Broadview Ave/Carling Ave (S) | D(E) | 0.81(0.95) | EBT(WBT) | 29.5(35.3) | C(D) | 0.73(0.87) |
| Clyde Ave/Doheny St (S) | A(A) | 0.34(0.35) | EBL(EBL) | 6.2(5.0) | A(A) | 0.29(0.24) |
| Saigon Ct/Carling Ave WB (S) | A(B) | 0.48(0.62) | NBT(WBT) | 7.1(10.2) | A(B) | 0.32(0.61) |
| Carling Ave EB/Saigon Ct (S) | A(A) | 0.58(0.45) | EBT(SBL) | 2.3(5.2) | A(A) | 0.57(0.39) |
| Clyde Ave/Laperriere Ave (U) | C(C) | 19.8(22.5) | SB(WB) | 17.8(19.8) | C(C) | - |
| Clyde Ave/Woodward Dr (U) | C(C) | 22.6(23.2) | NB(NB) | 10.2(10.7) | B(B) | - |
| Carling Ave/Site Access (U) | B(A) | 10.1(9.3) | NB(NB) | 0.2(0.1) | A(A) | - |
| Clyde Ave/Site Access (U) | B(B) | 12.1(13.5) | WB(WB) | 1.4(1.5) | A(A) | - |

Note: Analysis of signalized intersections assumes a PHF of 1.0 and a saturation flow rate of 1800 veh/h/lane.
(S) – Signalized intersection, movement with highest v/c ratio identified as critical movement.
(U) – Unsignalized intersection, movement with highest average delay identified as critical movement.

With further traffic volume reductions applied at study area intersections along Carling Ave by horizon year 2031, traffic operations are expected to improve even more significantly. The intersection of Churchill/Carling operates slightly over capacity during the afternoon peak hour, while the corresponding critical EBL movement continues to operate at capacity. The remaining signalized intersections 'as a whole' operate at LOS 'D' or better during peak hours, with critical movements operating at LOS 'E' or better.

Unsignalized intersections, including future site accesses, 'as a whole' operate at LOS 'C' or better during peak hours, with critical movements also operating at LOS 'C' or better.

Total Projected 2036 (with Demand Rationalizations)

Table 29 below summarizes the Synchro traffic operations at study area intersections, based on total projected 2036 traffic volumes with demand rationalization, illustrated in **Figure 32**.

Table 29: Total Projected 2036 Conditions Traffic Volumes, with Demand Rationalization

| Intersection | Weekday AM Peak (PM Peak) | | | | | |
|------------------------------------|---------------------------|----------------------------|----------|---------------------------|------|------------|
| | Critical Movement | | | Intersection 'As a Whole' | | |
| | LOS | max. v/c or avg. delay (s) | Movement | Delay (s) | LOS | v/c |
| Churchill Ave/Carling Ave (S) | F(F) | 1.18(1.11) | WBL(EBL) | 62.7(59.9) | E(E) | 0.98(0.98) |
| Clyde Ave/Cole Ave/Carling Ave (S) | D(C) | 0.85(0.77) | WBL(WBL) | 23.8(21.8) | C(A) | 0.79(0.52) |
| Broadview Ave/Carling Ave (S) | D(E) | 0.81(0.95) | EBT(WBT) | 29.8(35.6) | C(D) | 0.73(0.87) |
| Clyde Ave/Doheny St (S) | A(A) | 0.35(0.35) | EBL(EBL) | 6.4(5.0) | A(A) | 0.31(0.25) |
| Saigon Ct/Carling Ave WB (S) | A(B) | 0.48(0.66) | NBT(WBT) | 7.3(10.7) | A(B) | 0.33(0.64) |
| Carling Ave EB/Saigon Ct (S) | B(A) | 0.63(0.45) | EBT(SBL) | 4.4(5.1) | B(A) | 0.62(0.41) |
| Clyde Ave/Laperriere Ave (U) | D(D) | 30.8(28.0) | SB(WB) | 23.7(25.1) | C(D) | - |
| Clyde Ave/Woodward Dr (U) | D(D) | 25.1(28.3) | NB(NB) | 10.5(11.1) | B(B) | - |
| Carling Ave/Site Access (U) | B(A) | 10.2(9.3) | NB(NB) | 0.2(0.1) | A(A) | - |
| Clyde Ave/Site Access (U) | B(B) | 12.8(13.8) | WB(WB) | 1.6(1.5) | A(A) | - |

Note: Analysis of signalized intersections assumes a PHF of 1.0 and a saturation flow rate of 1800 veh/h/lane.
(S) – Signalized intersection, movement with highest v/c ratio identified as critical movement.
(U) – Unsignalized intersection, movement with highest average delay identified as critical movement.

As shown in **Table 29**, operations of intersections 'as a whole' and their critical movements are mostly similar to total projected 2031 traffic operations (with demand rationalization) with slightly higher congestions and delays. Due to a shift in the trip assignment of an adjacent development's site-generated traffic volumes, the intersection of Churchill/Carling 'as a whole' now operates near capacity rather than over capacity during the afternoon peak hour. Critical movements at the intersection operate at capacity during both peak hours. Traffic operations of the remaining study area intersections are considered acceptable, with intersections 'as a whole' operating at LOS 'D' or better during peak hours and critical movements operating at LOS 'E' or better during peak hours.

Note that the 861 Clyde future adjacent development's TIA Report recommended the WBL storage lane at the intersection of Churchill/Carling be extended to accommodate ultimate development volumes. As such, the 95th percentile queue lengths for total projected conditions were reviewed and it was determined that a queue length of approximately 95m is expected at the WBL lane, which exceeds the available storage length of 65m. Therefore, the storage length is recommended to be increased. With regards to the EBL lane, the queue length was identified in the 1619-1655 Carling Ave future adjacent development's TIA Report to exceed the available storage length of 65m by approximately 55m. This queue length was found to be approximately similar in the analysis conducted in this report for total projected conditions. Therefore, the City should consider extending the EBL storage length or monitoring the movement once the transit priority measures are introduced along Carling Ave, to determine the extent and impact of the traffic queue.

No queueing issues were identified for the EBL and WBL lanes at the intersection of Carling/Clyde as a result of modifying the turn types to fully protected. The EBL storage length is being extended to 70m in the future, which can accommodate the traffic volumes and queue lengths.

5.0 FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

Based on the results summarized herein, the following transportation related conclusions are offered:

Proposed Development

- RioCan REIT is proposing a large-scale residential development consisting of six residential buildings (1,715 units in total) and a public park to replace the previous Carling Ave Canadian Tire Centre building

and an existing Boston Pizza restaurant at the southeast corner of the Carling/Clyde/Cole signalized intersection. The municipal address of the development is 1640-1660 Carling Ave.

- The development is anticipated to be constructed in multiple phases, with Phase 1 consisting of two high-rise buildings and 810 total residential units constructed by 2026, Phase 2 consisting of three high-rise building and 691 total residential units constructed by 2031 and Phase 3 consisting of one high-rise building and 214 residential units constructed by 2036. The previous Canadian Tire building will be replaced in Phase 1, while the Boston Pizza restaurant is assumed to remain operational at its location in Phases 1 and 2 and replaced by the residential building in Phase 3.
- Number of parking spaces to be provided have not been confirmed yet. However, the development will meet the minimum City of Ottawa requirements by providing at least 858 vehicle parking spaces for tenants, 150 vehicle parking spaces for visitors and 858 (1,715 preferred) total bicycle parking spaces. Most parking spaces will be provided in an underground parking garage, with layby parking areas also available along the proposed internal public road.
- Access to the proposed development buildings' underground parking garages will be provided via a proposed internal public road that connects Carling Ave to Clyde Ave. The Carling Ave access, located approximately 9m east of the Carling/Clyde/Cole intersection, will permit right-in/right-out movements only, while the Clyde Ave access, located approximately 30m north of the Clyde/Doheny intersection, will permit all movements. In Phases 1 and 2, the Boston Pizza restaurant is assumed to be accessed via the internal public road. Both the Carling Ave and Clyde Ave accesses will be stop controlled at the site exit.
- The internal road will be designed as a local street with a 30km/h speed limit and traffic calming measures, as per City of Ottawa Guidelines. Proposed traffic calming measures include curb extensions at the accesses, internal curb extensions, on-street parking and a right-in/right-out channel island at the Carling Ave access. Additional potential measures include providing pedestrian crossings at various points, providing short road segments and providing internal speed tables while being mindful of the design related implications.
- The development is anticipated to generate approximately 724 total person trips during peak hours at full buildout, which consists of 188 to 223 vehicle trips, 75 to 78 passenger trips, 186 to 310 transit trips and 151 to 238 active transport (walking and cycling) trips. Taking into account the trips previously generated in existing conditions by the Canadian Tire store and the Boston Pizza restaurant, the net 'new' trips expected to be generated by the proposed development decrease significantly in the study area, even resulting in reduction of vehicle trips generated during the afternoon peak hours.
- Effective TDM Measures are expected to be implemented by the proponent as part of managing the travel demand of the development. The measures have not been identified as of yet but will be confirmed in the future Site Plan Application TIA submissions. TDM Measures will be important to manage personal auto mobile demand to and from the development in light of the future Carling Ave Transit Priority Measures.

Future Study Area Modifications

- Carling Avenue Transit Priority measures, which include converting a general traffic lane to a transit lane in both travel directions of Carling Ave, along different sections between Lincoln Fields and Bronson Ave, is expected to be implemented at the frontage of the development by 2023.
- The intersection of Carling/Churchill will be designed and constructed as a protected intersection.
- The eastbound and westbound left-turns at the intersection of Carling/Clyde/Cole will be modified to fully protected left-turn movements. The eastbound left-turn storage length will be increased from 20m to 70m.

- The westbound left-turn storage length at Carling/Broadview will be increased from 50m to 75m.
- Two adjacent developments are anticipated to generate notable traffic volumes in the study area and have been included in the total future background traffic volumes. This includes 1619-1655 Carling Ave located across Carling Ave from the proposed development site and 861 Clyde Ave, a large-scale residential development located directly south of the proposed development site.

Existing and Future Background Conditions

- In existing conditions, the intersection of Carling/Churchill ‘as a whole’ operates at capacity during the afternoon peak hour, with the corresponding critical EBL also operating at capacity. The intersection of Broadview/Carling operates near capacity during the afternoon peak hour, with the corresponding critical WBT movement operating at capacity. All other intersections provide acceptable traffic operations.
- The existing two-way traffic volumes along the nonarterial roads in the study area used to access the development, which includes Clyde Ave, Broadview Ave, Churchill Ave and Woodward Dr, were found to exceed the recommended ideal threshold identified in the TIA Guidelines. Refer to **Table 21** provided in the report for a comparison of the existing volumes to the TIA thresholds.
- A review of historical traffic volumes indicated that study area intersections have seen a traffic volume decline during the morning peak period. This trend is expected to continue in the future with the implementation of bus laned along Carling Ave. However, a conservative 1% per year background growth rate was applied between horizon years 2026 and 2031, for the through movements along Carling Ave to account for the influence of those developments of future developments.
- As a result of converting a traffic lane to a bus lane in the future, the total future background 2026, 2031 and 2036 conditions analysis indicate that overall study area intersections are anticipated to operate similar to or significantly worse compared to existing conditions, with higher delays and v/c ratios. This is shown particularly in the operations of the signalized intersections along Carling Ave, which are being affected by the lane changes.
- MMLoS analysis of boundary streets and signalized intersections for existing and future conditions will be provided at SPA.

Demand Rationalizations and Projected Conditions

- The future Carling Avenue Transit Priority Measures were expected to result in a decrease in traffic volumes relative to existing. For the purpose of this TIA Report, the following east-west reductions were applied to existing traffic volumes, in addition to no assumed background growth:
 - 10% in both the peak and off-peak traffic directions in the Phase 1 2026 horizon year which recognizes that the BRT lanes have been recently installed and the full reduction remains to be realized through long term adoption; and
 - 20% in the peak traffic direction and 15% in the off-peak traffic direction in both the 2031 and 2036 horizons which considers complete adoption of the BRT lanes, including relevant modal shifts and changes in traffic patterns.
- Similar to existing conditions, the total projected 2036 two-way traffic volumes along the nonarterial roads in the study area were found to exceed the recommended ideal threshold identified in the TIA Guidelines as follows:
 - Clyde Ave has traffic volumes up to approximately 960veh/h during peak hours, which is significantly higher than a local road threshold of 120veh/h. It is recommended that Clyde Ave be reclassified to a major collector road based on the volumes and the connectivity it provides

- between major roads. alternatively, vehicle access to/from both Woodward Dr and Laperriere Ave would need to be limited or restricted if major reduction in volumes is desired.
- Broadview Ave has traffic volumes up to approximately 660veh/h during peak hours, which is double a collector road threshold of 300veh/h. The City may consider reclassifying the road to a major collector, however, it is not considered critical.
 - Churchill Ave has traffic volumes up to approximately 1,030veh/h during peak hours, which is 70% higher than a major collector road threshold of 600veh/h. Given the ongoing west extension for LRT Stage 2 is expected to become operational in 2025, traffic volumes may see a reduction in the future as transit usage increases.
 - Woodward Dr has traffic volumes up to approximately 880veh/h during peak hours, which is higher than a major collector road threshold of 600veh/h. However, it is not considered critical with regards to current traffic operations of the road.
- Based on data obtained from OC Transpo, the existing average load of bus routes at their respective bus stops near the development ranges from about 10 to 24 persons during the peak hours. With bus capacities that range from approximately 65 occupants in the smallest OC Transpo vehicles to approximately 110 occupants in the largest vehicles, the proposed development transit trips are anticipated to be accommodated by the future transit services.
 - As an arterial road, Carling Ave is assumed to have a capacity of 1,000 veh/h per lane, which would be equivalent to a total capacity of 2,000 veh/h in each direction of travel, assuming 2 general traffic lanes and 1 bus lane in each direction. As such, total projected traffic volumes which are expected to fall below 2,000 veh/h (with demand rationalization) in the peak direction are expected to be accommodated.
 - With demand rationalization, intersection operations are expected to improve significantly in total projected 2026, 2031 and 2036 conditions, compared to existing conditions. By 2036, the intersection of Churchill/Carling ‘as a whole’ is expected to operate near capacity rather than over capacity during the afternoon peak hour. Critical movements at the intersection operate at capacity during both peak hours. traffic operations of the remaining study area intersections are considered acceptable, with intersections ‘as a whole’ operating at LOS ‘D’ or better during peak hours and critical movements operating at LOS ‘E’ or better during peak hours.
 - No future queueing issues were identified for the EBL and WBL movements at the intersection of Carling/Clyde. At the intersection of Carling/Churchill, the WBL movement is recommended to be increased from its current 65m storage length to accommodate the expected future storage length of 95m. The EBL storage length is also recommended to be extended from its current 65m storage length to accommodate the future traffic queues of up to approximately 120m. The EBL may be monitored once the transit priority measures are introduced along Carling Ave, to determine the extent and impact of the traffic queue.

The removal of the Canadian Tire store and the Boston Pizza restaurant is anticipated to result in negligible net change in auto traffic as a result of the proposed development’s site-generated traffic. Additionally, the Carling Transit Priority Measures being implemented in the future will result in decrease in traffic volumes along Carling Ave, which will improve traffic operations at the study area intersections. Therefore, proposed development is recommended to proceed from a transportation perspective.

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DRAFT

Appendix A:
Screening Form

City of Ottawa 2017 TIA Guidelines

Date

3-Nov-22

TIA Screening Form

Project

1640-1660 Carling Ave ZBLA

Project Number

478355-01000

| Results of Screening | Yes/No |
|---|--------|
| Development Satisfies the Trip Generation Trigger | Yes |
| Development Satisfies the Location Trigger | Yes |
| Development Satisfies the Safety Trigger | Yes |

Module 1.1 - Description of Proposed Development

| | |
|----------------------------------|--|
| Municipal Address | 1640-1660 Carling Ave, Ottawa, Ontario |
| Description of location | Southeast corner of Carling/Clyde, replacing existing Canadian Tire and Boston Pizza |
| Land Use | Six high-rise residential buildings and park |
| Development Size | 1,400 residential units |
| Number of Accesses and Locations | One internal road accessed via both Carling and Clyde |
| Development Phasing | Two phases assumed for TIA |
| Buildout Year | 2029 |
| Sketch Plan / Site Plan | See attached |

Module 1.2 - Trip Generation Trigger

| | |
|------------------------------|-------------------------|
| Land Use Type | Townhomes or Apartments |
| Development Size | 1400 Units |
| Trip Generation Trigger Met? | Yes |

Module 1.3 - Location Triggers

| | |
|--|--|
| Development Proposes a new driveway to a boundary street that is designated as part of the City's Transit Priority, Rapid Transit, or Spine Bicycle Networks (See Sheet 3) | Yes |
| Development is in a Design Priority Area (DPA) or Transit-oriented Development (TOD) zone. (See Sheet 3) | Yes Carling Arterial Mainstreet DPA |
| Location Trigger Met? | Yes |

Module 1.4 - Safety Triggers

| | |
|--|----------|
| Posted Speed Limit on any boundary road | <80 km/h |
| Horizontal / Vertical Curvature on a boundary street limits sight lines at a proposed driveway | No |
| A proposed driveway is within the area of influence of an adjacent traffic signal or roundabout (i.e. within 300 m of intersection in rural conditions, or within 150 m of intersection in urban/ suburban conditions) or within auxiliary lanes of an intersection; | Yes |
| A proposed driveway makes use of an existing median break that serves an existing site | No |
| There is a documented history of traffic operations or safety concerns on the boundary streets within 500 m of the development | No |
| The development includes a drive-thru facility | No |
| Safety Trigger Met? | Yes |

DRAFT

Appendix B:
Transit Route Maps



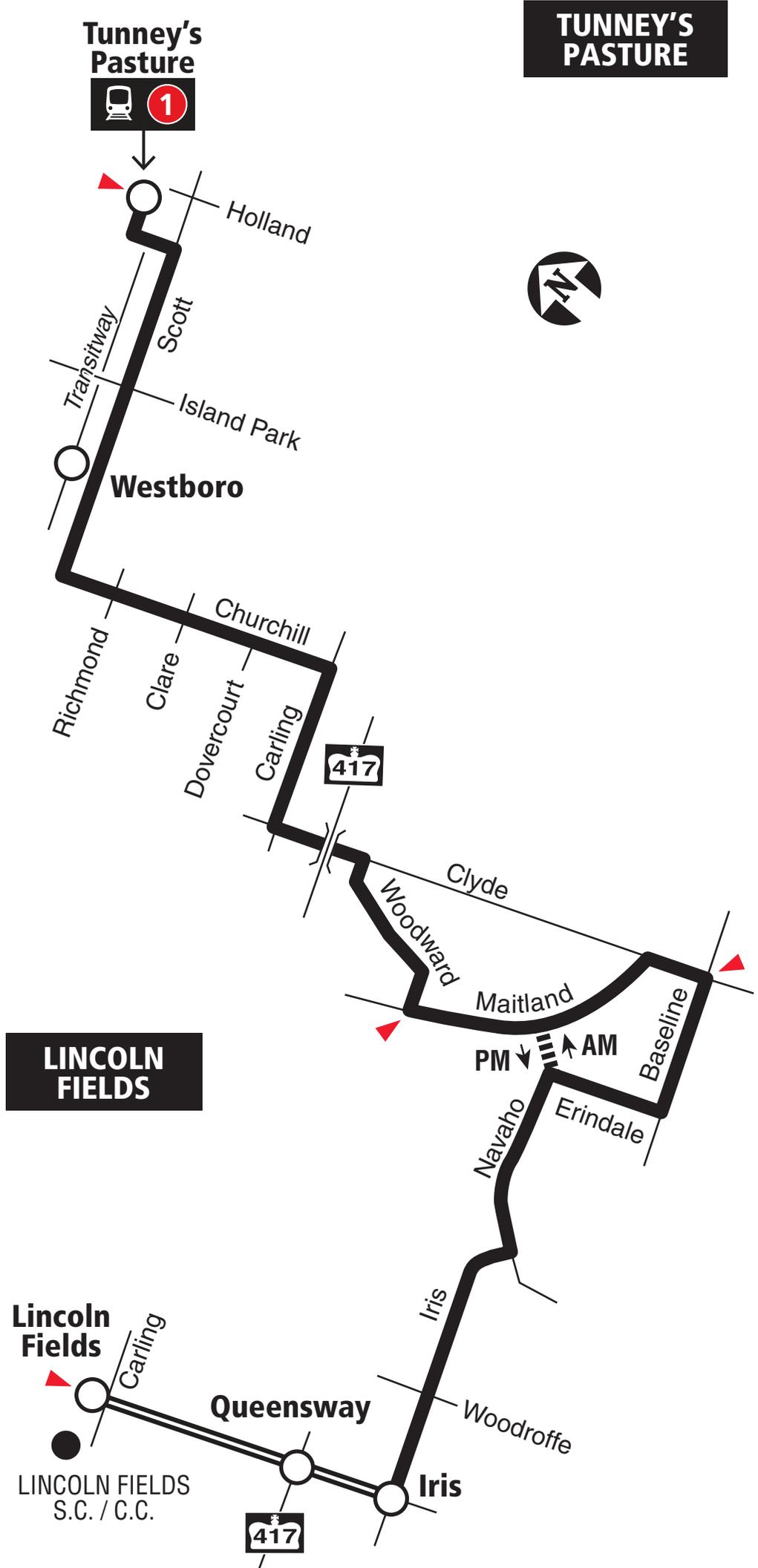
50

LINCOLN FIELDS TUNNEY'S PASTURE

Local

Monday to Saturday / Lundi au samedi

No service Sat. eve. or all day Sunday / Aucun service le soir le sam. ou toute la journée dimanche



Transitway & Station



Peak Periods only /
Périodes de pointe seulement



Timepoint / Heures de passage

2022.06



Schedule / Horaire 613-560-1000

Text / Texto* 560560

plus your four digit bus stop number / plus votre numéro d'arrêt à quatre chiffres

*Standard message rates may apply / Les tarifs réguliers de messagerie texte peuvent s'appliquer

Customer Service

Service à la clientèle **613-560-5000**

Lost and Found / Objets perdus **613-563-4011**

Security / Sécurité **613-741-2478**

Effective June 26, 2022

En vigueur 26 juin 2022



INFO 613-560-5000
octranspo.com



85

GATINEAU BAYSHORE

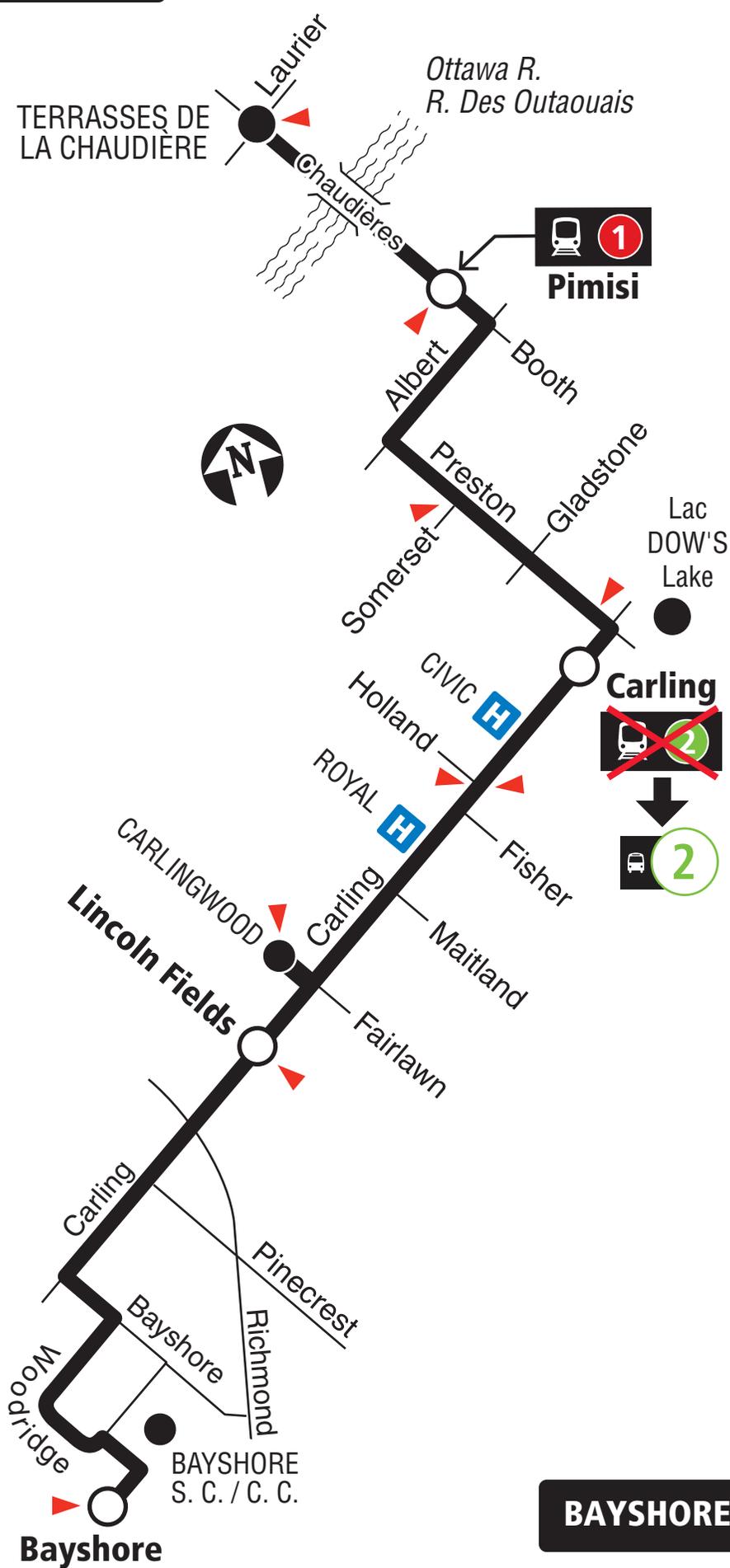
Fréquent

7 days a week / 7 jours par semaine

All day service

Service toute la journée

GATINEAU



BAYSHORE



Station



Timepoint / Heures de passage

2020.04



Schedule / Horaire..... 613-560-1000

Text / Texto 560560

plus your four digit bus stop number / plus votre numéro d'arrêt à quatre chiffres

Customer Service

Service à la clientèle **613-741-4390**

Lost and Found / Objets perdus..... **613-563-4011**

Security / Sécurité **613-741-2478**

Effective May 3, 2020

En vigueur 3 mai 2020



INFO 613-741-4390
octranspo.com

DRAFT

Appendix C:

Traffic Data

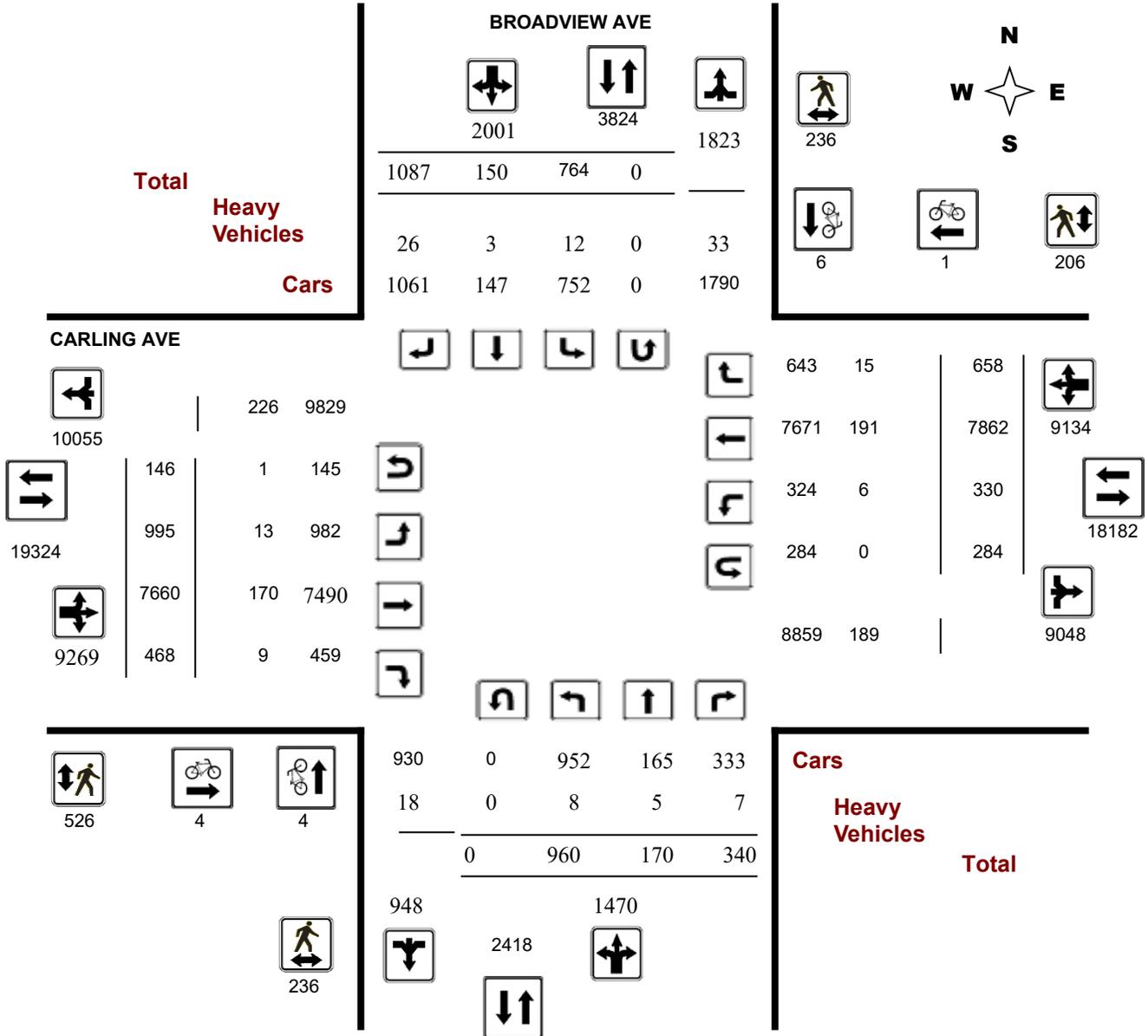
Survey Date: Thursday, April 20, 2017

WO No: 36953

Start Time: 07:00

Device: Miovision

Full Study Diagram



Turning Movement Count - Study Results

CARLING AVE @ BROADVIEW AVE

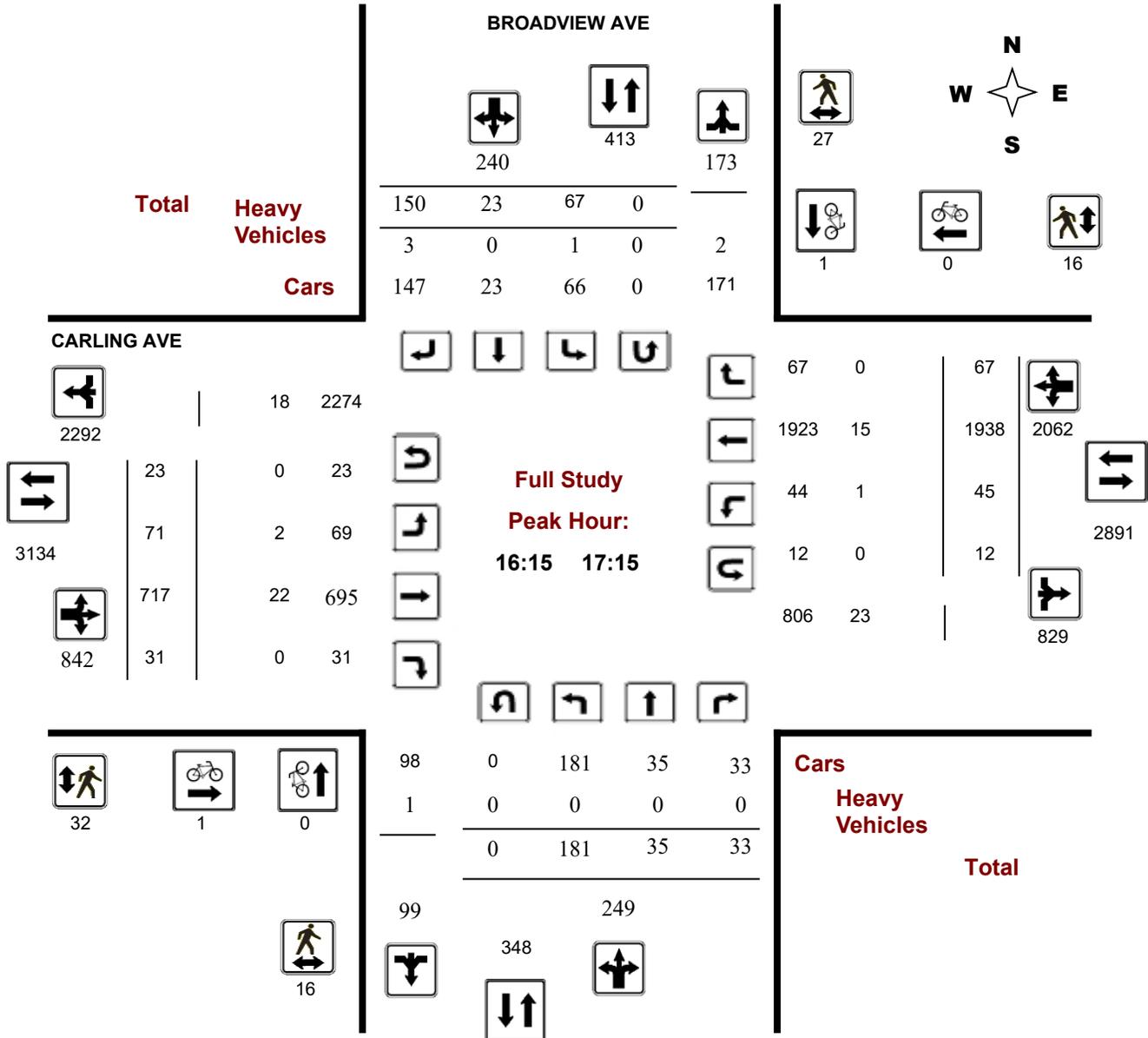
Survey Date: Thursday, April 20, 2017

WO No: 36953

Start Time: 07:00

Device: Miovision

Full Study Peak Hour Diagram



Turning Movement Count - Peak Hour Diagram

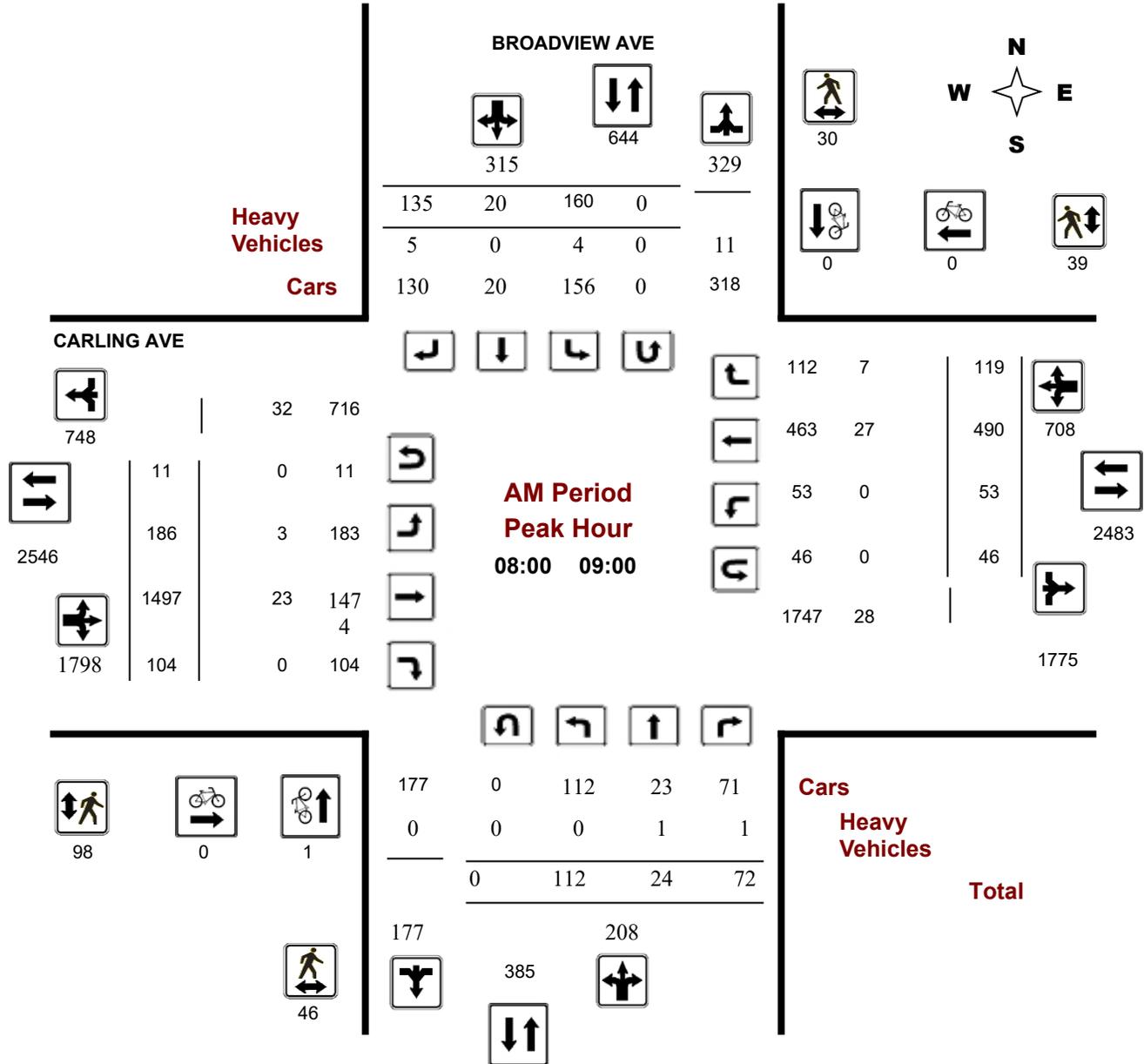
CARLING AVE @ BROADVIEW AVE

Survey Date: Thursday, April 20, 2017

Start Time: 07:00

WO No: 36953

Device: Miovision



Turning Movement Count - Peak Hour Diagram

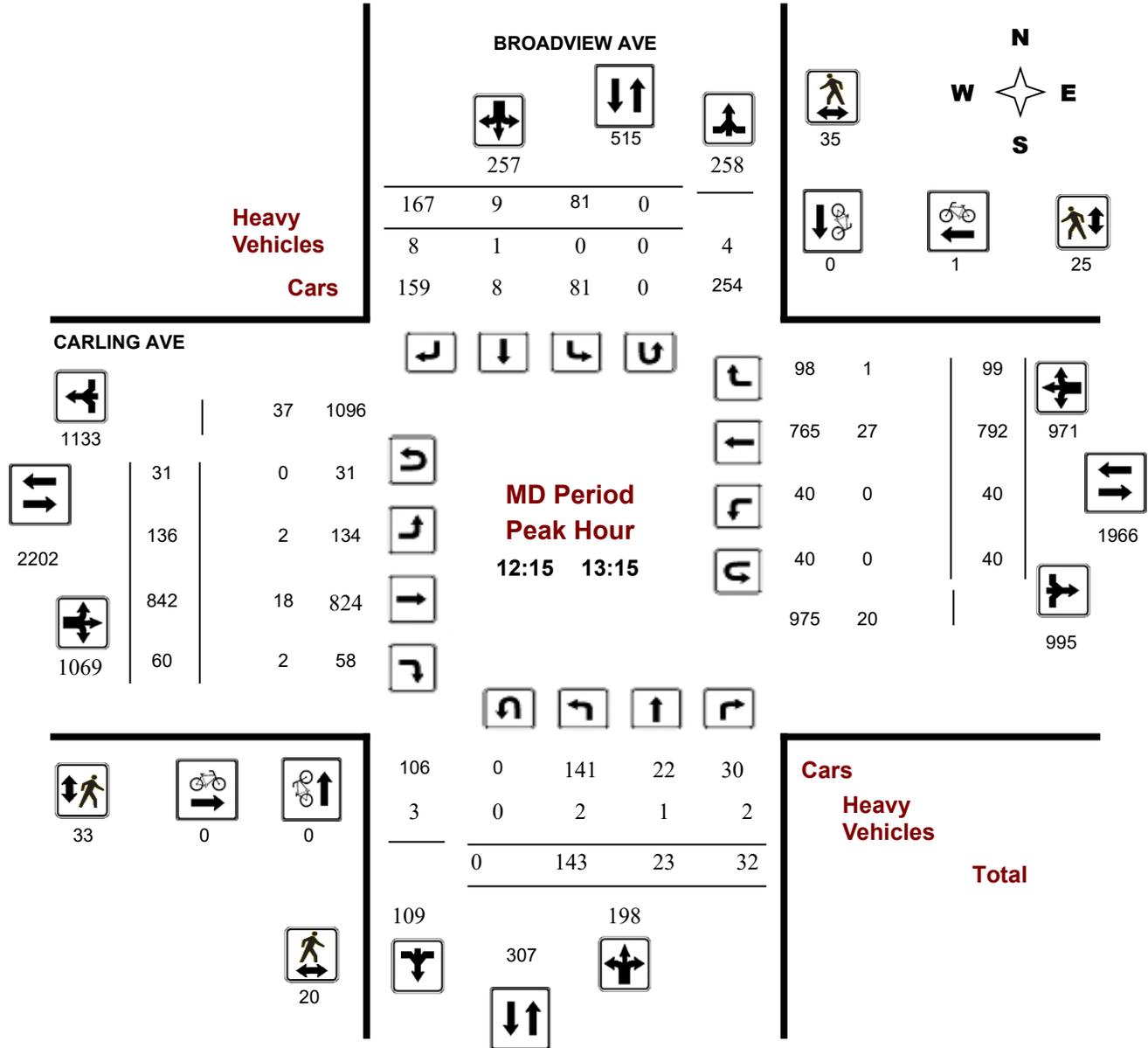
CARLING AVE @ BROADVIEW AVE

Survey Date: Thursday, April 20, 2017

Start Time: 07:00

WO No: 36953

Device: Miovision



Turning Movement Count - Peak Hour Diagram

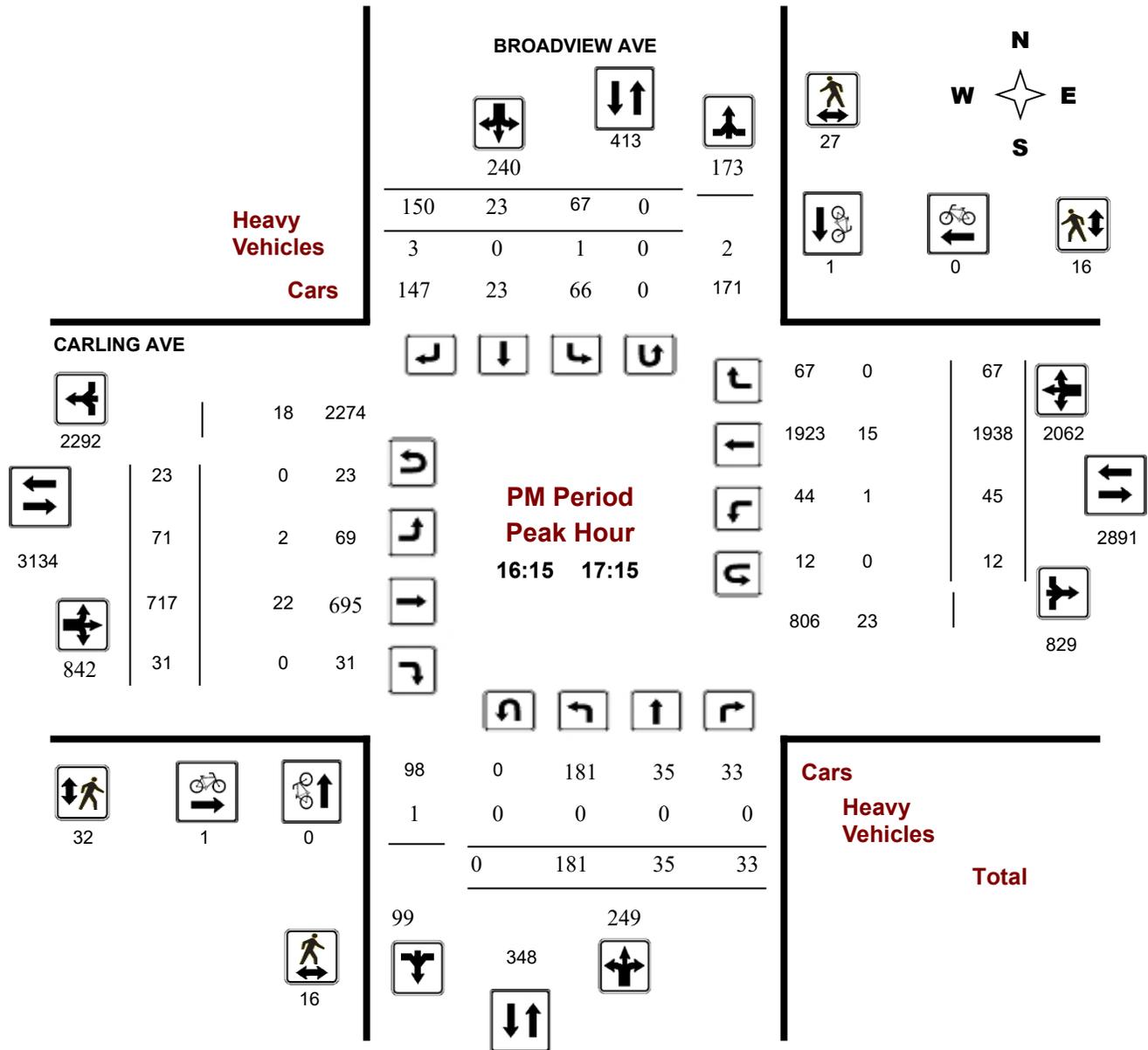
CARLING AVE @ BROADVIEW AVE

Survey Date: Thursday, April 20, 2017

Start Time: 07:00

WO No: 36953

Device: Miovision





Transportation Services - Traffic Services

Turning Movement Count - Study Results

CARLING AVE @ BROADVIEW AVE

Survey Date: Thursday, April 20, 2017

WO No: 36953

Start Time: 07:00

Device: Miovision

Full Study Summary (8 HR Standard)

Survey Date: Thursday, April 20, 2017

Total Observed U-Turns

AADT Factor

Northbound: 0 Southbound: 0
 Eastbound: 146 Westbound: 284

.90

BROADVIEW AVE

CARLING AVE

| Period | Northbound | | | | | Southbound | | | | | Eastbound | | | | | Westbound | | | | | Grand Total |
|------------------|------------|-----|-----|--------|---------|------------|-----|------|--------|---------|-----------|------|-----|--------|---------|-----------|------|-----|--------|---------|-------------|
| | LT | ST | RT | NB TOT | STR TOT | LT | ST | RT | SB TOT | STR TOT | LT | ST | RT | EB TOT | STR TOT | LT | ST | RT | WB TOT | STR TOT | |
| 07:00 08:00 | 38 | 20 | 32 | 90 | 230 | 57 | 14 | 69 | 140 | 230 | 140 | 1460 | 46 | 1646 | 2107 | 17 | 378 | 66 | 461 | 2107 | 2337 |
| 08:00 09:00 | 112 | 24 | 72 | 208 | 523 | 160 | 20 | 135 | 315 | 523 | 186 | 1497 | 104 | 1787 | 2449 | 53 | 490 | 119 | 662 | 2449 | 2972 |
| 09:00 10:00 | 67 | 24 | 46 | 137 | 382 | 102 | 22 | 121 | 245 | 382 | 152 | 998 | 51 | 1201 | 1945 | 39 | 628 | 77 | 744 | 1945 | 2327 |
| 11:30 12:30 | 106 | 17 | 43 | 166 | 413 | 86 | 10 | 151 | 247 | 413 | 112 | 749 | 64 | 925 | 1761 | 32 | 720 | 84 | 836 | 1761 | 2174 |
| 12:30 13:30 | 135 | 19 | 32 | 186 | 429 | 84 | 10 | 149 | 243 | 429 | 135 | 832 | 56 | 1023 | 1923 | 35 | 778 | 87 | 900 | 1923 | 2352 |
| 15:00 16:00 | 158 | 15 | 38 | 211 | 536 | 128 | 31 | 166 | 325 | 536 | 114 | 686 | 69 | 869 | 2385 | 56 | 1377 | 83 | 1516 | 2385 | 2921 |
| 16:00 17:00 | 184 | 29 | 43 | 256 | 528 | 80 | 22 | 170 | 272 | 528 | 74 | 721 | 40 | 835 | 2778 | 31 | 1845 | 67 | 1943 | 2778 | 3306 |
| 17:00 18:00 | 160 | 22 | 34 | 216 | 430 | 67 | 21 | 126 | 214 | 430 | 82 | 717 | 38 | 837 | 2625 | 67 | 1646 | 75 | 1788 | 2625 | 3055 |
| Sub Total | 960 | 170 | 340 | 1470 | 3471 | 764 | 150 | 1087 | 2001 | 3471 | 995 | 7660 | 468 | 9123 | 17973 | 330 | 7862 | 658 | 8850 | 17973 | 21444 |
| U Turns | | | | 0 | 0 | | | | 0 | 0 | | | | 146 | 430 | | | | 284 | 430 | 430 |
| Total | 960 | 170 | 340 | 1470 | 3471 | 764 | 150 | 1087 | 2001 | 3471 | 995 | 7660 | 468 | 9269 | 18403 | 330 | 7862 | 658 | 9134 | 18403 | 21874 |

EQ 12Hr 1334 236 473 **2043** 1062 208 1511 **2781** **4825** 1383 10647 651 **12884** 459 10928 915 **12696** **25580** **30405**
 Note: These values are calculated by multiplying the totals by the appropriate expansion factor. **1.39**

AVG 12Hr 1201 212 426 **1839** 956 246 1781 **2503** **4342** 1245 9582 586 **11596** 413 9835 824 **11426** **23022** **27364**
 Note: These volumes are calculated by multiplying the Equivalent 12 hr. totals by the AADT factor. **.90**

AVG 24Hr 1573 278 558 **2409** 1252 322 2333 **3279** **5688** 1631 12552 768 **15191** 541 12884 1079 **14968** **30159** **35847**
 Note: These volumes are calculated by multiplying the Average Daily 12 hr. totals by 12 to 24 expansion factor. **1.31**

Note: U-Turns provided for approach totals. Refer to 'U-Turn' Report for specific breakdown.



Transportation Services - Traffic Services

Turning Movement Count - Study Results

CARLING AVE @ BROADVIEW AVE

Survey Date: Thursday, April 20, 2017

WO No: 36953

Start Time: 07:00

Device: Miovision

Full Study 15 Minute Increments

BROADVIEW AVE

CARLING AVE

Northbound

Southbound

Eastbound

Westbound

| Time Period | LT | ST | RT | N TOT | LT | ST | RT | S TOT | STR TOT | LT | ST | RT | E TOT | LT | ST | RT | W TOT | STR TOT | Grand Total |
|---------------|------------|------------|------------|-------------|------------|------------|-------------|-------------|-------------|------------|-------------|------------|-------------|------------|-------------|------------|-------------|--------------|----------------|
| 07:00 07:15 | 5 | 0 | 8 | 13 | 9 | 3 | 11 | 23 | 36 | 18 | 303 | 6 | 328 | 2 | 71 | 9 | 98 | 426 | 462 |
| 07:15 07:30 | 5 | 2 | 6 | 13 | 10 | 2 | 14 | 26 | 39 | 28 | 320 | 11 | 360 | 3 | 80 | 10 | 103 | 463 | 502 |
| 07:30 07:45 | 13 | 5 | 9 | 27 | 13 | 3 | 17 | 33 | 60 | 38 | 442 | 14 | 494 | 5 | 107 | 15 | 140 | 634 | 694 |
| 07:45 08:00 | 15 | 13 | 9 | 37 | 25 | 6 | 27 | 58 | 95 | 56 | 395 | 15 | 469 | 7 | 120 | 32 | 166 | 635 | 730 |
| 08:00 08:15 | 14 | 6 | 10 | 30 | 36 | 4 | 29 | 69 | 99 | 29 | 452 | 20 | 501 | 10 | 122 | 31 | 174 | 675 | 774 |
| 08:15 08:30 | 25 | 7 | 24 | 56 | 38 | 5 | 29 | 72 | 128 | 44 | 347 | 24 | 420 | 12 | 107 | 30 | 159 | 579 | 707 |
| 08:30 08:45 | 45 | 7 | 20 | 72 | 43 | 5 | 42 | 90 | 162 | 58 | 384 | 25 | 472 | 14 | 118 | 38 | 180 | 652 | 814 |
| 08:45 09:00 | 28 | 4 | 18 | 50 | 43 | 6 | 35 | 84 | 134 | 55 | 314 | 35 | 405 | 17 | 143 | 20 | 195 | 600 | 734 |
| 09:00 09:15 | 22 | 9 | 18 | 49 | 27 | 6 | 27 | 60 | 109 | 37 | 314 | 19 | 372 | 6 | 133 | 23 | 169 | 541 | 650 |
| 09:15 09:30 | 12 | 2 | 11 | 25 | 26 | 8 | 34 | 68 | 93 | 46 | 239 | 10 | 300 | 9 | 140 | 17 | 178 | 478 | 571 |
| 09:30 09:45 | 19 | 5 | 8 | 32 | 23 | 4 | 26 | 53 | 85 | 35 | 229 | 11 | 276 | 16 | 187 | 13 | 223 | 499 | 584 |
| 09:45 10:00 | 14 | 8 | 9 | 31 | 26 | 4 | 34 | 64 | 95 | 34 | 216 | 11 | 266 | 8 | 168 | 24 | 216 | 482 | 577 |
| 11:30 11:45 | 19 | 4 | 10 | 33 | 23 | 2 | 37 | 62 | 95 | 24 | 178 | 11 | 217 | 8 | 170 | 20 | 207 | 424 | 519 |
| 11:45 12:00 | 31 | 3 | 16 | 50 | 21 | 2 | 35 | 58 | 108 | 28 | 190 | 18 | 237 | 5 | 170 | 14 | 197 | 434 | 542 |
| 12:00 12:15 | 27 | 4 | 9 | 40 | 24 | 3 | 36 | 63 | 103 | 35 | 193 | 20 | 254 | 11 | 188 | 17 | 228 | 482 | 585 |
| 12:15 12:30 | 29 | 6 | 8 | 43 | 18 | 3 | 43 | 64 | 107 | 25 | 188 | 15 | 235 | 8 | 192 | 33 | 243 | 478 | 585 |
| 12:30 12:45 | 44 | 5 | 9 | 58 | 24 | 4 | 44 | 72 | 130 | 38 | 218 | 11 | 272 | 7 | 208 | 23 | 248 | 520 | 650 |
| 12:45 13:00 | 32 | 4 | 5 | 41 | 23 | 1 | 26 | 50 | 91 | 41 | 202 | 17 | 271 | 17 | 208 | 23 | 258 | 529 | 620 |
| 13:00 13:15 | 38 | 8 | 10 | 56 | 16 | 1 | 54 | 71 | 127 | 32 | 234 | 17 | 291 | 8 | 184 | 20 | 222 | 513 | 640 |
| 13:15 13:30 | 21 | 2 | 8 | 31 | 21 | 4 | 25 | 50 | 81 | 24 | 178 | 11 | 224 | 3 | 178 | 21 | 208 | 432 | 513 |
| 15:00 15:15 | 29 | 4 | 11 | 44 | 45 | 8 | 38 | 91 | 135 | 25 | 164 | 13 | 206 | 5 | 305 | 24 | 343 | 549 | 684 |
| 15:15 15:30 | 41 | 3 | 9 | 53 | 38 | 8 | 41 | 87 | 140 | 19 | 168 | 24 | 216 | 16 | 314 | 20 | 357 | 573 | 713 |
| 15:30 15:45 | 56 | 5 | 8 | 69 | 25 | 6 | 48 | 79 | 148 | 36 | 189 | 11 | 241 | 21 | 384 | 19 | 434 | 675 | 823 |
| 15:45 16:00 | 32 | 3 | 10 | 45 | 20 | 9 | 39 | 68 | 113 | 34 | 165 | 21 | 226 | 14 | 374 | 20 | 412 | 638 | 751 |
| 16:00 16:15 | 57 | 5 | 17 | 79 | 30 | 4 | 49 | 83 | 162 | 24 | 189 | 17 | 235 | 4 | 417 | 17 | 451 | 686 | 848 |
| 16:15 16:30 | 40 | 7 | 5 | 52 | 16 | 7 | 50 | 73 | 125 | 17 | 190 | 7 | 217 | 8 | 463 | 18 | 493 | 710 | 835 |
| 16:30 16:45 | 42 | 7 | 11 | 60 | 17 | 4 | 40 | 61 | 121 | 17 | 170 | 7 | 199 | 9 | 489 | 18 | 519 | 718 | 839 |
| 16:45 17:00 | 45 | 10 | 10 | 65 | 17 | 7 | 31 | 55 | 120 | 16 | 172 | 9 | 207 | 10 | 476 | 14 | 503 | 710 | 830 |
| 17:00 17:15 | 54 | 11 | 7 | 72 | 17 | 5 | 29 | 51 | 123 | 21 | 185 | 8 | 219 | 18 | 510 | 17 | 547 | 766 | 889 |
| 17:15 17:30 | 43 | 5 | 9 | 57 | 13 | 4 | 30 | 47 | 104 | 19 | 185 | 9 | 220 | 18 | 435 | 21 | 477 | 697 | 801 |
| 17:30 17:45 | 33 | 3 | 14 | 50 | 17 | 7 | 36 | 60 | 110 | 26 | 168 | 8 | 207 | 17 | 371 | 19 | 416 | 623 | 733 |
| 17:45 18:00 | 30 | 3 | 4 | 37 | 20 | 5 | 31 | 56 | 93 | 16 | 179 | 13 | 212 | 14 | 330 | 18 | 370 | 582 | 675 |
| Total: | 960 | 170 | 340 | 1470 | 764 | 150 | 1087 | 2001 | 3471 | 995 | 7660 | 468 | 9269 | 330 | 7862 | 658 | 9134 | 18403 | 21,874 |

Note: U-Turns are included in Totals.



Transportation Services - Traffic Services

Turning Movement Count - Study Results

CARLING AVE @ BROADVIEW AVE

Survey Date: Thursday, April 20, 2017

WO No: 36953

Start Time: 07:00

Device: Miovision

Full Study Cyclist Volume

BROADVIEW AVE

CARLING AVE

| Time Period | Northbound | Southbound | Street Total | Eastbound | Westbound | Street Total | Grand Total |
|--------------|------------|------------|--------------|-----------|-----------|--------------|-------------|
| 07:00 07:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 07:15 07:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 07:30 07:45 | 1 | 0 | 1 | 0 | 0 | 0 | 1 |
| 07:45 08:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 08:00 08:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 08:15 08:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 08:30 08:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 08:45 09:00 | 1 | 0 | 1 | 0 | 0 | 0 | 1 |
| 09:00 09:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 09:15 09:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 09:30 09:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 09:45 10:00 | 0 | 1 | 1 | 0 | 0 | 0 | 1 |
| 11:30 11:45 | 0 | 0 | 0 | 1 | 0 | 1 | 1 |
| 11:45 12:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 12:00 12:15 | 1 | 0 | 1 | 0 | 0 | 0 | 1 |
| 12:15 12:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 12:30 12:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 12:45 13:00 | 0 | 0 | 0 | 0 | 1 | 1 | 1 |
| 13:00 13:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 13:15 13:30 | 0 | 0 | 0 | 1 | 0 | 1 | 1 |
| 15:00 15:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 15:15 15:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 15:30 15:45 | 0 | 0 | 0 | 1 | 0 | 1 | 1 |
| 15:45 16:00 | 1 | 1 | 2 | 0 | 0 | 0 | 2 |
| 16:00 16:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 16:15 16:30 | 0 | 0 | 0 | 1 | 0 | 1 | 1 |
| 16:30 16:45 | 0 | 1 | 1 | 0 | 0 | 0 | 1 |
| 16:45 17:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 17:00 17:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 17:15 17:30 | 0 | 1 | 1 | 0 | 0 | 0 | 1 |
| 17:30 17:45 | 0 | 1 | 1 | 0 | 0 | 0 | 1 |
| 17:45 18:00 | 0 | 1 | 1 | 0 | 0 | 0 | 1 |
| Total | 4 | 6 | 10 | 4 | 1 | 5 | 15 |



Transportation Services - Traffic Services

Turning Movement Count - Study Results

CARLING AVE @ BROADVIEW AVE

Survey Date: Thursday, April 20, 2017

WO No: 36953

Start Time: 07:00

Device: Miovision

Full Study Pedestrian Volume

BROADVIEW AVE

CARLING AVE

| Time Period | NB Approach (E or W Crossing) | SB Approach (E or W Crossing) | Total | EB Approach (N or S Crossing) | WB Approach (N or S Crossing) | Total | Grand Total |
|--------------------|----------------------------------|----------------------------------|------------|----------------------------------|----------------------------------|------------|-------------|
| 07:00 07:15 | 2 | 2 | 4 | 6 | 0 | 6 | 10 |
| 07:15 07:30 | 4 | 1 | 5 | 2 | 3 | 5 | 10 |
| 07:30 07:45 | 4 | 4 | 8 | 11 | 3 | 14 | 22 |
| 07:45 08:00 | 5 | 3 | 8 | 15 | 2 | 17 | 25 |
| 08:00 08:15 | 13 | 6 | 19 | 23 | 4 | 27 | 46 |
| 08:15 08:30 | 11 | 12 | 23 | 25 | 16 | 41 | 64 |
| 08:30 08:45 | 16 | 9 | 25 | 35 | 9 | 44 | 69 |
| 08:45 09:00 | 6 | 3 | 9 | 15 | 10 | 25 | 34 |
| 09:00 09:15 | 4 | 6 | 10 | 7 | 3 | 10 | 20 |
| 09:15 09:30 | 3 | 2 | 5 | 5 | 2 | 7 | 12 |
| 09:30 09:45 | 5 | 4 | 9 | 8 | 2 | 10 | 19 |
| 09:45 10:00 | 4 | 7 | 11 | 6 | 5 | 11 | 22 |
| 11:30 11:45 | 31 | 16 | 47 | 34 | 22 | 56 | 103 |
| 11:45 12:00 | 29 | 21 | 50 | 38 | 15 | 53 | 103 |
| 12:00 12:15 | 5 | 10 | 15 | 22 | 22 | 44 | 59 |
| 12:15 12:30 | 4 | 10 | 14 | 13 | 13 | 26 | 40 |
| 12:30 12:45 | 7 | 7 | 14 | 6 | 1 | 7 | 21 |
| 12:45 13:00 | 5 | 10 | 15 | 9 | 7 | 16 | 31 |
| 13:00 13:15 | 4 | 8 | 12 | 5 | 4 | 9 | 21 |
| 13:15 13:30 | 5 | 8 | 13 | 7 | 3 | 10 | 23 |
| 15:00 15:15 | 23 | 18 | 41 | 108 | 8 | 116 | 157 |
| 15:15 15:30 | 4 | 9 | 13 | 36 | 8 | 44 | 57 |
| 15:30 15:45 | 5 | 5 | 10 | 11 | 5 | 16 | 26 |
| 15:45 16:00 | 0 | 6 | 6 | 12 | 3 | 15 | 21 |
| 16:00 16:15 | 5 | 8 | 13 | 9 | 5 | 14 | 27 |
| 16:15 16:30 | 2 | 4 | 6 | 3 | 5 | 8 | 14 |
| 16:30 16:45 | 3 | 13 | 16 | 5 | 4 | 9 | 25 |
| 16:45 17:00 | 6 | 10 | 16 | 11 | 7 | 18 | 34 |
| 17:00 17:15 | 5 | 0 | 5 | 13 | 0 | 13 | 18 |
| 17:15 17:30 | 8 | 6 | 14 | 20 | 9 | 29 | 43 |
| 17:30 17:45 | 2 | 2 | 4 | 2 | 5 | 7 | 11 |
| 17:45 18:00 | 6 | 6 | 12 | 4 | 1 | 5 | 17 |
| Total | 236 | 236 | 472 | 526 | 206 | 732 | 1204 |



Transportation Services - Traffic Services

Turning Movement Count - Study Results

CARLING AVE @ BROADVIEW AVE

Survey Date: Thursday, April 20, 2017

WO No: 36953

Start Time: 07:00

Device: Miovision

Full Study Heavy Vehicles

BROADVIEW AVE

CARLING AVE

Northbound

Southbound

Eastbound

Westbound

| Time Period | Northbound | | | N TOT | Southbound | | | S TOT | STR TOT | Eastbound | | | E TOT | Westbound | | | W TOT | STR TOT | Grand Total |
|--------------------|------------|----|----|----------|------------|----|----|----------|------------|-----------|-----|----|----------|-----------|-----|----|----------|------------|----------------|
| | LT | ST | RT | | LT | ST | RT | | | LT | ST | RT | | LT | ST | RT | | | |
| 07:00 07:15 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 2 | 0 | 4 | 0 | 8 | 1 | 3 | 0 | 8 | 16 | 9 |
| 07:15 07:30 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 2 | 3 | 1 | 1 | 0 | 5 | 0 | 3 | 0 | 4 | 9 | 6 |
| 07:30 07:45 | 0 | 1 | 0 | 3 | 0 | 0 | 0 | 1 | 4 | 0 | 7 | 1 | 15 | 1 | 7 | 0 | 15 | 30 | 17 |
| 07:45 08:00 | 1 | 0 | 1 | 2 | 0 | 0 | 0 | 0 | 2 | 0 | 5 | 0 | 13 | 0 | 7 | 0 | 13 | 26 | 14 |
| 08:00 08:15 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 2 | 2 | 0 | 5 | 0 | 12 | 0 | 7 | 1 | 14 | 26 | 14 |
| 08:15 08:30 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 4 | 4 | 2 | 6 | 0 | 12 | 0 | 4 | 1 | 12 | 24 | 14 |
| 08:30 08:45 | 0 | 1 | 0 | 1 | 1 | 0 | 2 | 10 | 11 | 1 | 5 | 0 | 15 | 0 | 7 | 5 | 18 | 33 | 22 |
| 08:45 09:00 | 0 | 0 | 1 | 1 | 1 | 0 | 3 | 4 | 5 | 0 | 7 | 0 | 19 | 0 | 9 | 0 | 18 | 37 | 21 |
| 09:00 09:15 | 0 | 1 | 0 | 1 | 2 | 0 | 1 | 4 | 5 | 0 | 11 | 0 | 21 | 0 | 9 | 0 | 22 | 43 | 24 |
| 09:15 09:30 | 0 | 0 | 0 | 2 | 2 | 0 | 1 | 4 | 6 | 0 | 6 | 1 | 15 | 1 | 7 | 1 | 17 | 32 | 19 |
| 09:30 09:45 | 0 | 0 | 0 | 3 | 1 | 0 | 1 | 3 | 6 | 0 | 11 | 2 | 24 | 1 | 10 | 1 | 24 | 48 | 27 |
| 09:45 10:00 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 3 | 4 | 1 | 3 | 0 | 10 | 0 | 5 | 0 | 8 | 18 | 11 |
| 11:30 11:45 | 1 | 0 | 0 | 2 | 0 | 0 | 1 | 1 | 3 | 0 | 6 | 1 | 17 | 0 | 8 | 0 | 14 | 31 | 17 |
| 11:45 12:00 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 2 | 0 | 6 | 0 | 14 | 0 | 6 | 0 | 12 | 26 | 14 |
| 12:00 12:15 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 5 | 0 | 14 | 0 | 8 | 0 | 13 | 27 | 14 |
| 12:15 12:30 | 0 | 0 | 1 | 2 | 0 | 0 | 2 | 4 | 6 | 1 | 4 | 1 | 15 | 0 | 7 | 1 | 13 | 28 | 17 |
| 12:30 12:45 | 2 | 1 | 0 | 4 | 0 | 1 | 2 | 5 | 9 | 1 | 6 | 0 | 16 | 0 | 5 | 0 | 11 | 27 | 18 |
| 12:45 13:00 | 0 | 0 | 1 | 1 | 0 | 0 | 2 | 2 | 3 | 0 | 3 | 0 | 12 | 0 | 7 | 0 | 11 | 23 | 13 |
| 13:00 13:15 | 0 | 0 | 0 | 1 | 0 | 0 | 2 | 2 | 3 | 0 | 5 | 1 | 16 | 0 | 8 | 0 | 13 | 29 | 16 |
| 13:15 13:30 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 1 | 2 | 1 | 2 | 0 | 11 | 0 | 8 | 0 | 11 | 22 | 12 |
| 15:00 15:15 | 0 | 0 | 1 | 1 | 2 | 0 | 2 | 7 | 8 | 1 | 5 | 0 | 13 | 0 | 5 | 2 | 15 | 28 | 18 |
| 15:15 15:30 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 6 | 1 | 19 | 0 | 12 | 0 | 18 | 37 | 19 |
| 15:30 15:45 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 2 | 3 | 1 | 8 | 0 | 12 | 0 | 3 | 1 | 13 | 25 | 14 |
| 15:45 16:00 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 2 | 3 | 1 | 6 | 0 | 13 | 0 | 6 | 0 | 12 | 25 | 14 |
| 16:00 16:15 | 2 | 0 | 0 | 3 | 0 | 0 | 1 | 2 | 5 | 0 | 6 | 1 | 14 | 0 | 4 | 1 | 11 | 25 | 15 |
| 16:15 16:30 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 0 | 4 | 0 | 7 | 0 | 2 | 0 | 6 | 13 | 7 |
| 16:30 16:45 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 0 | 7 | 0 | 12 | 0 | 4 | 0 | 11 | 23 | 12 |
| 16:45 17:00 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 2 | 0 | 6 | 0 | 11 | 1 | 5 | 0 | 13 | 24 | 13 |
| 17:00 17:15 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 3 | 3 | 2 | 5 | 0 | 12 | 0 | 4 | 0 | 9 | 21 | 12 |
| 17:15 17:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 4 | 0 | 9 | 0 | 5 | 1 | 10 | 19 | 10 |
| 17:30 17:45 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 3 | 0 | 7 | 1 | 4 | 0 | 8 | 15 | 8 |
| 17:45 18:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 6 | 0 | 2 | 0 | 4 | 10 | 5 |
| Total: None | 8 | 5 | 7 | 38 | 12 | 3 | 26 | 74 | 112 | 13 | 170 | 9 | 419 | 6 | 191 | 15 | 401 | 820 | 466 |



Transportation Services - Traffic Services

Turning Movement Count - Study Results

CARLING AVE @ BROADVIEW AVE

Survey Date: Thursday, April 20, 2017

WO No: 36953

Start Time: 07:00

Device: Miovision

Full Study 15 Minute U-Turn Total

BROADVIEW AVE

CARLING AVE

| Time Period | | Northbound U-Turn Total | Southbound U-Turn Total | Eastbound U-Turn Total | Westbound U-Turn Total | Total |
|-------------|-------|----------------------------|----------------------------|---------------------------|---------------------------|-------|
| 07:00 | 07:15 | 0 | 0 | 1 | 16 | 17 |
| 07:15 | 07:30 | 0 | 0 | 1 | 10 | 11 |
| 07:30 | 07:45 | 0 | 0 | 0 | 13 | 13 |
| 07:45 | 08:00 | 0 | 0 | 3 | 7 | 10 |
| 08:00 | 08:15 | 0 | 0 | 0 | 11 | 11 |
| 08:15 | 08:30 | 0 | 0 | 5 | 10 | 15 |
| 08:30 | 08:45 | 0 | 0 | 5 | 10 | 15 |
| 08:45 | 09:00 | 0 | 0 | 1 | 15 | 16 |
| 09:00 | 09:15 | 0 | 0 | 2 | 7 | 9 |
| 09:15 | 09:30 | 0 | 0 | 5 | 12 | 17 |
| 09:30 | 09:45 | 0 | 0 | 1 | 7 | 8 |
| 09:45 | 10:00 | 0 | 0 | 5 | 16 | 21 |
| 11:30 | 11:45 | 0 | 0 | 4 | 9 | 13 |
| 11:45 | 12:00 | 0 | 0 | 1 | 8 | 9 |
| 12:00 | 12:15 | 0 | 0 | 6 | 12 | 18 |
| 12:15 | 12:30 | 0 | 0 | 7 | 10 | 17 |
| 12:30 | 12:45 | 0 | 0 | 5 | 10 | 15 |
| 12:45 | 13:00 | 0 | 0 | 11 | 10 | 21 |
| 13:00 | 13:15 | 0 | 0 | 8 | 10 | 18 |
| 13:15 | 13:30 | 0 | 0 | 11 | 6 | 17 |
| 15:00 | 15:15 | 0 | 0 | 4 | 9 | 13 |
| 15:15 | 15:30 | 0 | 0 | 5 | 7 | 12 |
| 15:30 | 15:45 | 0 | 0 | 5 | 10 | 15 |
| 15:45 | 16:00 | 0 | 0 | 6 | 4 | 10 |
| 16:00 | 16:15 | 0 | 0 | 5 | 13 | 18 |
| 16:15 | 16:30 | 0 | 0 | 3 | 4 | 7 |
| 16:30 | 16:45 | 0 | 0 | 5 | 3 | 8 |
| 16:45 | 17:00 | 0 | 0 | 10 | 3 | 13 |
| 17:00 | 17:15 | 0 | 0 | 5 | 2 | 7 |
| 17:15 | 17:30 | 0 | 0 | 7 | 3 | 10 |
| 17:30 | 17:45 | 0 | 0 | 5 | 9 | 14 |
| 17:45 | 18:00 | 0 | 0 | 4 | 8 | 12 |
| Total | | 0 | 0 | 146 | 284 | 430 |

Turning Movement Count - Study Results

CARLING AVE @ CLYDE AVE/COLE AVE

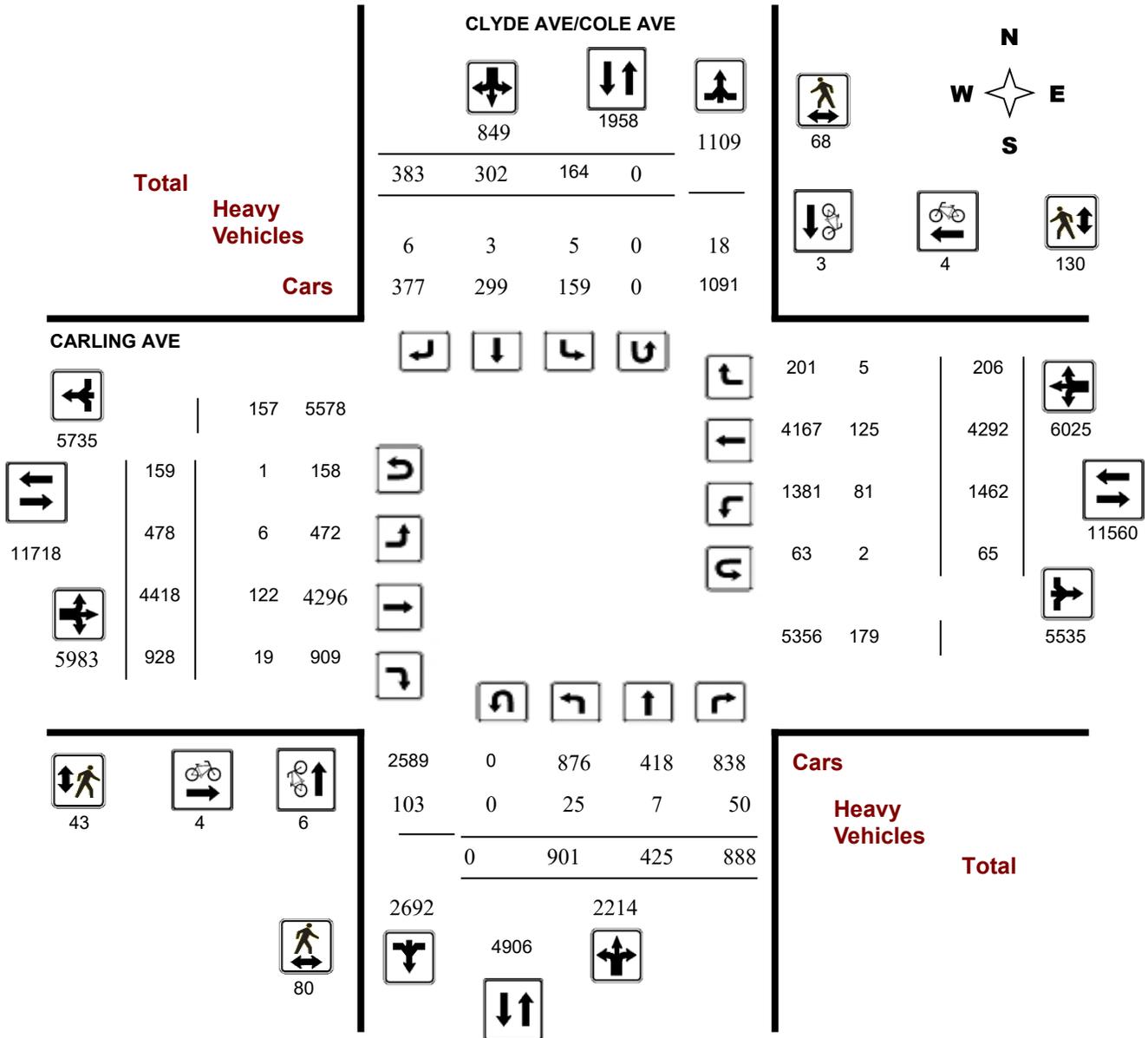
Survey Date: Wednesday, February 23, 2022

WO No: 40170

Start Time: 07:00

Device: Miovision

Full Study Diagram



Turning Movement Count - Study Results

CARLING AVE @ CLYDE AVE/COLE AVE

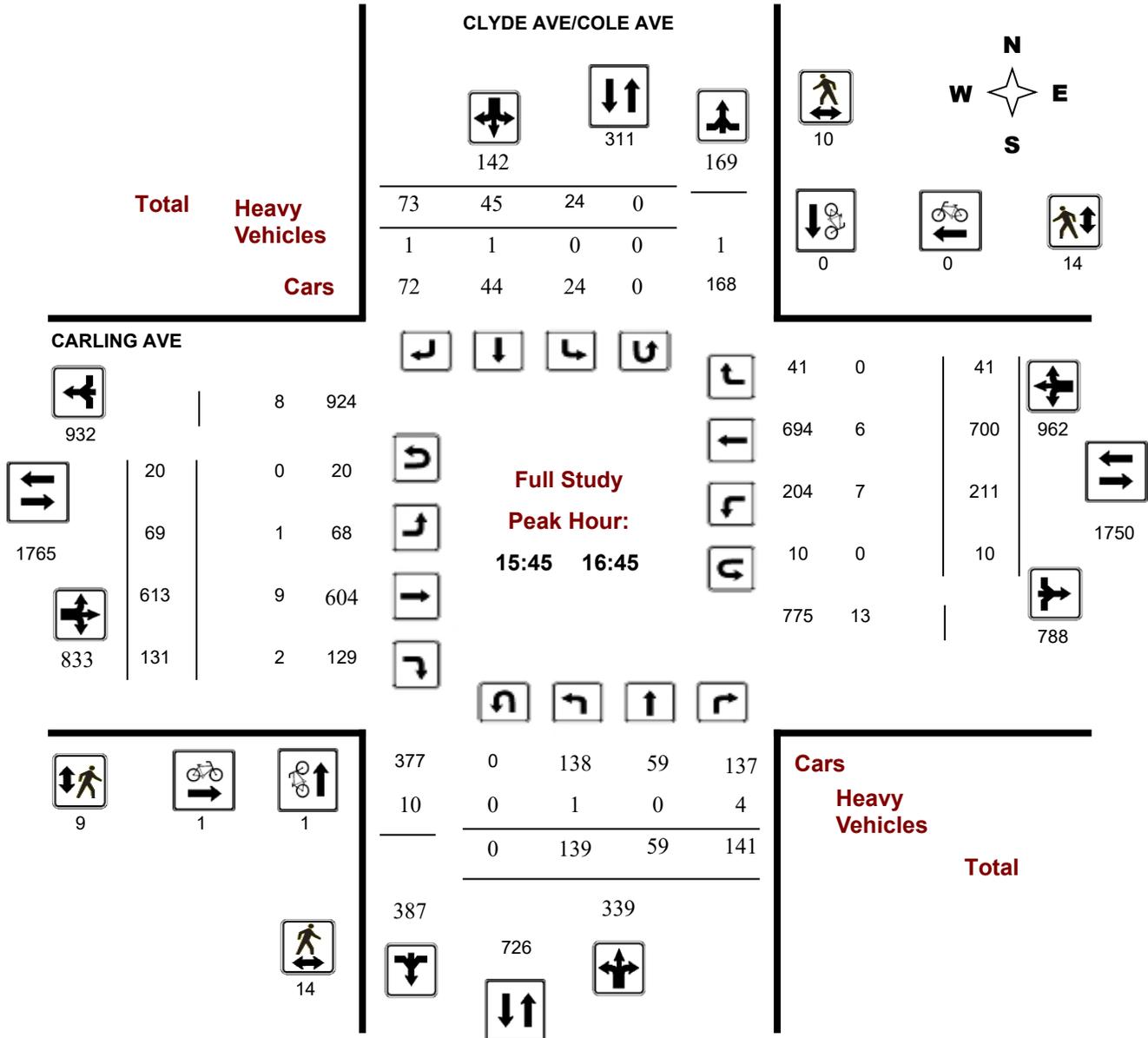
Survey Date: Wednesday, February 23, 2022

WO No: 40170

Start Time: 07:00

Device: Miovision

Full Study Peak Hour Diagram



Turning Movement Count - Peak Hour Diagram

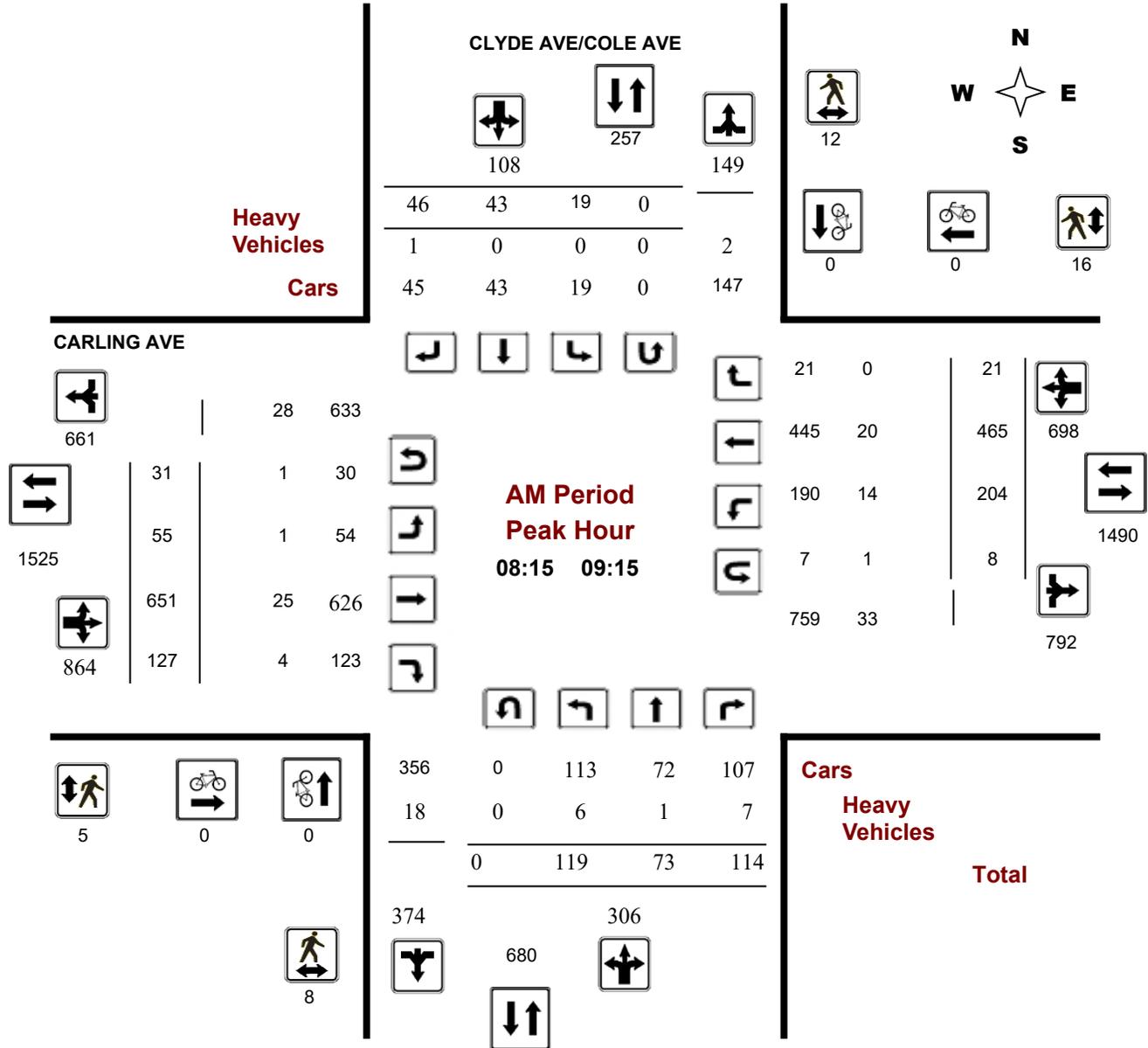
CARLING AVE @ CLYDE AVE/COLE AVE

Survey Date: Wednesday, February 23, 2022

Start Time: 07:00

WO No: 40170

Device: Miovision



Comments

Turning Movement Count - Peak Hour Diagram

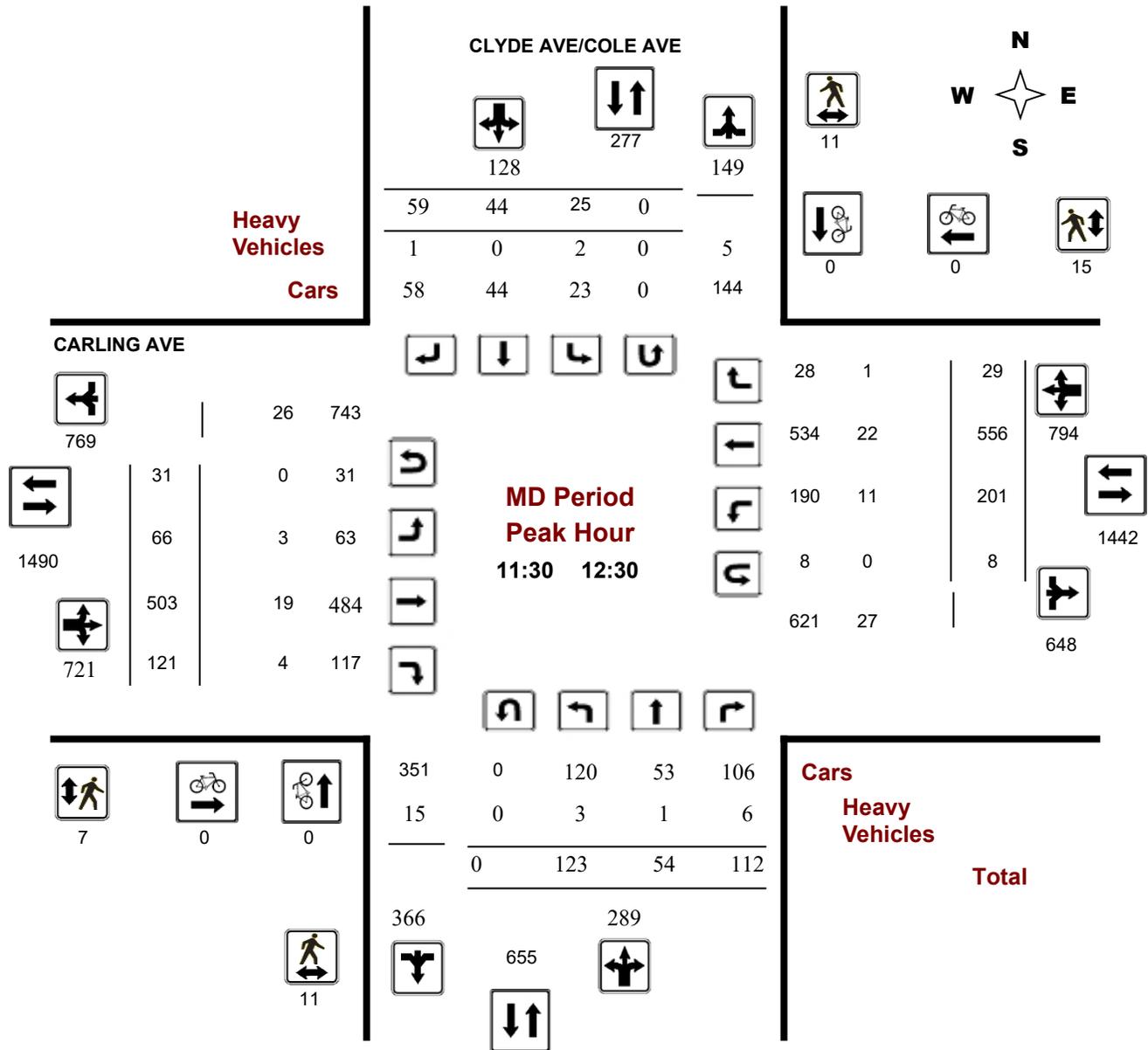
CARLING AVE @ CLYDE AVE/COLE AVE

Survey Date: Wednesday, February 23, 2022

Start Time: 07:00

WO No: 40170

Device: Miovision



Turning Movement Count - Peak Hour Diagram

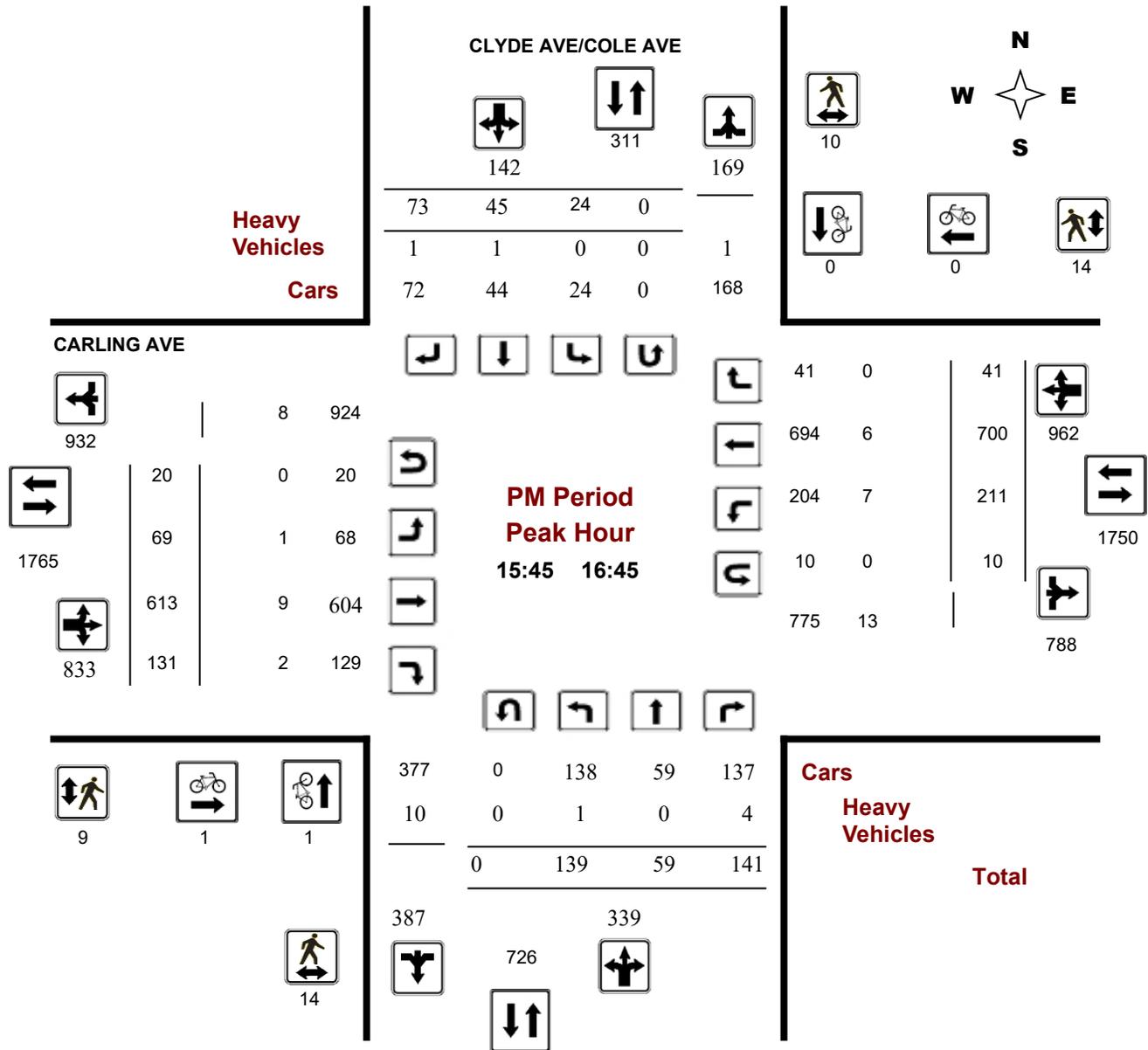
CARLING AVE @ CLYDE AVE/COLE AVE

Survey Date: Wednesday, February 23, 2022

Start Time: 07:00

WO No: 40170

Device: Miovision





Transportation Services - Traffic Services

Turning Movement Count - Study Results

CARLING AVE @ CLYDE AVE/COLE AVE

Survey Date: Wednesday, February 23, 2022

WO No: 40170

Start Time: 07:00

Device: Miovision

Full Study Summary (8 HR Standard)

Survey Date: Wednesday, February 23, 2022

Total Observed U-Turns
 Northbound: 0 Southbound: 0
 Eastbound: 159 Westbound: 65

AADT Factor
 1.00

| CLYDE AVE/COLE AVE | | | | | | | | | | CARLING AVE | | | | | | | | | | Grand Total |
|---|------|-----|------|--------|------------|-----|-----|--------|---------|-------------|------|------|-------------|------|-----------|-----|--------|---------|-------|-------------|
| Northbound | | | | | Southbound | | | | | Eastbound | | | | | Westbound | | | | | |
| Period | LT | ST | RT | NB TOT | LT | ST | RT | SB TOT | STR TOT | LT | ST | RT | EB TOT | LT | ST | RT | WB TOT | STR TOT | | |
| 07:00 08:00 | 49 | 22 | 52 | 123 | 11 | 18 | 25 | 54 | 177 | 35 | 522 | 67 | 624 | 142 | 300 | 8 | 450 | 1074 | 1251 | |
| 08:00 09:00 | 123 | 66 | 87 | 276 | 17 | 39 | 49 | 105 | 381 | 58 | 663 | 131 | 852 | 205 | 461 | 18 | 684 | 1536 | 1917 | |
| 09:00 10:00 | 80 | 30 | 122 | 232 | 12 | 27 | 38 | 77 | 309 | 61 | 529 | 95 | 685 | 183 | 410 | 24 | 617 | 1302 | 1611 | |
| 11:30 12:30 | 123 | 54 | 112 | 289 | 25 | 44 | 59 | 128 | 417 | 66 | 503 | 121 | 690 | 201 | 556 | 29 | 786 | 1476 | 1893 | |
| 12:30 13:30 | 124 | 48 | 130 | 302 | 25 | 44 | 43 | 112 | 414 | 68 | 503 | 114 | 685 | 187 | 551 | 19 | 757 | 1442 | 1856 | |
| 15:00 16:00 | 131 | 78 | 141 | 350 | 29 | 40 | 40 | 109 | 459 | 55 | 619 | 139 | 813 | 180 | 689 | 26 | 895 | 1708 | 2167 | |
| 16:00 17:00 | 142 | 59 | 132 | 333 | 22 | 47 | 74 | 143 | 476 | 70 | 573 | 122 | 765 | 195 | 700 | 42 | 937 | 1702 | 2178 | |
| 17:00 18:00 | 129 | 68 | 112 | 309 | 23 | 43 | 55 | 121 | 430 | 65 | 506 | 139 | 710 | 169 | 625 | 40 | 834 | 1544 | 1974 | |
| Sub Total | 901 | 425 | 888 | 2214 | 164 | 302 | 383 | 849 | 3063 | 478 | 4418 | 928 | 5824 | 1462 | 4292 | 206 | 5960 | 11784 | 14847 | |
| U Turns | | | | 0 | | | | 0 | 0 | | | | 159 | | | | 65 | 224 | 224 | |
| Total | 901 | 425 | 888 | 2214 | 164 | 302 | 383 | 849 | 3063 | 478 | 4418 | 928 | 5983 | 1462 | 4292 | 206 | 6025 | 12008 | 15071 | |
| EQ 12Hr | 1252 | 591 | 1234 | 3077 | 228 | 420 | 532 | 1180 | 4258 | 664 | 6141 | 1290 | 8316 | 2032 | 5966 | 286 | 8375 | 16691 | 20949 | |
| Note: These values are calculated by multiplying the totals by the appropriate expansion factor. | | | | | | | | | | | | | 1.39 | | | | | | | |
| AVG 12Hr | 1252 | 591 | 1234 | 3077 | 228 | 550 | 697 | 1180 | 4258 | 664 | 6141 | 1290 | 8316 | 2032 | 5966 | 286 | 8375 | 16691 | 20949 | |
| Note: These volumes are calculated by multiplying the Equivalent 12 hr. totals by the AADT factor. | | | | | | | | | | | | | 1.00 | | | | | | | |
| AVG 24Hr | 1640 | 774 | 1617 | 4031 | 299 | 720 | 913 | 1546 | 5578 | 870 | 8045 | 1690 | 10894 | 2662 | 7815 | 375 | 10971 | 21865 | 27443 | |
| Note: These volumes are calculated by multiplying the Average Daily 12 hr. totals by 12 to 24 expansion factor. | | | | | | | | | | | | | 1.31 | | | | | | | |
| Note: U-Turns provided for approach totals. Refer to 'U-Turn' Report for specific breakdown. | | | | | | | | | | | | | | | | | | | | |



Transportation Services - Traffic Services

Turning Movement Count - Study Results

CARLING AVE @ CLYDE AVE/COLE AVE

Survey Date: Wednesday, February 23, 2022

WO No: 40170

Start Time: 07:00

Device: Miovision

Full Study 15 Minute Increments

CLYDE AVE/COLE AVE

CARLING AVE

Northbound

Southbound

Eastbound

Westbound

| Time Period | LT | ST | RT | N TOT | LT | ST | RT | S TOT | STR TOT | LT | ST | RT | E TOT | LT | ST | RT | W TOT | STR TOT | Grand Total |
|---------------|------------|------------|------------|-------------|------------|------------|------------|------------|-------------|------------|-------------|------------|-------------|-------------|-------------|------------|-------------|--------------|----------------|
| 07:00 07:15 | 8 | 6 | 20 | 34 | 0 | 6 | 2 | 8 | 42 | 5 | 105 | 15 | 128 | 28 | 67 | 3 | 100 | 228 | 270 |
| 07:15 07:30 | 14 | 3 | 4 | 21 | 4 | 2 | 7 | 13 | 34 | 9 | 123 | 22 | 158 | 34 | 63 | 5 | 102 | 260 | 294 |
| 07:30 07:45 | 9 | 5 | 17 | 31 | 2 | 4 | 6 | 12 | 43 | 9 | 147 | 15 | 172 | 34 | 82 | 0 | 118 | 290 | 333 |
| 07:45 08:00 | 18 | 8 | 11 | 37 | 5 | 6 | 10 | 21 | 58 | 12 | 147 | 15 | 180 | 46 | 88 | 0 | 134 | 314 | 372 |
| 08:00 08:15 | 27 | 9 | 10 | 46 | 2 | 5 | 11 | 18 | 64 | 15 | 145 | 29 | 191 | 53 | 106 | 2 | 161 | 352 | 416 |
| 08:15 08:30 | 31 | 11 | 18 | 60 | 3 | 10 | 11 | 24 | 84 | 18 | 175 | 34 | 237 | 52 | 112 | 3 | 171 | 408 | 492 |
| 08:30 08:45 | 33 | 24 | 31 | 88 | 8 | 11 | 17 | 36 | 124 | 12 | 180 | 34 | 233 | 38 | 111 | 6 | 157 | 390 | 514 |
| 08:45 09:00 | 32 | 22 | 28 | 82 | 4 | 13 | 10 | 27 | 109 | 13 | 163 | 34 | 216 | 62 | 132 | 7 | 202 | 418 | 527 |
| 09:00 09:15 | 23 | 16 | 37 | 76 | 4 | 9 | 8 | 21 | 97 | 12 | 133 | 25 | 178 | 52 | 110 | 5 | 168 | 346 | 443 |
| 09:15 09:30 | 23 | 4 | 28 | 55 | 1 | 6 | 15 | 22 | 77 | 21 | 150 | 25 | 198 | 52 | 97 | 7 | 157 | 355 | 432 |
| 09:30 09:45 | 21 | 2 | 25 | 48 | 4 | 9 | 7 | 20 | 68 | 18 | 133 | 23 | 177 | 35 | 102 | 5 | 143 | 320 | 388 |
| 09:45 10:00 | 13 | 8 | 32 | 53 | 3 | 3 | 8 | 14 | 67 | 10 | 113 | 22 | 150 | 44 | 101 | 7 | 153 | 303 | 370 |
| 11:30 11:45 | 25 | 14 | 25 | 64 | 6 | 8 | 12 | 26 | 90 | 20 | 126 | 28 | 180 | 66 | 130 | 5 | 203 | 383 | 473 |
| 11:45 12:00 | 26 | 20 | 33 | 79 | 3 | 11 | 23 | 37 | 116 | 14 | 136 | 26 | 185 | 48 | 150 | 6 | 205 | 390 | 506 |
| 12:00 12:15 | 31 | 10 | 31 | 72 | 14 | 11 | 12 | 37 | 109 | 18 | 123 | 36 | 183 | 43 | 153 | 13 | 210 | 393 | 502 |
| 12:15 12:30 | 41 | 10 | 23 | 74 | 2 | 14 | 12 | 28 | 102 | 14 | 118 | 31 | 173 | 44 | 123 | 5 | 176 | 349 | 451 |
| 12:30 12:45 | 35 | 9 | 31 | 75 | 5 | 10 | 16 | 31 | 106 | 24 | 110 | 26 | 162 | 45 | 151 | 4 | 202 | 364 | 470 |
| 12:45 13:00 | 32 | 16 | 25 | 73 | 7 | 12 | 7 | 26 | 99 | 18 | 161 | 32 | 216 | 56 | 127 | 7 | 193 | 409 | 508 |
| 13:00 13:15 | 30 | 17 | 38 | 85 | 9 | 14 | 13 | 36 | 121 | 14 | 95 | 28 | 141 | 40 | 141 | 5 | 188 | 329 | 450 |
| 13:15 13:30 | 27 | 6 | 36 | 69 | 4 | 8 | 7 | 19 | 88 | 12 | 137 | 28 | 182 | 46 | 132 | 3 | 185 | 367 | 455 |
| 15:00 15:15 | 35 | 22 | 31 | 88 | 11 | 7 | 4 | 22 | 110 | 11 | 117 | 23 | 154 | 46 | 164 | 9 | 220 | 374 | 484 |
| 15:15 15:30 | 41 | 16 | 50 | 107 | 5 | 20 | 12 | 37 | 144 | 9 | 179 | 49 | 240 | 41 | 167 | 5 | 215 | 455 | 599 |
| 15:30 15:45 | 25 | 28 | 28 | 81 | 4 | 3 | 12 | 19 | 100 | 18 | 154 | 28 | 202 | 42 | 179 | 4 | 225 | 427 | 527 |
| 15:45 16:00 | 30 | 12 | 32 | 74 | 9 | 10 | 12 | 31 | 105 | 17 | 169 | 39 | 226 | 51 | 179 | 8 | 240 | 466 | 571 |
| 16:00 16:15 | 40 | 20 | 46 | 106 | 7 | 9 | 24 | 40 | 146 | 16 | 140 | 30 | 192 | 51 | 180 | 5 | 238 | 430 | 576 |
| 16:15 16:30 | 32 | 7 | 32 | 71 | 4 | 15 | 20 | 39 | 110 | 21 | 159 | 35 | 219 | 55 | 173 | 11 | 243 | 462 | 572 |
| 16:30 16:45 | 37 | 20 | 31 | 88 | 4 | 11 | 17 | 32 | 120 | 15 | 145 | 27 | 196 | 54 | 168 | 17 | 241 | 437 | 557 |
| 16:45 17:00 | 33 | 12 | 23 | 68 | 7 | 12 | 13 | 32 | 100 | 18 | 129 | 30 | 182 | 35 | 179 | 9 | 224 | 406 | 506 |
| 17:00 17:15 | 38 | 26 | 33 | 97 | 3 | 10 | 13 | 26 | 123 | 16 | 150 | 42 | 210 | 45 | 156 | 10 | 219 | 429 | 552 |
| 17:15 17:30 | 38 | 8 | 25 | 71 | 6 | 13 | 18 | 37 | 108 | 23 | 127 | 31 | 193 | 49 | 178 | 11 | 238 | 431 | 539 |
| 17:30 17:45 | 26 | 22 | 33 | 81 | 11 | 8 | 17 | 36 | 117 | 15 | 126 | 34 | 180 | 36 | 163 | 10 | 214 | 394 | 511 |
| 17:45 18:00 | 27 | 12 | 21 | 60 | 3 | 12 | 7 | 22 | 82 | 11 | 103 | 32 | 149 | 39 | 128 | 9 | 180 | 329 | 411 |
| Total: | 901 | 425 | 888 | 2214 | 164 | 302 | 383 | 849 | 3063 | 478 | 4418 | 928 | 5983 | 1462 | 4292 | 206 | 6025 | 12008 | 15,071 |

Note: U-Turns are included in Totals.



Transportation Services - Traffic Services

Turning Movement Count - Study Results

CARLING AVE @ CLYDE AVE/COLE AVE

Survey Date: Wednesday, February 23, 2022

WO No: 40170

Start Time: 07:00

Device: Miovision

Full Study Cyclist Volume

CLYDE AVE/COLE AVE

CARLING AVE

| Time Period | Northbound | Southbound | Street Total | Eastbound | Westbound | Street Total | Grand Total |
|--------------|------------|------------|--------------|-----------|-----------|--------------|-------------|
| 07:00 07:15 | 0 | 0 | 0 | 0 | 1 | 1 | 1 |
| 07:15 07:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 07:30 07:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 07:45 08:00 | 1 | 0 | 1 | 1 | 0 | 1 | 2 |
| 08:00 08:15 | 0 | 1 | 1 | 0 | 0 | 0 | 1 |
| 08:15 08:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 08:30 08:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 08:45 09:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 09:00 09:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 09:15 09:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 09:30 09:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 09:45 10:00 | 2 | 0 | 2 | 0 | 1 | 1 | 3 |
| 11:30 11:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11:45 12:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 12:00 12:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 12:15 12:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 12:30 12:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 12:45 13:00 | 0 | 0 | 0 | 1 | 1 | 2 | 2 |
| 13:00 13:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 13:15 13:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 15:00 15:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 15:15 15:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 15:30 15:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 15:45 16:00 | 1 | 0 | 1 | 0 | 0 | 0 | 1 |
| 16:00 16:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 16:15 16:30 | 0 | 0 | 0 | 1 | 0 | 1 | 1 |
| 16:30 16:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 16:45 17:00 | 1 | 0 | 1 | 0 | 0 | 0 | 1 |
| 17:00 17:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 17:15 17:30 | 1 | 0 | 1 | 1 | 0 | 1 | 2 |
| 17:30 17:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 17:45 18:00 | 0 | 2 | 2 | 0 | 1 | 1 | 3 |
| Total | 6 | 3 | 9 | 4 | 4 | 8 | 17 |



Transportation Services - Traffic Services

Turning Movement Count - Study Results

CARLING AVE @ CLYDE AVE/COLE AVE

Survey Date: Wednesday, February 23, 2022

WO No: 40170

Start Time: 07:00

Device: Miovision

Full Study Pedestrian Volume

CLYDE AVE/COLE AVE

CARLING AVE

| Time Period | NB Approach (E or W Crossing) | SB Approach (E or W Crossing) | Total | EB Approach (N or S Crossing) | WB Approach (N or S Crossing) | Total | Grand Total |
|--------------------|----------------------------------|----------------------------------|------------|----------------------------------|----------------------------------|------------|-------------|
| 07:00 07:15 | 1 | 1 | 2 | 1 | 3 | 4 | 6 |
| 07:15 07:30 | 0 | 3 | 3 | 2 | 2 | 4 | 7 |
| 07:30 07:45 | 1 | 1 | 2 | 1 | 2 | 3 | 5 |
| 07:45 08:00 | 1 | 1 | 2 | 1 | 3 | 4 | 6 |
| 08:00 08:15 | 1 | 2 | 3 | 0 | 4 | 4 | 7 |
| 08:15 08:30 | 4 | 2 | 6 | 1 | 5 | 6 | 12 |
| 08:30 08:45 | 2 | 5 | 7 | 2 | 7 | 9 | 16 |
| 08:45 09:00 | 0 | 5 | 5 | 1 | 4 | 5 | 10 |
| 09:00 09:15 | 2 | 0 | 2 | 1 | 0 | 1 | 3 |
| 09:15 09:30 | 0 | 0 | 0 | 1 | 0 | 1 | 1 |
| 09:30 09:45 | 2 | 0 | 2 | 1 | 2 | 3 | 5 |
| 09:45 10:00 | 0 | 1 | 1 | 1 | 1 | 2 | 3 |
| 11:30 11:45 | 5 | 6 | 11 | 3 | 5 | 8 | 19 |
| 11:45 12:00 | 2 | 2 | 4 | 0 | 4 | 4 | 8 |
| 12:00 12:15 | 1 | 1 | 2 | 4 | 5 | 9 | 11 |
| 12:15 12:30 | 3 | 2 | 5 | 0 | 1 | 1 | 6 |
| 12:30 12:45 | 2 | 6 | 8 | 1 | 3 | 4 | 12 |
| 12:45 13:00 | 2 | 3 | 5 | 0 | 5 | 5 | 10 |
| 13:00 13:15 | 2 | 2 | 4 | 1 | 4 | 5 | 9 |
| 13:15 13:30 | 3 | 1 | 4 | 1 | 4 | 5 | 9 |
| 15:00 15:15 | 10 | 5 | 15 | 2 | 21 | 23 | 38 |
| 15:15 15:30 | 5 | 1 | 6 | 1 | 15 | 16 | 22 |
| 15:30 15:45 | 2 | 0 | 2 | 2 | 10 | 12 | 14 |
| 15:45 16:00 | 3 | 1 | 4 | 1 | 4 | 5 | 9 |
| 16:00 16:15 | 7 | 2 | 9 | 4 | 8 | 12 | 21 |
| 16:15 16:30 | 3 | 5 | 8 | 3 | 2 | 5 | 13 |
| 16:30 16:45 | 1 | 2 | 3 | 1 | 0 | 1 | 4 |
| 16:45 17:00 | 3 | 2 | 5 | 2 | 1 | 3 | 8 |
| 17:00 17:15 | 3 | 1 | 4 | 3 | 2 | 5 | 9 |
| 17:15 17:30 | 2 | 0 | 2 | 0 | 1 | 1 | 3 |
| 17:30 17:45 | 2 | 1 | 3 | 1 | 2 | 3 | 6 |
| 17:45 18:00 | 5 | 4 | 9 | 0 | 0 | 0 | 9 |
| Total | 80 | 68 | 148 | 43 | 130 | 173 | 321 |



Transportation Services - Traffic Services

Turning Movement Count - Study Results

CARLING AVE @ CLYDE AVE/COLE AVE

Survey Date: Wednesday, February 23, 2022

WO No: 40170

Start Time: 07:00

Device: Miovision

Full Study Heavy Vehicles

CLYDE AVE/COLE AVE

CARLING AVE

Northbound Southbound Eastbound Westbound

| Time Period | Northbound | | | N TOT | Southbound | | | S TOT | STR TOT | Eastbound | | | E TOT | Westbound | | | W TOT | STR TOT | Grand Total | |
|---------------|------------|----|----|----------|------------|----|----|----------|------------|-----------|----|-----|----------|-----------|----|-----|----------|------------|----------------|-----|
| | LT | ST | RT | | LT | ST | RT | | | LT | ST | RT | | LT | ST | RT | | | | |
| 07:00-07:15 | 0 | 0 | 1 | 4 | 0 | 0 | 0 | 0 | 4 | 0 | 2 | 0 | 5 | 3 | 3 | 0 | 9 | 14 | 9 | |
| 07:15-07:30 | 3 | 1 | 2 | 9 | 0 | 0 | 0 | 1 | 10 | 0 | 7 | 1 | 13 | 2 | 2 | 0 | 13 | 26 | 18 | |
| 07:30-07:45 | 0 | 2 | 2 | 8 | 0 | 0 | 1 | 3 | 11 | 0 | 6 | 1 | 15 | 3 | 7 | 0 | 18 | 33 | 22 | |
| 07:45-08:00 | 1 | 1 | 1 | 7 | 0 | 0 | 0 | 1 | 8 | 0 | 4 | 0 | 8 | 4 | 3 | 0 | 12 | 20 | 14 | |
| 08:00-08:15 | 2 | 0 | 1 | 6 | 0 | 0 | 0 | 1 | 7 | 1 | 6 | 0 | 11 | 3 | 2 | 0 | 12 | 23 | 15 | |
| 08:15-08:30 | 1 | 0 | 3 | 10 | 0 | 0 | 0 | 0 | 10 | 0 | 7 | 1 | 13 | 5 | 4 | 0 | 21 | 34 | 22 | |
| 08:30-08:45 | 2 | 1 | 3 | 8 | 0 | 0 | 0 | 2 | 10 | 1 | 3 | 0 | 10 | 2 | 4 | 0 | 12 | 22 | 16 | |
| 08:45-09:00 | 3 | 0 | 1 | 8 | 0 | 0 | 1 | 1 | 9 | 0 | 6 | 1 | 17 | 3 | 6 | 0 | 16 | 33 | 21 | |
| 09:00-09:15 | 0 | 0 | 0 | 6 | 0 | 0 | 0 | 0 | 6 | 0 | 9 | 2 | 19 | 4 | 6 | 0 | 19 | 38 | 22 | |
| 09:15-09:30 | 1 | 0 | 7 | 13 | 0 | 0 | 1 | 1 | 14 | 0 | 3 | 1 | 10 | 4 | 4 | 0 | 18 | 28 | 21 | |
| 09:30-09:45 | 3 | 0 | 3 | 13 | 0 | 0 | 0 | 2 | 15 | 0 | 6 | 2 | 17 | 5 | 6 | 2 | 22 | 39 | 27 | |
| 09:45-10:00 | 0 | 0 | 3 | 5 | 0 | 0 | 1 | 2 | 7 | 0 | 3 | 0 | 8 | 2 | 4 | 1 | 13 | 21 | 14 | |
| 11:30-11:45 | 1 | 0 | 1 | 7 | 0 | 0 | 0 | 1 | 8 | 1 | 3 | 3 | 12 | 2 | 4 | 0 | 10 | 22 | 15 | |
| 11:45-12:00 | 0 | 1 | 0 | 2 | 0 | 0 | 0 | 2 | 4 | 1 | 8 | 1 | 15 | 0 | 5 | 0 | 13 | 28 | 16 | |
| 12:00-12:15 | 2 | 0 | 3 | 8 | 1 | 0 | 0 | 3 | 11 | 1 | 2 | 0 | 9 | 3 | 4 | 1 | 14 | 23 | 17 | |
| 12:15-12:30 | 0 | 0 | 2 | 8 | 1 | 0 | 1 | 2 | 10 | 0 | 6 | 0 | 16 | 6 | 9 | 0 | 24 | 40 | 25 | |
| 12:30-12:45 | 3 | 0 | 3 | 10 | 0 | 0 | 0 | 0 | 10 | 0 | 4 | 2 | 20 | 2 | 11 | 0 | 20 | 40 | 25 | |
| 12:45-13:00 | 0 | 0 | 1 | 5 | 0 | 0 | 0 | 0 | 5 | 0 | 1 | 0 | 7 | 4 | 6 | 0 | 12 | 19 | 12 | |
| 13:00-13:15 | 1 | 0 | 1 | 5 | 0 | 0 | 0 | 1 | 6 | 0 | 4 | 0 | 10 | 3 | 5 | 1 | 14 | 24 | 15 | |
| 13:15-13:30 | 0 | 0 | 1 | 4 | 1 | 0 | 0 | 1 | 5 | 0 | 4 | 1 | 9 | 2 | 4 | 0 | 12 | 21 | 13 | |
| 15:00-15:15 | 1 | 0 | 2 | 6 | 0 | 0 | 0 | 0 | 6 | 0 | 2 | 0 | 6 | 3 | 3 | 0 | 10 | 16 | 11 | |
| 15:15-15:30 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 2 | 0 | 3 | 0 | 7 | 2 | 4 | 0 | 9 | 16 | 9 | |
| 15:30-15:45 | 0 | 0 | 3 | 5 | 0 | 0 | 0 | 0 | 5 | 0 | 3 | 0 | 6 | 2 | 3 | 0 | 11 | 17 | 11 | |
| 15:45-16:00 | 0 | 0 | 0 | 4 | 0 | 1 | 0 | 2 | 6 | 1 | 3 | 1 | 6 | 2 | 1 | 0 | 6 | 12 | 9 | |
| 16:00-16:15 | 0 | 0 | 2 | 5 | 0 | 0 | 1 | 1 | 6 | 0 | 2 | 1 | 5 | 2 | 1 | 0 | 7 | 12 | 9 | |
| 16:15-16:30 | 1 | 0 | 1 | 4 | 0 | 0 | 0 | 0 | 4 | 0 | 2 | 0 | 6 | 2 | 3 | 0 | 8 | 14 | 9 | |
| 16:30-16:45 | 0 | 0 | 1 | 2 | 0 | 0 | 0 | 0 | 2 | 0 | 2 | 0 | 3 | 1 | 1 | 0 | 5 | 8 | 5 | |
| 16:45-17:00 | 0 | 1 | 1 | 3 | 0 | 1 | 0 | 2 | 5 | 0 | 1 | 0 | 5 | 0 | 4 | 0 | 8 | 13 | 9 | |
| 17:00-17:15 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 3 | 0 | 3 | 1 | 6 | 2 | 2 | 0 | 7 | 13 | 8 | |
| 17:15-17:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 4 | 0 | 1 | 0 | 4 | 8 | 4 | |
| 17:30-17:45 | 0 | 0 | 1 | 4 | 1 | 0 | 0 | 1 | 5 | 0 | 2 | 0 | 2 | 3 | 0 | 0 | 7 | 9 | 7 | |
| 17:45-18:00 | 0 | 0 | 0 | 1 | 1 | 1 | 0 | 2 | 3 | 0 | 2 | 0 | 5 | 0 | 3 | 0 | 6 | 11 | 7 | |
| Total: | None | 25 | 7 | 50 | 185 | 5 | 3 | 6 | 32 | 217 | 6 | 122 | 19 | 305 | 81 | 125 | 5 | 392 | 697 | 457 |



Transportation Services - Traffic Services

Turning Movement Count - Study Results

CARLING AVE @ CLYDE AVE/COLE AVE

Survey Date: Wednesday, February 23, 2022

WO No: 40170

Start Time: 07:00

Device: Miovision

Full Study 15 Minute U-Turn Total

CLYDE AVE/COLE AVE

CARLING AVE

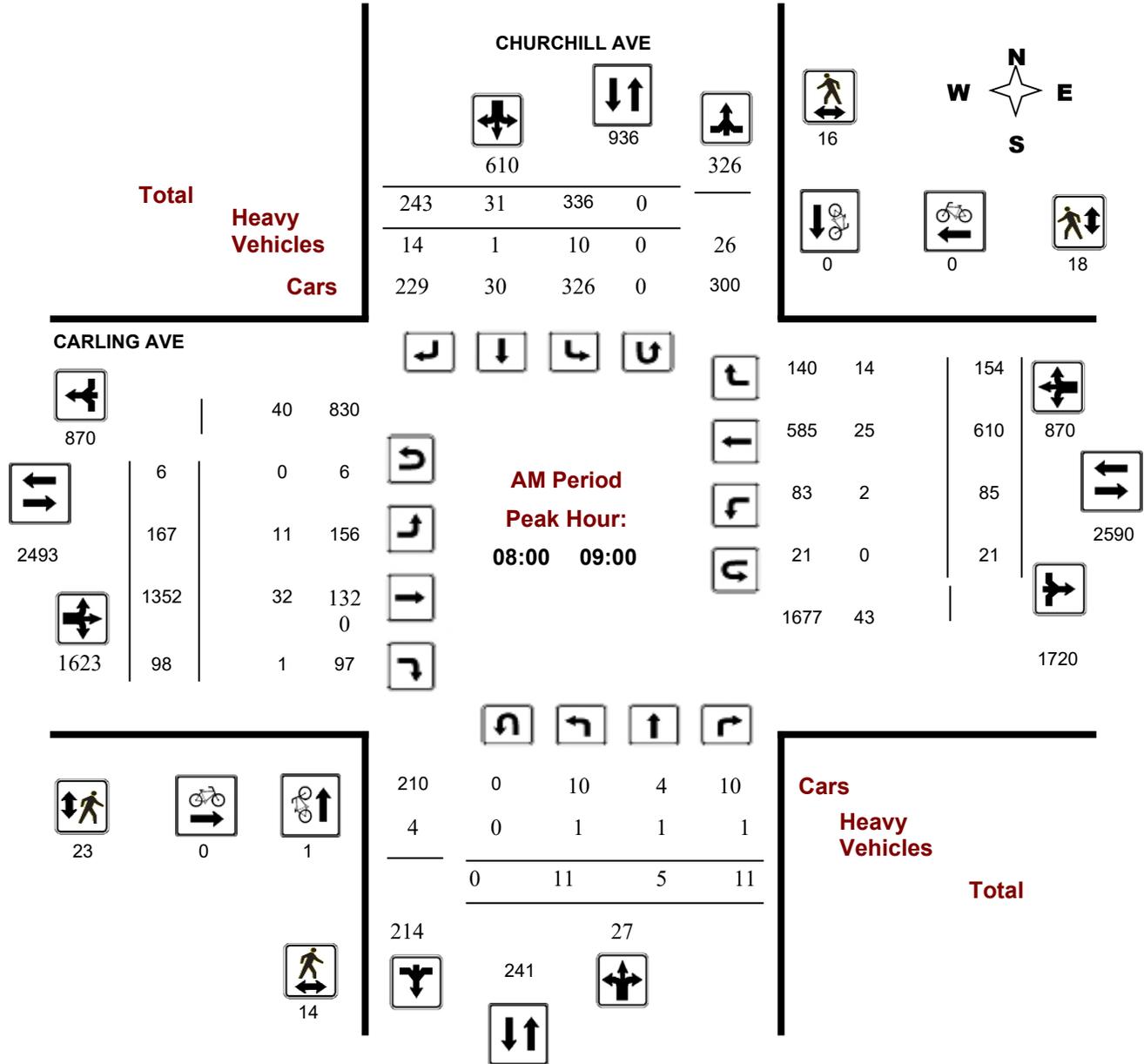
| Time Period | | Northbound U-Turn Total | Southbound U-Turn Total | Eastbound U-Turn Total | Westbound U-Turn Total | Total |
|-------------|-------|----------------------------|----------------------------|---------------------------|---------------------------|-------|
| 07:00 | 07:15 | 0 | 0 | 3 | 2 | 5 |
| 07:15 | 07:30 | 0 | 0 | 4 | 0 | 4 |
| 07:30 | 07:45 | 0 | 0 | 1 | 2 | 3 |
| 07:45 | 08:00 | 0 | 0 | 6 | 0 | 6 |
| 08:00 | 08:15 | 0 | 0 | 2 | 0 | 2 |
| 08:15 | 08:30 | 0 | 0 | 10 | 4 | 14 |
| 08:30 | 08:45 | 0 | 0 | 7 | 2 | 9 |
| 08:45 | 09:00 | 0 | 0 | 6 | 1 | 7 |
| 09:00 | 09:15 | 0 | 0 | 8 | 1 | 9 |
| 09:15 | 09:30 | 0 | 0 | 2 | 1 | 3 |
| 09:30 | 09:45 | 0 | 0 | 3 | 1 | 4 |
| 09:45 | 10:00 | 0 | 0 | 5 | 1 | 6 |
| 11:30 | 11:45 | 0 | 0 | 6 | 2 | 8 |
| 11:45 | 12:00 | 0 | 0 | 9 | 1 | 10 |
| 12:00 | 12:15 | 0 | 0 | 6 | 1 | 7 |
| 12:15 | 12:30 | 0 | 0 | 10 | 4 | 14 |
| 12:30 | 12:45 | 0 | 0 | 2 | 2 | 4 |
| 12:45 | 13:00 | 0 | 0 | 5 | 3 | 8 |
| 13:00 | 13:15 | 0 | 0 | 4 | 2 | 6 |
| 13:15 | 13:30 | 0 | 0 | 5 | 4 | 9 |
| 15:00 | 15:15 | 0 | 0 | 3 | 1 | 4 |
| 15:15 | 15:30 | 0 | 0 | 3 | 2 | 5 |
| 15:30 | 15:45 | 0 | 0 | 2 | 0 | 2 |
| 15:45 | 16:00 | 0 | 0 | 1 | 2 | 3 |
| 16:00 | 16:15 | 0 | 0 | 6 | 2 | 8 |
| 16:15 | 16:30 | 0 | 0 | 4 | 4 | 8 |
| 16:30 | 16:45 | 0 | 0 | 9 | 2 | 11 |
| 16:45 | 17:00 | 0 | 0 | 5 | 1 | 6 |
| 17:00 | 17:15 | 0 | 0 | 2 | 8 | 10 |
| 17:15 | 17:30 | 0 | 0 | 12 | 0 | 12 |
| 17:30 | 17:45 | 0 | 0 | 5 | 5 | 10 |
| 17:45 | 18:00 | 0 | 0 | 3 | 4 | 7 |
| Total | | 0 | 0 | 159 | 65 | 224 |

Survey Date: Tuesday, April 25, 2017

Start Time: 07:00

WO No: 36955

Device: Miovision

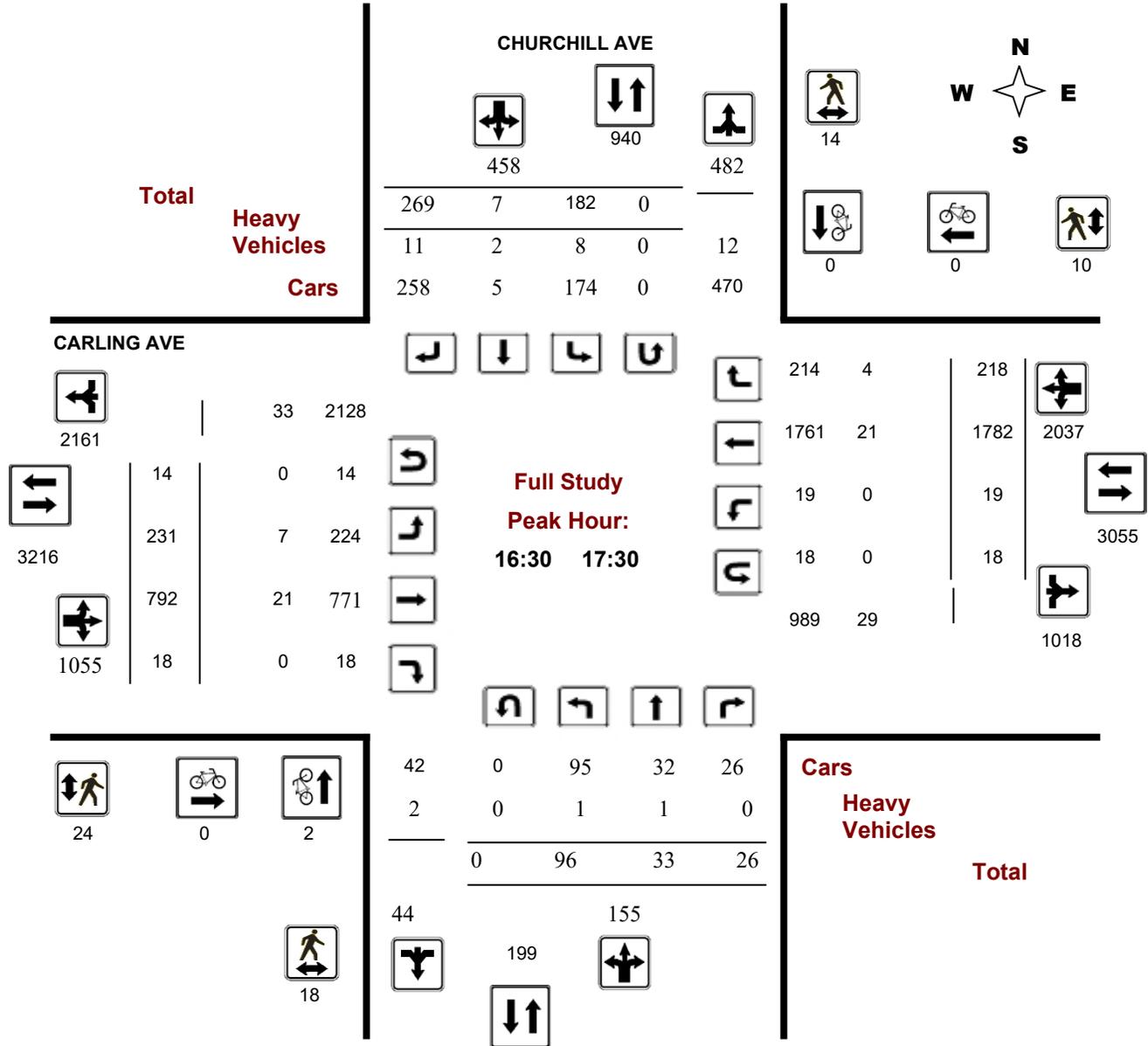


Survey Date: Tuesday, April 25, 2017

Start Time: 07:00

WO No: 36955

Device: Miovision





Transportation Services - Traffic Services

Turning Movement Count - Full Study Peak Hour Diagram

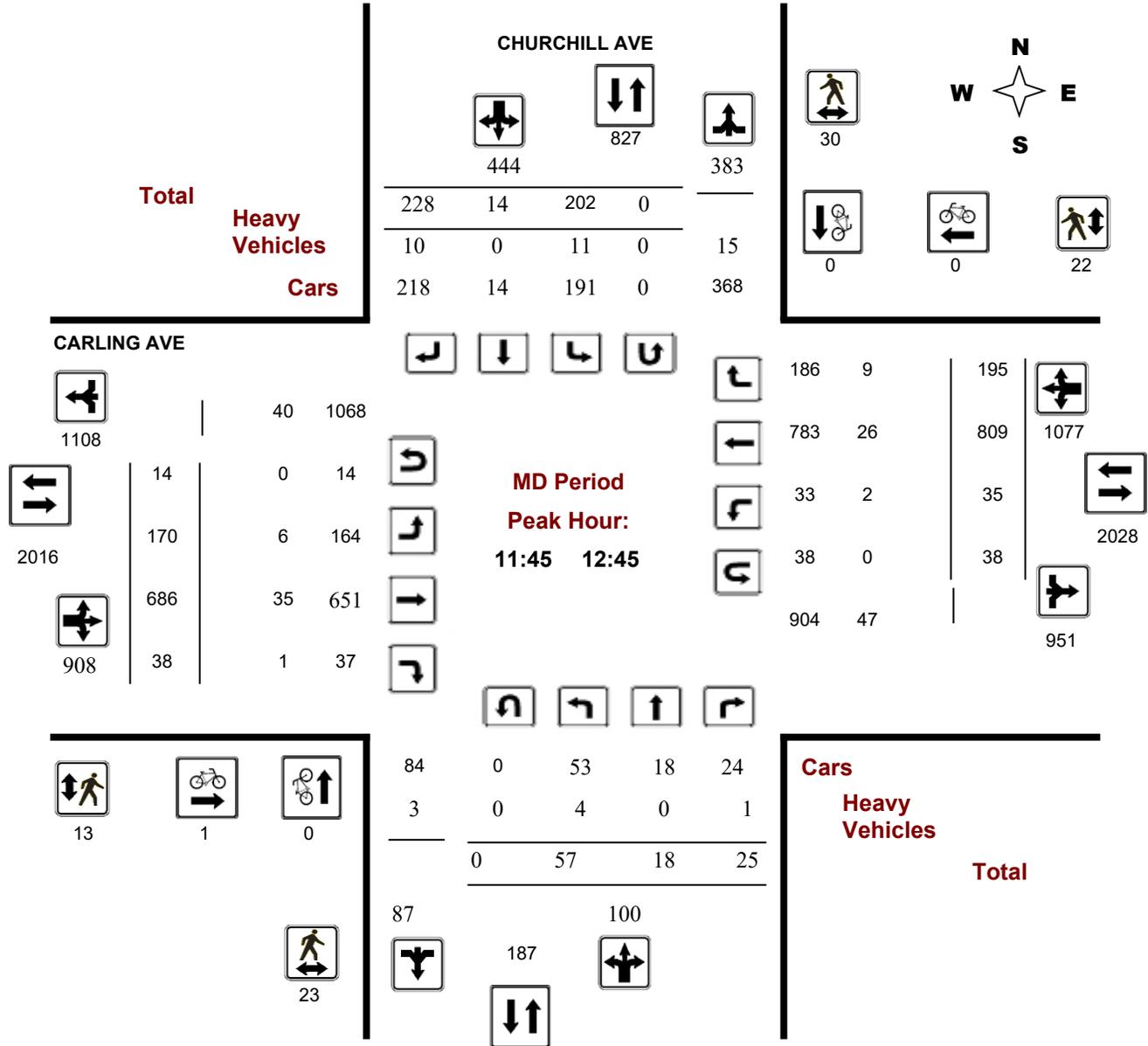
CARLING AVE @ CHURCHILL AVE

Survey Date: Tuesday, April 25, 2017

Start Time: 07:00

WO No: 36955

Device: Miovision

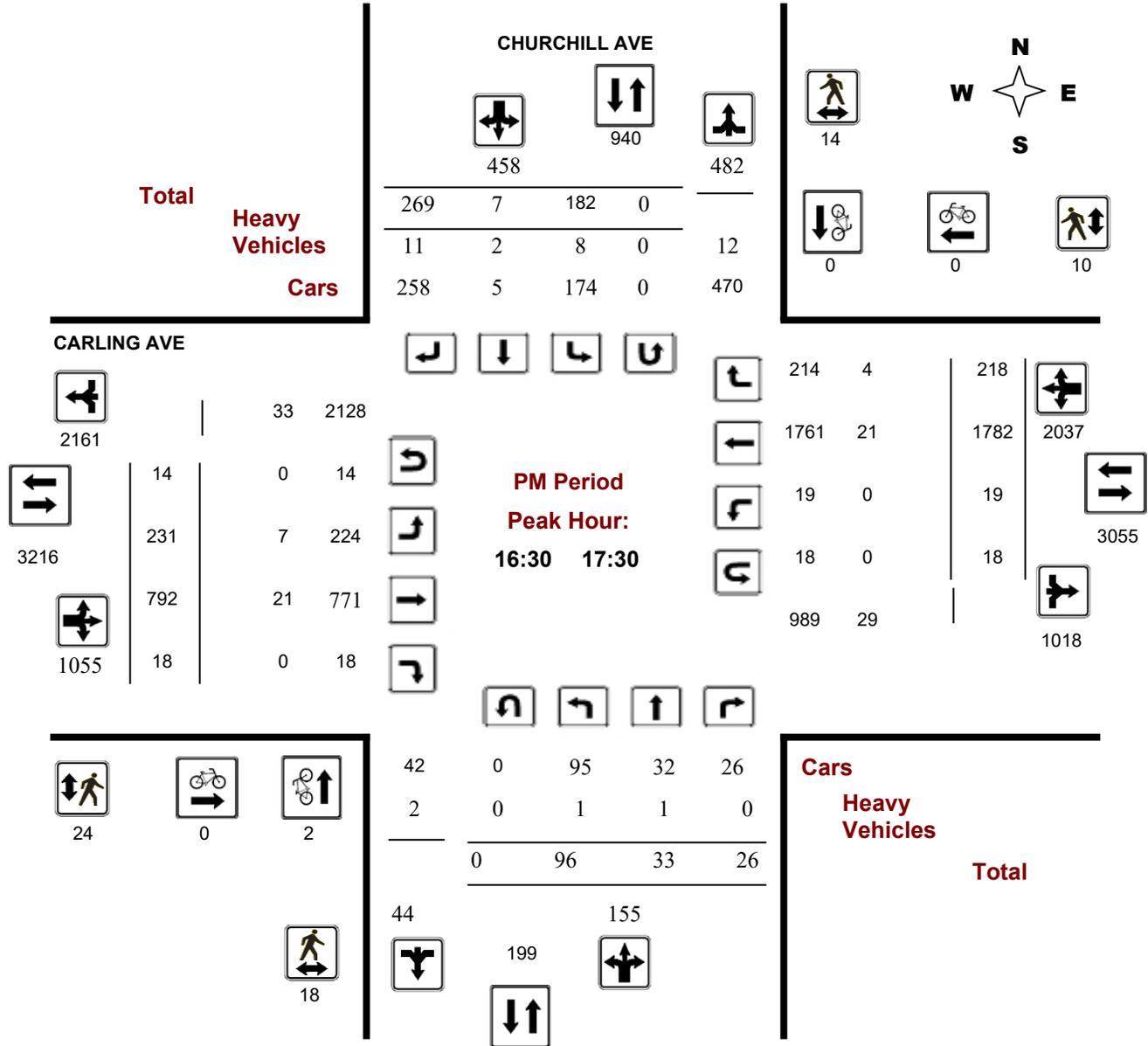


Survey Date: Tuesday, April 25, 2017

Start Time: 07:00

WO No: 36955

Device: Miovision



Turning Movement Count - Full Study Summary Report

CARLING AVE @ CHURCHILL AVE

Survey Date: Tuesday, April 25, 2017

Total Observed U-Turns

Northbound: 0 Southbound: 0
Eastbound: 88 Westbound: 210

AADT Factor

.90

Full Study

| Period | CHURCHILL AVE | | | | | | | | CARLING AVE | | | | | | | | STR TOT | Grand Total | | |
|---|---------------|-----|-----|--------|------------|-----|------|--------|-------------|------|-------|--------|-------------|-----|-------|--------|---------|-------------|-------|--|
| | Northbound | | | | Southbound | | | | Eastbound | | | | Westbound | | | | | | | |
| | LT | ST | RT | NB TOT | LT | ST | RT | SB TOT | LT | ST | RT | EB TOT | LT | ST | RT | WB TOT | | | | |
| 07:00 08:00 | 14 | 6 | 9 | 29 | 252 | 11 | 180 | 443 | 472 | 144 | 1213 | 76 | 1433 | 55 | 416 | 118 | 589 | 2022 | 2494 | |
| 08:00 09:00 | 11 | 5 | 11 | 27 | 336 | 31 | 243 | 610 | 637 | 167 | 1352 | 98 | 1617 | 85 | 610 | 154 | 849 | 2466 | 3103 | |
| 09:00 10:00 | 24 | 5 | 25 | 54 | 224 | 19 | 212 | 455 | 509 | 171 | 790 | 77 | 1038 | 47 | 618 | 151 | 816 | 1854 | 2363 | |
| 11:30 12:30 | 54 | 16 | 23 | 93 | 204 | 10 | 237 | 451 | 544 | 164 | 637 | 34 | 835 | 35 | 823 | 188 | 1046 | 1881 | 2425 | |
| 12:30 13:30 | 46 | 11 | 30 | 87 | 188 | 13 | 241 | 442 | 529 | 192 | 749 | 51 | 992 | 45 | 713 | 185 | 943 | 1935 | 2464 | |
| 15:00 16:00 | 38 | 18 | 21 | 77 | 220 | 12 | 259 | 491 | 568 | 203 | 709 | 22 | 934 | 24 | 1403 | 174 | 1601 | 2535 | 3103 | |
| 16:00 17:00 | 87 | 24 | 31 | 142 | 175 | 11 | 276 | 462 | 604 | 239 | 740 | 17 | 996 | 22 | 1762 | 208 | 1992 | 2988 | 3592 | |
| 17:00 18:00 | 85 | 31 | 19 | 135 | 213 | 3 | 270 | 486 | 621 | 210 | 753 | 15 | 978 | 11 | 1767 | 223 | 2001 | 2979 | 3600 | |
| Sub Total | 359 | 116 | 169 | 644 | 1812 | 110 | 1918 | 3840 | 4484 | 1490 | 6943 | 390 | 8823 | 324 | 8112 | 1401 | 9837 | 18660 | 23144 | |
| U Turns | | | | 0 | | | | 0 | 0 | | | | 88 | | | | 210 | 298 | 298 | |
| Total | 359 | 116 | 169 | 644 | 1812 | 110 | 1918 | 3840 | 4484 | 1490 | 6943 | 390 | 8911 | 324 | 8112 | 1401 | 10047 | 18958 | 23442 | |
| EQ 12Hr | 499 | 161 | 235 | 895 | 2519 | 153 | 2666 | 5338 | 6233 | 2071 | 9651 | 542 | 12386 | 450 | 11276 | 1947 | 13965 | 26351 | 32584 | |
| Note: These values are calculated by multiplying the totals by the appropriate expansion factor. | | | | | | | | | | | | | 1.39 | | | | | | | |
| AVG 12Hr | 449 | 145 | 211 | 806 | 2267 | 138 | 2399 | 4804 | 5610 | 1864 | 8686 | 488 | 11148 | 405 | 10148 | 1753 | 12569 | 23717 | 29327 | |
| Note: These volumes are calculated by multiplying the Equivalent 12 hr. totals by the AADT factor. | | | | | | | | | | | | | .90 | | | | | | | |
| AVG 24Hr | 588 | 190 | 277 | 1055 | 2970 | 180 | 3143 | 6293 | 7348 | 2442 | 11378 | 639 | 14603 | 531 | 13294 | 2296 | 16465 | 31068 | 38416 | |
| Note: These volumes are calculated by multiplying the Average Daily 12 hr. totals by 12 to 24 expansion factor. | | | | | | | | | | | | | 1.31 | | | | | | | |

Comments:

Note: U-Turns provided for approach totals. Refer to 'U-Turn' Report for specific breakdown.



Turning Movement Count - 15 Minute Summary Report

CARLING AVE @ CHURCHILL AVE

Survey Date: Tuesday, April 25, 2017

Total Observed U-Turns

Northbound: 0 Southbound: 0
Eastbound: 88 Westbound: 210

CHURCHILL AVE

CARLING AVE

Table with columns for Time Period, Northbound (LT, ST, RT, N TOT), Southbound (LT, ST, RT, S TOT, STR TOT), Eastbound (LT, ST, RT, E TOT), Westbound (LT, ST, RT, W TOT, STR TOT), and Grand Total. Rows represent 15-minute intervals from 07:00 to 18:00.

Note: U-Turns are included in Totals.

Comment:



Transportation Services - Traffic Services

Turning Movement Count - Cyclist Volume Report

Work Order
36955

CARLING AVE @ CHURCHILL AVE

Count Date: Tuesday, April 25, 2017

Start Time: 07:00

| Time Period | CHURCHILL AVE | | | CARLING AVE | | | Grand Total |
|--------------------|---------------|------------|--------------|-------------|-----------|--------------|-------------|
| | Northbound | Southbound | Street Total | Eastbound | Westbound | Street Total | |
| 07:00 08:00 | 0 | 0 | 0 | 2 | 1 | 3 | 3 |
| 08:00 09:00 | 1 | 0 | 1 | 0 | 0 | 0 | 1 |
| 09:00 10:00 | 2 | 1 | 3 | 2 | 0 | 2 | 5 |
| 11:30 12:30 | 0 | 0 | 0 | 0 | 1 | 1 | 1 |
| 12:30 13:30 | 0 | 0 | 0 | 3 | 1 | 4 | 4 |
| 15:00 16:00 | 2 | 0 | 2 | 1 | 1 | 2 | 4 |
| 16:00 17:00 | 0 | 0 | 0 | 0 | 1 | 1 | 1 |
| 17:00 18:00 | 2 | 0 | 2 | 0 | 0 | 0 | 2 |
| Total | 7 | 1 | 8 | 8 | 5 | 13 | 21 |

Comment:

Note: These volumes consists of bicycles only (no mopeds or motorcycles) and ARE NOT included in the Turning Movement Count Summary.



Transportation Services - Traffic Services

W.O.
36955

Turning Movement Count - Heavy Vehicle Report

CARLING AVE @ CHURCHILL AVE

Survey Date: Tuesday, April 25, 2017

| Time Period | CHURCHILL AVE | | | | | | | | | CARLING AVE | | | | | | | | | Grand Total |
|---------------------------------|---------------|----------|----------|------------|-----------|----------|-----------|------------|------------|-------------|------------|-----------|------------|-----------|------------|------------|------------|------------|-------------|
| | Northbound | | | Southbound | | | S TOT | STR TOT | Eastbound | | | Westbound | | | W TOT | STR TOT | | | |
| | LT | ST | RT | N TOT | LT | ST | | | RT | LT | ST | RT | E TOT | LT | | | ST | RT | |
| 07:00 08:00 | 0 | 0 | 0 | 0 | 6 | 0 | 8 | 14 | 14 | 16 | 22 | 0 | 38 | 1 | 22 | 9 | 33 | 71 | 85 |
| 08:00 09:00 | 1 | 1 | 1 | 3 | 10 | 1 | 14 | 25 | 28 | 11 | 32 | 1 | 44 | 2 | 25 | 14 | 41 | 85 | 113 |
| 09:00 10:00 | 2 | 1 | 3 | 6 | 7 | 0 | 9 | 16 | 22 | 9 | 34 | 2 | 45 | 6 | 25 | 5 | 38 | 83 | 105 |
| 11:30 12:30 | 5 | 0 | 0 | 5 | 10 | 0 | 10 | 20 | 25 | 10 | 29 | 1 | 40 | 2 | 34 | 13 | 49 | 89 | 114 |
| 12:30 13:30 | 1 | 0 | 1 | 2 | 2 | 0 | 13 | 15 | 17 | 6 | 35 | 0 | 41 | 0 | 31 | 3 | 35 | 76 | 93 |
| 15:00 16:00 | 0 | 1 | 1 | 2 | 4 | 0 | 11 | 15 | 17 | 7 | 24 | 0 | 31 | 0 | 26 | 5 | 31 | 62 | 79 |
| 16:00 17:00 | 1 | 0 | 0 | 1 | 2 | 3 | 9 | 14 | 15 | 7 | 23 | 0 | 30 | 0 | 23 | 3 | 26 | 56 | 71 |
| 17:00 18:00 | 1 | 1 | 0 | 2 | 7 | 0 | 10 | 17 | 19 | 4 | 17 | 0 | 21 | 0 | 16 | 3 | 19 | 40 | 59 |
| Sub Total | 11 | 4 | 6 | 21 | 48 | 4 | 84 | 136 | 157 | 70 | 216 | 4 | 290 | 11 | 202 | 55 | 272 | 562 | 719 |
| U-Turns (Heavy Vehicles) | | | | 0 | | | | 0 | 0 | | | | 0 | | | | 4 | 4 | 4 |
| Total | 11 | 4 | 6 | 0 | 48 | 4 | 84 | 136 | 157 | 70 | 216 | 4 | 290 | 11 | 202 | 55 | 276 | 566 | 723 |

Heavy Vehicles include Buses, Single-Unit Trucks and Articulated Trucks. Further, they ARE included in the Turning Movement Count Summary.



Transportation Services - Traffic Services

Work Order

36955

Turning Movement Count - Pedestrian Volume Report

CARLING AVE @ CHURCHILL AVE

Count Date: Tuesday, April 25, 2017

Start Time: 07:00

| Time Period | NB Approach (E or W Crossing) | SB Approach (E or W Crossing) | Total | EB Approach (N or S Crossing) | WB Approach (N or S Crossing) | Total | Grand Total |
|--------------------|----------------------------------|----------------------------------|------------|----------------------------------|----------------------------------|------------|-------------|
| 07:00 07:15 | 3 | 3 | 6 | 1 | 4 | 5 | 11 |
| 07:15 07:30 | 3 | 5 | 8 | 6 | 7 | 13 | 21 |
| 07:30 07:45 | 4 | 2 | 6 | 2 | 5 | 7 | 13 |
| 07:45 08:00 | 1 | 2 | 3 | 5 | 5 | 10 | 13 |
| 07:00 08:00 | 11 | 12 | 23 | 14 | 21 | 35 | 58 |
| 08:00 08:15 | 1 | 2 | 3 | 5 | 3 | 8 | 11 |
| 08:15 08:30 | 5 | 3 | 8 | 6 | 4 | 10 | 18 |
| 08:30 08:45 | 4 | 3 | 7 | 8 | 4 | 12 | 19 |
| 08:45 09:00 | 4 | 8 | 12 | 4 | 7 | 11 | 23 |
| 08:00 09:00 | 14 | 16 | 30 | 23 | 18 | 41 | 71 |
| 09:00 09:15 | 3 | 4 | 7 | 7 | 2 | 9 | 16 |
| 09:15 09:30 | 1 | 5 | 6 | 2 | 7 | 9 | 15 |
| 09:30 09:45 | 5 | 5 | 10 | 3 | 7 | 10 | 20 |
| 09:45 10:00 | 1 | 3 | 4 | 0 | 3 | 3 | 7 |
| 09:00 10:00 | 10 | 17 | 27 | 12 | 19 | 31 | 58 |
| 11:30 11:45 | 4 | 5 | 9 | 5 | 6 | 11 | 20 |
| 11:45 12:00 | 2 | 9 | 11 | 1 | 5 | 6 | 17 |
| 12:00 12:15 | 4 | 7 | 11 | 2 | 6 | 8 | 19 |
| 12:15 12:30 | 9 | 9 | 18 | 5 | 2 | 7 | 25 |
| 11:30 12:30 | 19 | 30 | 49 | 13 | 19 | 32 | 81 |
| 12:30 12:45 | 8 | 5 | 13 | 5 | 9 | 14 | 27 |
| 12:45 13:00 | 8 | 6 | 14 | 6 | 9 | 15 | 29 |
| 13:00 13:15 | 9 | 3 | 12 | 6 | 6 | 12 | 24 |
| 13:15 13:30 | 3 | 4 | 7 | 2 | 6 | 8 | 15 |
| 12:30 13:30 | 28 | 18 | 46 | 19 | 30 | 49 | 95 |
| 15:00 15:15 | 2 | 5 | 7 | 2 | 4 | 6 | 13 |
| 15:15 15:30 | 5 | 6 | 11 | 8 | 4 | 12 | 23 |
| 15:30 15:45 | 10 | 2 | 12 | 3 | 4 | 7 | 19 |
| 15:45 16:00 | 1 | 3 | 4 | 3 | 2 | 5 | 9 |
| 15:00 16:00 | 18 | 16 | 34 | 16 | 14 | 30 | 64 |
| 16:00 16:15 | 2 | 4 | 6 | 3 | 3 | 6 | 12 |
| 16:15 16:30 | 5 | 6 | 11 | 3 | 6 | 9 | 20 |
| 16:30 16:45 | 1 | 7 | 8 | 5 | 3 | 8 | 16 |
| 16:45 17:00 | 3 | 1 | 4 | 3 | 1 | 4 | 8 |
| 16:00 17:00 | 11 | 18 | 29 | 14 | 13 | 27 | 56 |
| 17:00 17:15 | 6 | 4 | 10 | 9 | 4 | 13 | 23 |
| 17:15 17:30 | 8 | 2 | 10 | 7 | 2 | 9 | 19 |
| 17:30 17:45 | 1 | 7 | 8 | 4 | 4 | 8 | 16 |
| 17:45 18:00 | 0 | 5 | 5 | 1 | 2 | 3 | 8 |
| 17:00 18:00 | 15 | 18 | 33 | 21 | 12 | 33 | 66 |
| Total | 126 | 145 | 271 | 132 | 146 | 278 | 549 |

Comment:

Turning Movement Count - 15 Min U-Turn Total Report

CARLING AVE @ CHURCHILL AVE

Survey Date: Tuesday, April 25, 2017

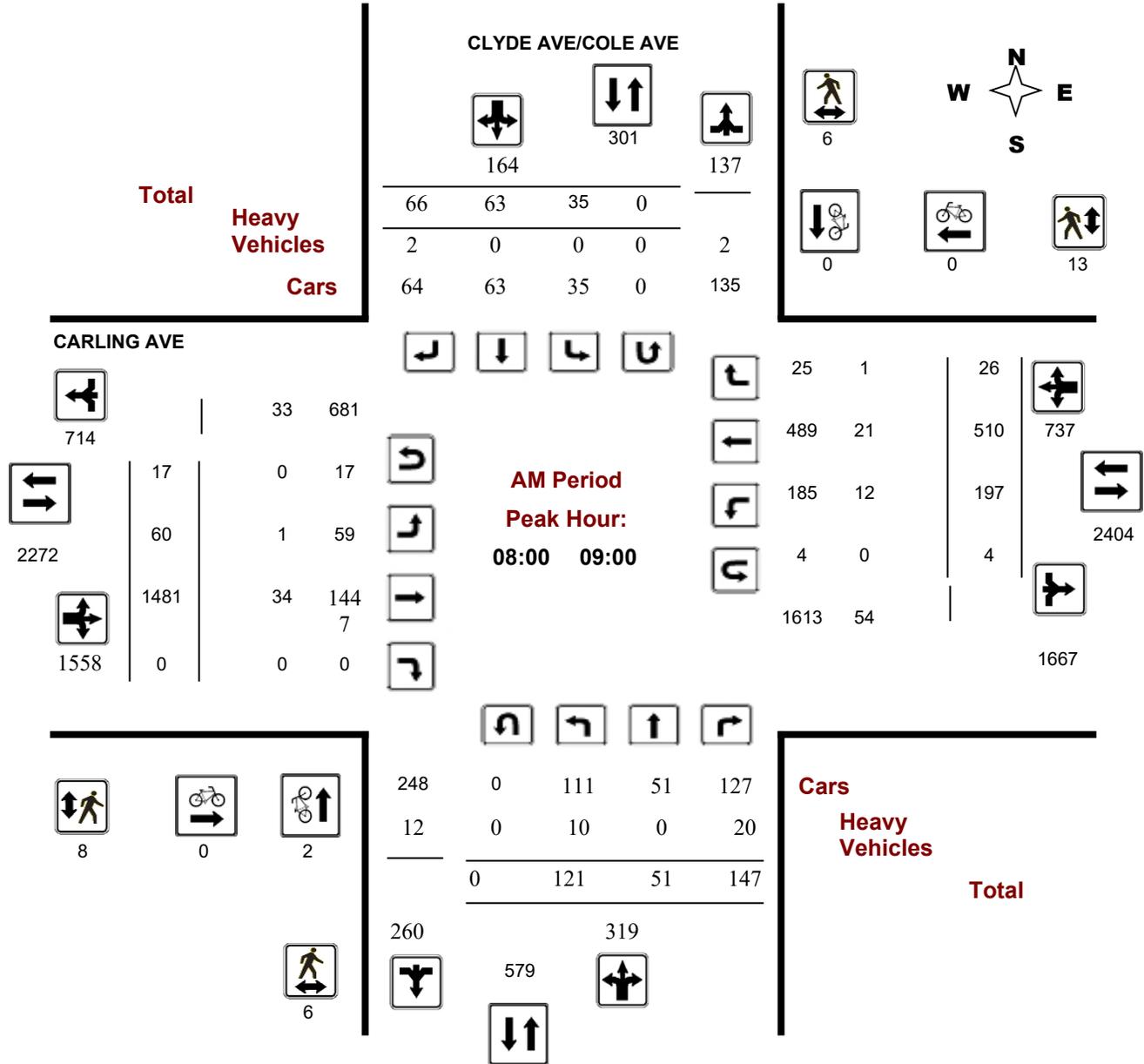
| Time Period | | Northbound U-Turn Total | Southbound U-Turn Total | Eastbound U-Turn Total | Westbound U-Turn Total | Total |
|--------------|-------|----------------------------|----------------------------|---------------------------|---------------------------|-------|
| 07:00 | 07:15 | 0 | 0 | 1 | 3 | 4 |
| 07:15 | 07:30 | 0 | 0 | 2 | 2 | 4 |
| 07:30 | 07:45 | 0 | 0 | 1 | 9 | 10 |
| 07:45 | 08:00 | 0 | 0 | 1 | 5 | 6 |
| 08:00 | 08:15 | 0 | 0 | 1 | 4 | 5 |
| 08:15 | 08:30 | 0 | 0 | 2 | 7 | 9 |
| 08:30 | 08:45 | 0 | 0 | 2 | 7 | 9 |
| 08:45 | 09:00 | 0 | 0 | 1 | 3 | 4 |
| 09:00 | 09:15 | 0 | 0 | 2 | 9 | 11 |
| 09:15 | 09:30 | 0 | 0 | 2 | 6 | 8 |
| 09:30 | 09:45 | 0 | 0 | 4 | 7 | 11 |
| 09:45 | 10:00 | 0 | 0 | 3 | 10 | 13 |
| 11:30 | 11:45 | 0 | 0 | 1 | 13 | 14 |
| 11:45 | 12:00 | 0 | 0 | 5 | 15 | 20 |
| 12:00 | 12:15 | 0 | 0 | 4 | 7 | 11 |
| 12:15 | 12:30 | 0 | 0 | 4 | 9 | 13 |
| 12:30 | 12:45 | 0 | 0 | 1 | 7 | 8 |
| 12:45 | 13:00 | 0 | 0 | 4 | 7 | 11 |
| 13:00 | 13:15 | 0 | 0 | 2 | 9 | 11 |
| 13:15 | 13:30 | 0 | 0 | 3 | 14 | 17 |
| 15:00 | 15:15 | 0 | 0 | 4 | 7 | 11 |
| 15:15 | 15:30 | 0 | 0 | 5 | 7 | 12 |
| 15:30 | 15:45 | 0 | 0 | 4 | 7 | 11 |
| 15:45 | 16:00 | 0 | 0 | 3 | 3 | 6 |
| 16:00 | 16:15 | 0 | 0 | 3 | 3 | 6 |
| 16:15 | 16:30 | 0 | 0 | 1 | 3 | 4 |
| 16:30 | 16:45 | 0 | 0 | 7 | 8 | 15 |
| 16:45 | 17:00 | 0 | 0 | 2 | 4 | 6 |
| 17:00 | 17:15 | 0 | 0 | 2 | 3 | 5 |
| 17:15 | 17:30 | 0 | 0 | 3 | 3 | 6 |
| 17:30 | 17:45 | 0 | 0 | 6 | 2 | 8 |
| 17:45 | 18:00 | 0 | 0 | 2 | 7 | 9 |
| Total | | 0 | 0 | 88 | 210 | 298 |

Survey Date: Wednesday, January 27, 2016

Start Time: 07:00

WO No: 35669

Device: Miovision

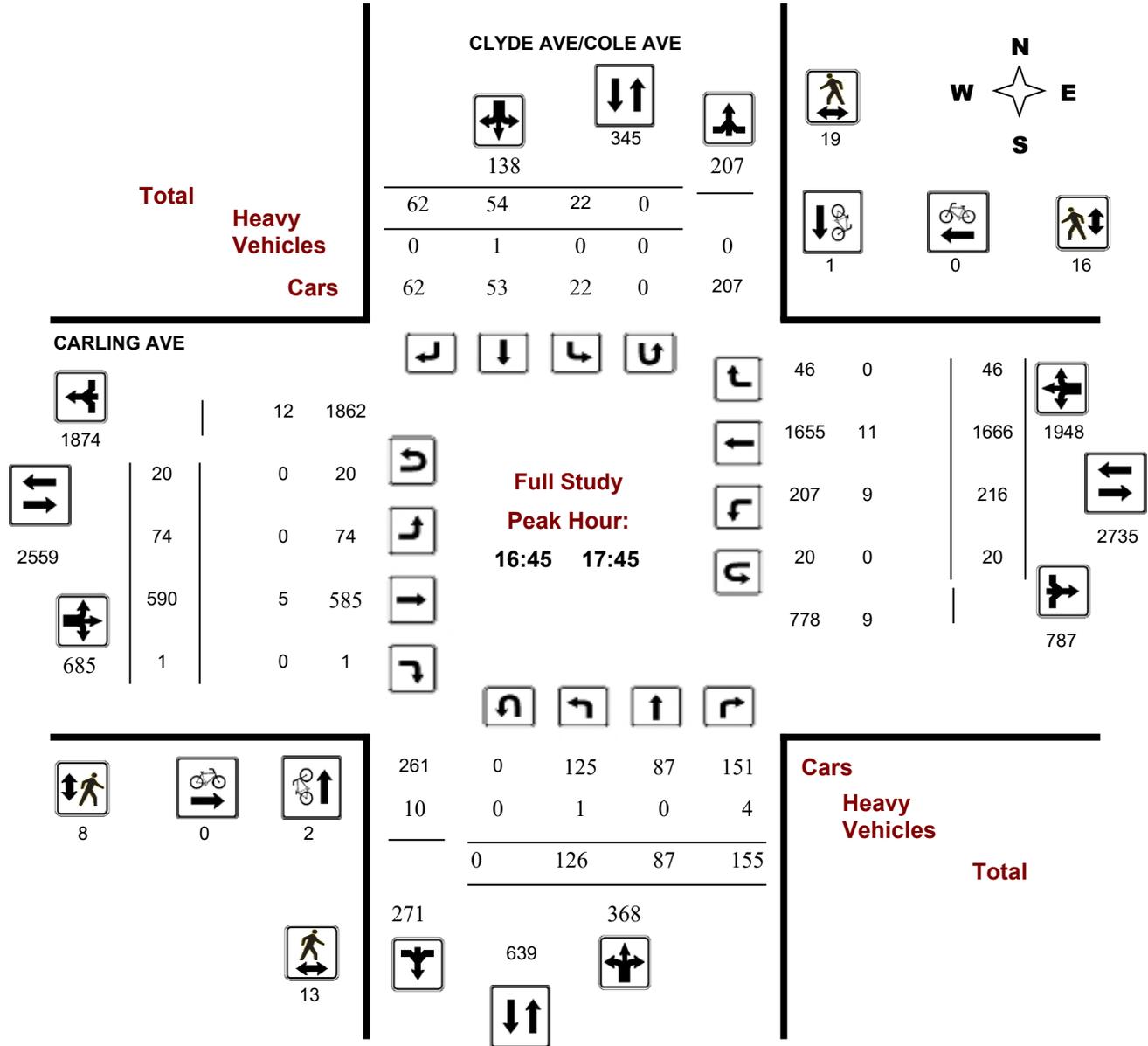


Survey Date: Wednesday, January 27, 2016

Start Time: 07:00

WO No: 35669

Device: Miovision

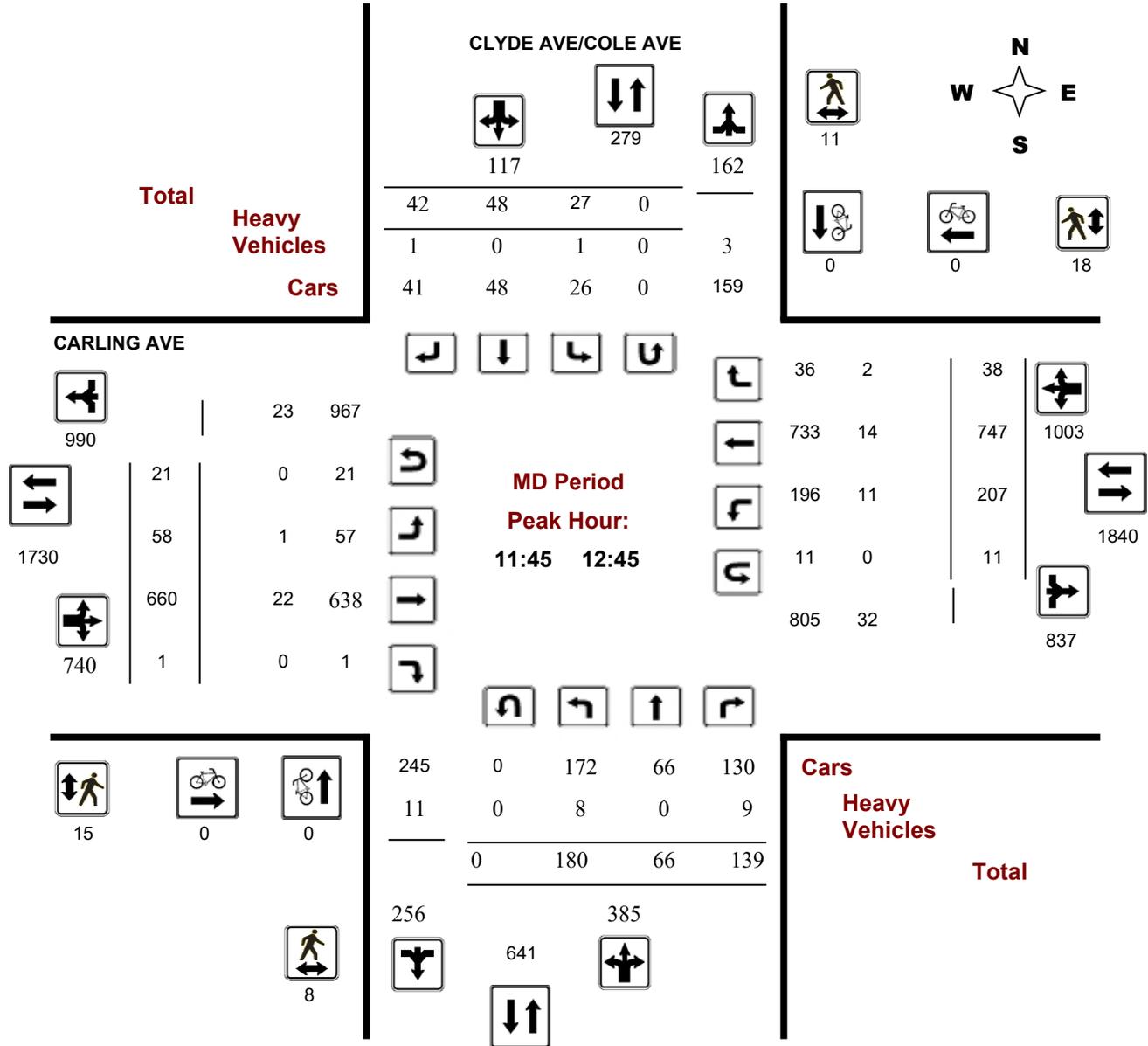


Survey Date: Wednesday, January 27, 2016

Start Time: 07:00

WO No: 35669

Device: Miovision

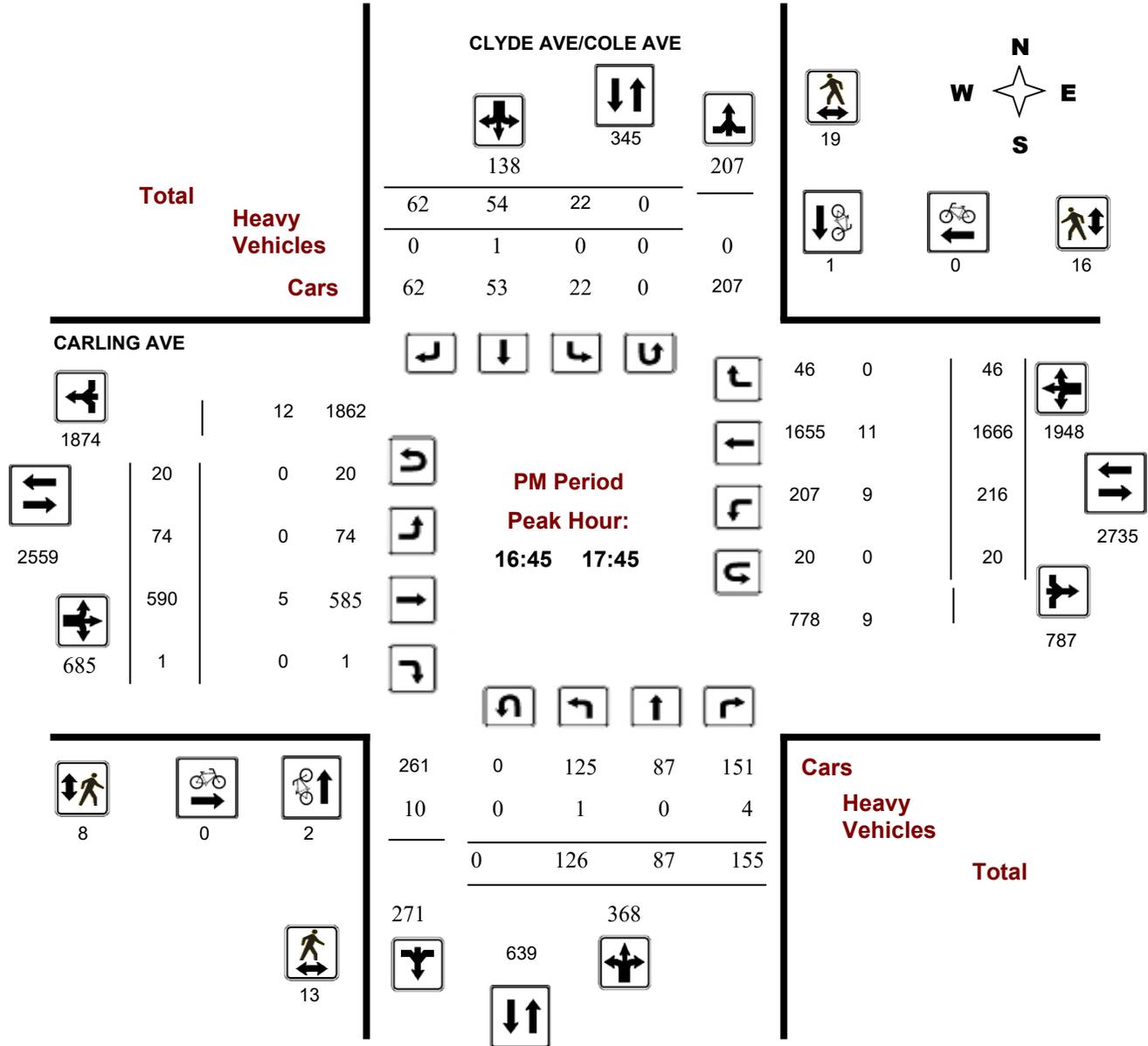


Survey Date: Wednesday, January 27, 2016

Start Time: 07:00

WO No: 35669

Device: Miovision





Turning Movement Count - Full Study Summary Report

CARLING AVE @ CLYDE AVE/COLE AVE

Survey Date: Wednesday, January 27, 201

Total Observed U-Turns

Northbound: 0 Southbound: 0
Eastbound: 131 Westbound: 99

AADT Factor

1.00

Full Study

| Period | CLYDE AVE/COLE AVE | | | | | | | | | CARLING AVE | | | | | | | | | Grand Total | |
|---|--------------------|-----|------|--------|------------|-----|-----|--------|---------|-------------|-------|----|-------------|------|-------|-----|--------|---------|-------------|--|
| | Northbound | | | | Southbound | | | | | Eastbound | | | Westbound | | | | | | | |
| | LT | ST | RT | NB TOT | LT | ST | RT | SB TOT | STR TOT | LT | ST | RT | EB TOT | LT | ST | RT | WB TOT | STR TOT | | |
| 07:00 08:00 | 47 | 19 | 80 | 146 | 23 | 27 | 31 | 81 | 227 | 38 | 1209 | 0 | 1247 | 180 | 319 | 13 | 512 | 1759 | 1986 | |
| 08:00 09:00 | 121 | 51 | 147 | 319 | 35 | 63 | 66 | 164 | 483 | 60 | 1481 | 0 | 1541 | 197 | 510 | 26 | 733 | 2274 | 2757 | |
| 09:00 10:00 | 108 | 31 | 97 | 236 | 16 | 40 | 39 | 95 | 331 | 61 | 784 | 0 | 845 | 191 | 540 | 12 | 743 | 1588 | 1919 | |
| 11:30 12:30 | 159 | 69 | 137 | 365 | 22 | 50 | 47 | 119 | 484 | 54 | 642 | 2 | 698 | 214 | 743 | 33 | 990 | 1688 | 2172 | |
| 12:30 13:30 | 129 | 52 | 133 | 314 | 29 | 47 | 50 | 126 | 440 | 77 | 689 | 0 | 766 | 187 | 672 | 27 | 886 | 1652 | 2092 | |
| 15:00 16:00 | 165 | 56 | 139 | 360 | 16 | 43 | 44 | 103 | 463 | 41 | 657 | 2 | 700 | 221 | 1117 | 34 | 1372 | 2072 | 2535 | |
| 16:00 17:00 | 120 | 68 | 147 | 335 | 20 | 73 | 41 | 134 | 469 | 75 | 540 | 0 | 615 | 228 | 1381 | 51 | 1660 | 2275 | 2744 | |
| 17:00 18:00 | 132 | 100 | 147 | 379 | 26 | 56 | 69 | 151 | 530 | 78 | 592 | 1 | 671 | 207 | 1545 | 44 | 1796 | 2467 | 2997 | |
| Sub Total | 981 | 446 | 1027 | 2454 | 187 | 399 | 387 | 973 | 3427 | 484 | 6594 | 5 | 7083 | 1625 | 6827 | 240 | 8692 | 15775 | 19202 | |
| U Turns | | | | 0 | | | | 0 | 0 | | | | 131 | | | | 99 | 230 | 230 | |
| Total | 981 | 446 | 1027 | 2454 | 187 | 399 | 387 | 973 | 3427 | 484 | 6594 | 5 | 7214 | 1625 | 6827 | 240 | 8791 | 16005 | 19432 | |
| EQ 12Hr | 1364 | 620 | 1428 | 3411 | 260 | 555 | 538 | 1352 | 4763 | 673 | 9166 | 7 | 10027 | 2259 | 9490 | 334 | 12219 | 22246 | 27009 | |
| Note: These values are calculated by multiplying the totals by the appropriate expansion factor. | | | | | | | | | | | | | 1.39 | | | | | | | |
| AVG 12Hr | 1364 | 620 | 1428 | 3411 | 260 | 555 | 538 | 1352 | 4763 | 673 | 9166 | 7 | 10027 | 2259 | 9490 | 334 | 12219 | 22246 | 27009 | |
| Note: These volumes are calculated by multiplying the Equivalent 12 hr. totals by the AADT factor. | | | | | | | | | | | | | 1.00 | | | | | | | |
| AVG 24Hr | 1786 | 812 | 1870 | 4468 | 341 | 727 | 705 | 1772 | 6240 | 881 | 12007 | 9 | 13136 | 2959 | 12431 | 437 | 16008 | 29144 | 35384 | |
| Note: These volumes are calculated by multiplying the Average Daily 12 hr. totals by 12 to 24 expansion factor. | | | | | | | | | | | | | 1.31 | | | | | | | |

Comments:

Note: U-Turns provided for approach totals. Refer to 'U-Turn' Report for specific breakdown.



Turning Movement Count - 15 Minute Summary Report

CARLING AVE @ CLYDE AVE/COLE AVE

Survey Date: Wednesday, January 27, 2016

Total Observed U-Turns

Northbound: 0 Southbound: 0
Eastbound: 131 Westbound: 99

Table with columns for Time Period, Northbound (LT, ST, RT, N TOT), Southbound (LT, ST, RT, S TOT, STR TOT), Eastbound (LT, ST, RT, E TOT), Westbound (LT, ST, RT, W TOT, STR TOT), and Grand Total. Rows represent 15-minute intervals from 07:00 to 18:00.

Note: U-Turns are included in Totals.

Comment:



Transportation Services - Traffic Services

Turning Movement Count - Cyclist Volume Report

Work Order
35669

CARLING AVE @ CLYDE AVE/COLE AVE

Count Date: Wednesday, January 27, 2016

Start Time: 07:00

| Time Period | CLYDE AVE/COLE AVE | | | CARLING AVE | | | Grand Total |
|--------------------|--------------------|------------|--------------|-------------|-----------|--------------|-------------|
| | Northbound | Southbound | Street Total | Eastbound | Westbound | Street Total | |
| 07:00 08:00 | 0 | 1 | 1 | 0 | 0 | 0 | 1 |
| 08:00 09:00 | 2 | 0 | 2 | 0 | 0 | 0 | 2 |
| 09:00 10:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11:30 12:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 12:30 13:30 | 0 | 0 | 0 | 1 | 1 | 2 | 2 |
| 15:00 16:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 16:00 17:00 | 1 | 0 | 1 | 0 | 0 | 0 | 1 |
| 17:00 18:00 | 1 | 1 | 2 | 0 | 0 | 0 | 2 |
| Total | 4 | 2 | 6 | 1 | 1 | 2 | 8 |

Comment:

Note: These volumes consists of bicycles only (no mopeds or motorcycles) and ARE NOT included in the Turning Movement Count Summary.



Transportation Services - Traffic Services

W.O.
35669

Turning Movement Count - Heavy Vehicle Report

CARLING AVE @ CLYDE AVE/COLE AVE

Survey Date: Wednesday, January 27, 2016

| Time Period | CLYDE AVE/COLE AVE | | | | | | | | | CARLING AVE | | | | | | | | | Grand Total |
|---------------------------------|--------------------|----------|-----------|------------|----------|----------|-----------|------------|------------|-------------|------------|-----------|------------|-----------|------------|------------|------------|------------|-------------|
| | Northbound | | | Southbound | | | S TOT | STR TOT | Eastbound | | | Westbound | | | W TOT | STR TOT | | | |
| | LT | ST | RT | N TOT | LT | ST | | | RT | LT | ST | RT | E TOT | LT | | | ST | RT | |
| 07:00 08:00 | 6 | 1 | 13 | 20 | 0 | 0 | 4 | 4 | 24 | 3 | 12 | 0 | 15 | 6 | 14 | 0 | 20 | 35 | 59 |
| 08:00 09:00 | 10 | 0 | 20 | 30 | 0 | 0 | 2 | 2 | 32 | 1 | 34 | 0 | 35 | 12 | 21 | 1 | 34 | 69 | 101 |
| 09:00 10:00 | 6 | 1 | 14 | 21 | 1 | 0 | 1 | 2 | 23 | 1 | 27 | 0 | 28 | 12 | 26 | 0 | 38 | 66 | 89 |
| 11:30 12:30 | 6 | 0 | 10 | 16 | 1 | 0 | 0 | 1 | 17 | 1 | 25 | 0 | 26 | 15 | 18 | 2 | 35 | 61 | 78 |
| 12:30 13:30 | 5 | 3 | 9 | 17 | 0 | 1 | 2 | 3 | 20 | 0 | 16 | 0 | 16 | 12 | 15 | 0 | 28 | 44 | 64 |
| 15:00 16:00 | 5 | 2 | 6 | 13 | 0 | 0 | 3 | 3 | 16 | 1 | 13 | 2 | 16 | 7 | 21 | 1 | 29 | 45 | 61 |
| 16:00 17:00 | 4 | 0 | 2 | 6 | 1 | 1 | 0 | 2 | 8 | 2 | 8 | 0 | 10 | 8 | 17 | 0 | 25 | 35 | 43 |
| 17:00 18:00 | 0 | 0 | 5 | 5 | 0 | 0 | 0 | 0 | 5 | 0 | 6 | 0 | 6 | 10 | 13 | 0 | 23 | 29 | 34 |
| Sub Total | 42 | 7 | 79 | 128 | 3 | 2 | 12 | 17 | 145 | 9 | 141 | 2 | 152 | 82 | 145 | 4 | 232 | 384 | 529 |
| U-Turns (Heavy Vehicles) | | | | 0 | | | | 0 | 0 | | | | 0 | | | | 1 | 1 | 1 |
| Total | 42 | 7 | 79 | 0 | 3 | 2 | 12 | 17 | 145 | 9 | 141 | 2 | 152 | 82 | 145 | 4 | 233 | 385 | 530 |

Heavy Vehicles include Buses, Single-Unit Trucks and Articulated Trucks. Further, they ARE included in the Turning Movement Count Summary.



Transportation Services - Traffic Services

Work Order

35669

Turning Movement Count - Pedestrian Volume Report

CARLING AVE @ CLYDE AVE/COLE AVE

Count Date: Wednesday, January 27, 2016

Start Time: 07:00

| Time Period | NB Approach (E or W Crossing) | SB Approach (E or W Crossing) | Total | EB Approach (N or S Crossing) | WB Approach (N or S Crossing) | Total | Grand Total |
|--------------------|----------------------------------|----------------------------------|------------|----------------------------------|----------------------------------|------------|-------------|
| 07:00 07:15 | 1 | 4 | 5 | 2 | 1 | 3 | 8 |
| 07:15 07:30 | 1 | 2 | 3 | 1 | 4 | 5 | 8 |
| 07:30 07:45 | 2 | 4 | 6 | 0 | 2 | 2 | 8 |
| 07:45 08:00 | 7 | 3 | 10 | 2 | 10 | 12 | 22 |
| 07:00 08:00 | 11 | 13 | 24 | 5 | 17 | 22 | 46 |
| 08:00 08:15 | 1 | 2 | 3 | 2 | 5 | 7 | 10 |
| 08:15 08:30 | 2 | 1 | 3 | 4 | 4 | 8 | 11 |
| 08:30 08:45 | 2 | 2 | 4 | 2 | 4 | 6 | 10 |
| 08:45 09:00 | 1 | 1 | 2 | 0 | 0 | 0 | 2 |
| 08:00 09:00 | 6 | 6 | 12 | 8 | 13 | 21 | 33 |
| 09:00 09:15 | 5 | 6 | 11 | 1 | 3 | 4 | 15 |
| 09:15 09:30 | 1 | 2 | 3 | 1 | 2 | 3 | 6 |
| 09:30 09:45 | 0 | 0 | 0 | 1 | 1 | 2 | 2 |
| 09:45 10:00 | 2 | 2 | 4 | 4 | 3 | 7 | 11 |
| 09:00 10:00 | 8 | 10 | 18 | 7 | 9 | 16 | 34 |
| 11:30 11:45 | 2 | 7 | 9 | 1 | 6 | 7 | 16 |
| 11:45 12:00 | 3 | 2 | 5 | 3 | 1 | 4 | 9 |
| 12:00 12:15 | 0 | 4 | 4 | 5 | 8 | 13 | 17 |
| 12:15 12:30 | 1 | 2 | 3 | 2 | 0 | 2 | 5 |
| 11:30 12:30 | 6 | 15 | 21 | 11 | 15 | 26 | 47 |
| 12:30 12:45 | 4 | 3 | 7 | 5 | 9 | 14 | 21 |
| 12:45 13:00 | 3 | 1 | 4 | 1 | 6 | 7 | 11 |
| 13:00 13:15 | 5 | 6 | 11 | 5 | 8 | 13 | 24 |
| 13:15 13:30 | 2 | 2 | 4 | 2 | 0 | 2 | 6 |
| 12:30 13:30 | 14 | 12 | 26 | 13 | 23 | 36 | 62 |
| 15:00 15:15 | 3 | 4 | 7 | 1 | 6 | 7 | 14 |
| 15:15 15:30 | 2 | 10 | 12 | 2 | 5 | 7 | 19 |
| 15:30 15:45 | 1 | 1 | 2 | 4 | 3 | 7 | 9 |
| 15:45 16:00 | 5 | 3 | 8 | 0 | 4 | 4 | 12 |
| 15:00 16:00 | 11 | 18 | 29 | 7 | 18 | 25 | 54 |
| 16:00 16:15 | 7 | 2 | 9 | 4 | 3 | 7 | 16 |
| 16:15 16:30 | 1 | 3 | 4 | 1 | 6 | 7 | 11 |
| 16:30 16:45 | 5 | 5 | 10 | 4 | 5 | 9 | 19 |
| 16:45 17:00 | 3 | 3 | 6 | 0 | 6 | 6 | 12 |
| 16:00 17:00 | 16 | 13 | 29 | 9 | 20 | 29 | 58 |
| 17:00 17:15 | 1 | 3 | 4 | 1 | 5 | 6 | 10 |
| 17:15 17:30 | 5 | 5 | 10 | 2 | 2 | 4 | 14 |
| 17:30 17:45 | 4 | 8 | 12 | 5 | 3 | 8 | 20 |
| 17:45 18:00 | 2 | 1 | 3 | 1 | 4 | 5 | 8 |
| 17:00 18:00 | 12 | 17 | 29 | 9 | 14 | 23 | 52 |
| Total | 84 | 104 | 188 | 69 | 129 | 198 | 386 |

Comment:

Turning Movement Count - 15 Min U-Turn Total Report

CARLING AVE @ CLYDE AVE/COLE AVE

Survey Date: Wednesday, January 27, 2016

| Time Period | | Northbound U-Turn Total | Southbound U-Turn Total | Eastbound U-Turn Total | Westbound U-Turn Total | Total |
|-------------|-------|----------------------------|----------------------------|---------------------------|---------------------------|-------|
| 07:00 | 07:15 | 0 | 0 | 0 | 2 | 2 |
| 07:15 | 07:30 | 0 | 0 | 3 | 2 | 5 |
| 07:30 | 07:45 | 0 | 0 | 4 | 4 | 8 |
| 07:45 | 08:00 | 0 | 0 | 4 | 1 | 5 |
| 08:00 | 08:15 | 0 | 0 | 1 | 1 | 2 |
| 08:15 | 08:30 | 0 | 0 | 3 | 0 | 3 |
| 08:30 | 08:45 | 0 | 0 | 6 | 2 | 8 |
| 08:45 | 09:00 | 0 | 0 | 7 | 1 | 8 |
| 09:00 | 09:15 | 0 | 0 | 4 | 1 | 5 |
| 09:15 | 09:30 | 0 | 0 | 2 | 2 | 4 |
| 09:30 | 09:45 | 0 | 0 | 6 | 1 | 7 |
| 09:45 | 10:00 | 0 | 0 | 4 | 2 | 6 |
| 11:30 | 11:45 | 0 | 0 | 7 | 3 | 10 |
| 11:45 | 12:00 | 0 | 0 | 7 | 2 | 9 |
| 12:00 | 12:15 | 0 | 0 | 7 | 4 | 11 |
| 12:15 | 12:30 | 0 | 0 | 2 | 2 | 4 |
| 12:30 | 12:45 | 0 | 0 | 5 | 3 | 8 |
| 12:45 | 13:00 | 0 | 0 | 6 | 6 | 12 |
| 13:00 | 13:15 | 0 | 0 | 2 | 4 | 6 |
| 13:15 | 13:30 | 0 | 0 | 5 | 2 | 7 |
| 15:00 | 15:15 | 0 | 0 | 4 | 3 | 7 |
| 15:15 | 15:30 | 0 | 0 | 5 | 4 | 9 |
| 15:30 | 15:45 | 0 | 0 | 3 | 5 | 8 |
| 15:45 | 16:00 | 0 | 0 | 5 | 4 | 9 |
| 16:00 | 16:15 | 0 | 0 | 3 | 5 | 8 |
| 16:15 | 16:30 | 0 | 0 | 1 | 4 | 5 |
| 16:30 | 16:45 | 0 | 0 | 3 | 3 | 6 |
| 16:45 | 17:00 | 0 | 0 | 3 | 0 | 3 |
| 17:00 | 17:15 | 0 | 0 | 11 | 5 | 16 |
| 17:15 | 17:30 | 0 | 0 | 1 | 4 | 5 |
| 17:30 | 17:45 | 0 | 0 | 5 | 11 | 16 |
| 17:45 | 18:00 | 0 | 0 | 2 | 6 | 8 |
| Total | | 0 | 0 | 131 | 99 | 230 |

Turning Movement Count - Study Results

CARLING AVE EB @ SAIGON CRT

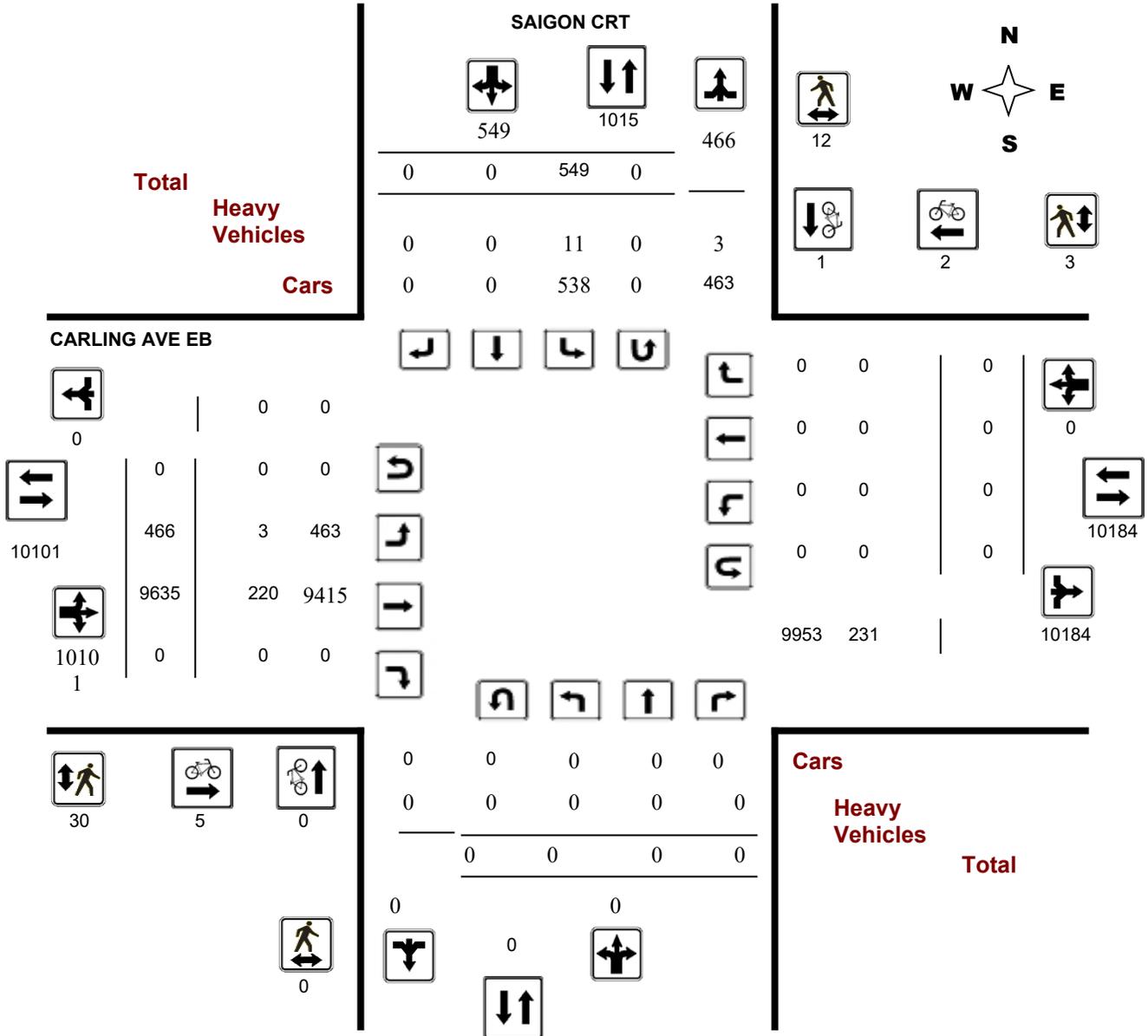
Survey Date: Thursday, April 05, 2018

WO No: 37688

Start Time: 07:00

Device: Miovision

Full Study Diagram



Turning Movement Count - Study Results

CARLING AVE EB @ SAIGON CRT

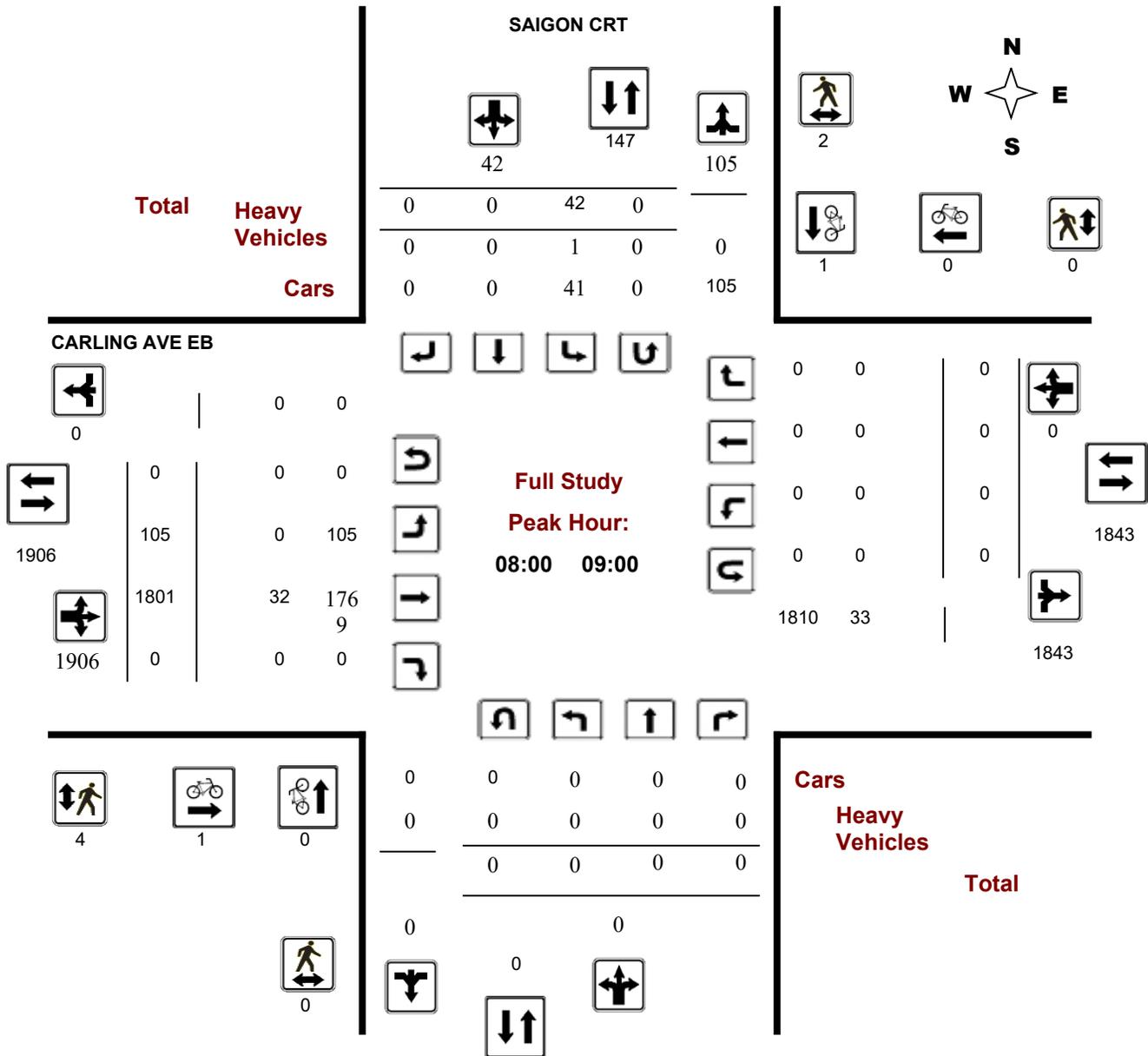
Survey Date: Thursday, April 05, 2018

WO No: 37688

Start Time: 07:00

Device: Miovision

Full Study Peak Hour Diagram



Turning Movement Count - Peak Hour Diagram

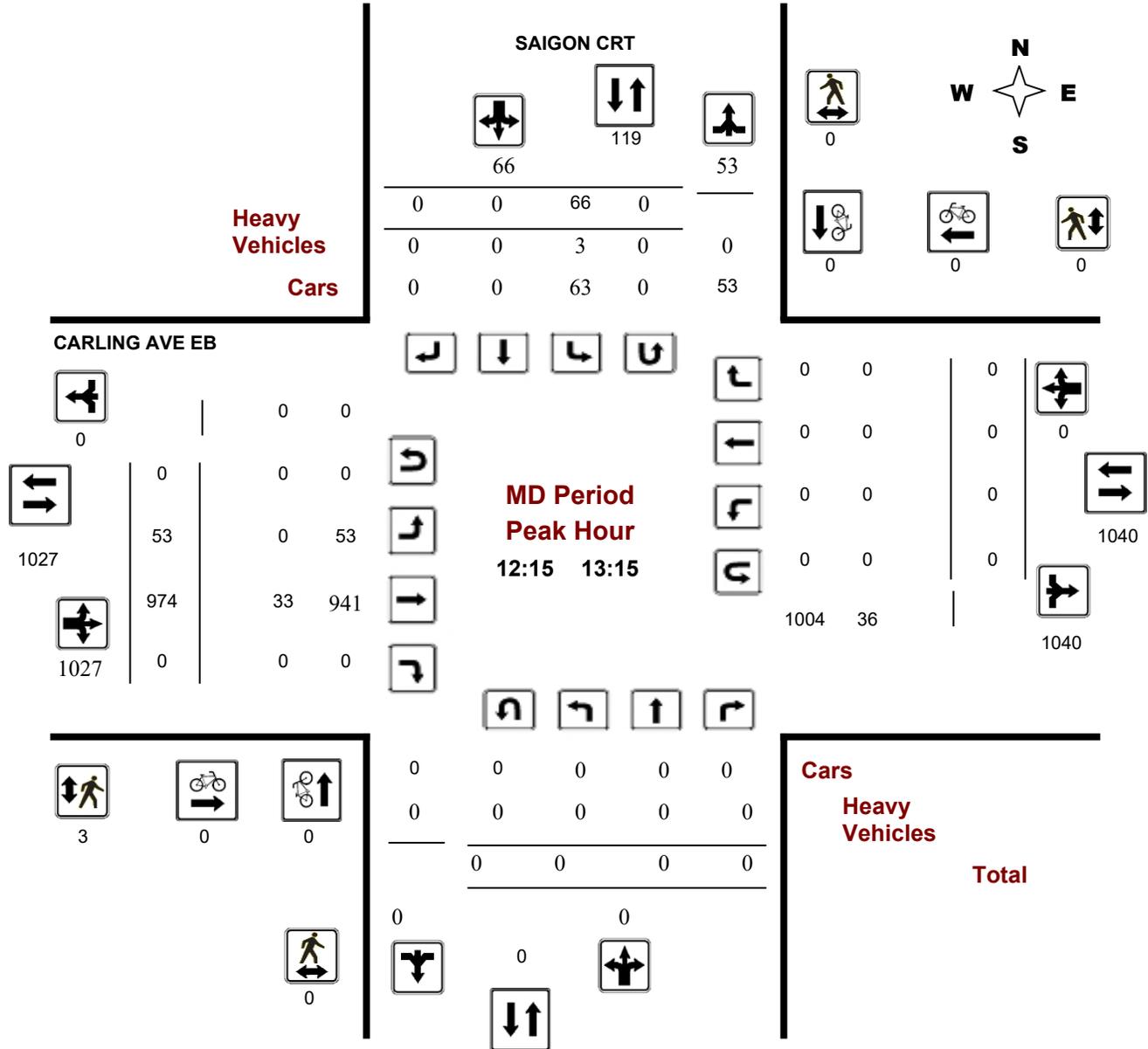
CARLING AVE EB @ SAIGON CRT

Survey Date: Thursday, April 05, 2018

Start Time: 07:00

WO No: 37688

Device: Miovision





Transportation Services - Traffic Services

Turning Movement Count - Study Results

CARLING AVE EB @ SAIGON CRT

Survey Date: Thursday, April 05, 2018

WO No: 37688

Start Time: 07:00

Device: Miovision

Full Study Summary (8 HR Standard)

Survey Date: Thursday, April 05, 2018

Total Observed U-Turns

AADT Factor

Northbound: 0 Southbound: 0

.90

Eastbound: 0 Westbound: 0

SAIGON CRT

CARLING AVE EB

| Period | Northbound | | | | | Southbound | | | | | Eastbound | | | | | Westbound | | | | | STR TOT | Grand Total |
|--|------------|----|----|--------|-----|------------|----|--------|---------|-----|-----------|----|--------|----|----|-----------|-------------|-------|-------|--|---------|-------------|
| | LT | ST | RT | NB TOT | LT | ST | RT | SB TOT | STR TOT | LT | ST | RT | EB TOT | LT | ST | RT | WB TOT | | | | | |
| 07:00 08:00 | 0 | 0 | 0 | 0 | 27 | 0 | 0 | 27 | 27 | 77 | 1421 | 0 | 1498 | 0 | 0 | 0 | 0 | 1498 | 1525 | | | |
| 08:00 09:00 | 0 | 0 | 0 | 0 | 42 | 0 | 0 | 42 | 42 | 105 | 1801 | 0 | 1906 | 0 | 0 | 0 | 0 | 1906 | 1948 | | | |
| 09:00 10:00 | 0 | 0 | 0 | 0 | 54 | 0 | 0 | 54 | 54 | 74 | 1378 | 0 | 1452 | 0 | 0 | 0 | 0 | 1452 | 1506 | | | |
| 11:30 12:30 | 0 | 0 | 0 | 0 | 70 | 0 | 0 | 70 | 70 | 38 | 965 | 0 | 1003 | 0 | 0 | 0 | 0 | 1003 | 1073 | | | |
| 12:30 13:30 | 0 | 0 | 0 | 0 | 65 | 0 | 0 | 65 | 65 | 65 | 942 | 0 | 1007 | 0 | 0 | 0 | 0 | 1007 | 1072 | | | |
| 15:00 16:00 | 0 | 0 | 0 | 0 | 86 | 0 | 0 | 86 | 86 | 31 | 1032 | 0 | 1063 | 0 | 0 | 0 | 0 | 1063 | 1149 | | | |
| 16:00 17:00 | 0 | 0 | 0 | 0 | 104 | 0 | 0 | 104 | 104 | 40 | 1073 | 0 | 1113 | 0 | 0 | 0 | 0 | 1113 | 1217 | | | |
| 17:00 18:00 | 0 | 0 | 0 | 0 | 101 | 0 | 0 | 101 | 101 | 36 | 1023 | 0 | 1059 | 0 | 0 | 0 | 0 | 1059 | 1160 | | | |
| Sub Total | 0 | 0 | 0 | 0 | 549 | 0 | 0 | 549 | 549 | 466 | 9635 | 0 | 10101 | 0 | 0 | 0 | 0 | 10101 | 10650 | | | |
| U Turns | | | | 0 | | | | 0 | 0 | | | | 0 | | | | 0 | 0 | 0 | | | |
| Total | 0 | 0 | 0 | 0 | 549 | 0 | 0 | 549 | 549 | 466 | 9635 | 0 | 10101 | 0 | 0 | 0 | 0 | 10101 | 10650 | | | |
| EQ 12Hr | 0 | 0 | 0 | 0 | 763 | 0 | 0 | 763 | 763 | 648 | 13393 | 0 | 14040 | 0 | 0 | 0 | 0 | 14040 | 14803 | | | |
| Note: These values are calculated by multiplying the totals by the appropriate expansion factor. | | | | | | | | | | | | | | | | | 1.39 | | | | | |
| AVG 12Hr | 0 | 0 | 0 | 0 | 647 | 0 | 0 | 647 | 687 | 549 | 11360 | 0 | 11909 | 0 | 0 | 0 | 0 | 12636 | 13323 | | | |
| Note: These volumes are calculated by multiplying the Equivalent 12 hr. totals by the AADT factor. | | | | | | | | | | | | | | | | | 0.9 | | | | | |
| AVG 24Hr | 0 | 0 | 0 | 0 | 848 | 0 | 0 | 848 | 848 | 720 | 14881 | 0 | 15601 | 0 | 0 | 0 | 0 | 15601 | 16449 | | | |

Note: These volumes are calculated by multiplying the Average Daily 12 hr. totals by 12 to 24 expansion factor. **1.31**

Note: U-Turns provided for approach totals. Refer to 'U-Turn' Report for specific breakdown.



Transportation Services - Traffic Services

Turning Movement Count - Study Results

CARLING AVE EB @ SAIGON CRT

Survey Date: Thursday, April 05, 2018

WO No: 37688

Start Time: 07:00

Device: Miovision

Full Study 15 Minute Increments

SAIGON CRT

CARLING AVE EB

Northbound

Southbound

Eastbound

Westbound

| Time Period | LT | ST | RT | N TOT | LT | ST | RT | S TOT | STR TOT | LT | ST | RT | E TOT | LT | ST | RT | W TOT | STR TOT | Grand Total |
|-------------|----|----|----|----------|-----|----|----|----------|------------|-----|------|----|----------|----|----|----|----------|------------|----------------|
| 07:00 07:15 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 4 | 11 | 7 | 285 | 0 | 292 | 0 | 0 | 0 | 0 | 11 | 296 |
| 07:15 07:30 | 0 | 0 | 0 | 0 | 10 | 0 | 0 | 10 | 31 | 21 | 318 | 0 | 339 | 0 | 0 | 0 | 0 | 31 | 349 |
| 07:30 07:45 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 3 | 26 | 23 | 412 | 0 | 435 | 0 | 0 | 0 | 0 | 26 | 438 |
| 07:45 08:00 | 0 | 0 | 0 | 0 | 10 | 0 | 0 | 10 | 36 | 26 | 406 | 0 | 432 | 0 | 0 | 0 | 0 | 36 | 442 |
| 08:00 08:15 | 0 | 0 | 0 | 0 | 6 | 0 | 0 | 6 | 24 | 18 | 497 | 0 | 515 | 0 | 0 | 0 | 0 | 24 | 521 |
| 08:15 08:30 | 0 | 0 | 0 | 0 | 12 | 0 | 0 | 12 | 39 | 27 | 431 | 0 | 458 | 0 | 0 | 0 | 0 | 39 | 470 |
| 08:30 08:45 | 0 | 0 | 0 | 0 | 12 | 0 | 0 | 12 | 41 | 29 | 470 | 0 | 499 | 0 | 0 | 0 | 0 | 41 | 511 |
| 08:45 09:00 | 0 | 0 | 0 | 0 | 12 | 0 | 0 | 12 | 43 | 31 | 403 | 0 | 434 | 0 | 0 | 0 | 0 | 43 | 446 |
| 09:00 09:15 | 0 | 0 | 0 | 0 | 11 | 0 | 0 | 11 | 37 | 26 | 420 | 0 | 446 | 0 | 0 | 0 | 0 | 37 | 457 |
| 09:15 09:30 | 0 | 0 | 0 | 0 | 18 | 0 | 0 | 18 | 38 | 20 | 360 | 0 | 380 | 0 | 0 | 0 | 0 | 38 | 398 |
| 09:30 09:45 | 0 | 0 | 0 | 0 | 12 | 0 | 0 | 12 | 30 | 18 | 309 | 0 | 327 | 0 | 0 | 0 | 0 | 30 | 339 |
| 09:45 10:00 | 0 | 0 | 0 | 0 | 13 | 0 | 0 | 13 | 23 | 10 | 289 | 0 | 299 | 0 | 0 | 0 | 0 | 23 | 312 |
| 11:30 11:45 | 0 | 0 | 0 | 0 | 20 | 0 | 0 | 20 | 29 | 9 | 225 | 0 | 234 | 0 | 0 | 0 | 0 | 29 | 254 |
| 11:45 12:00 | 0 | 0 | 0 | 0 | 10 | 0 | 0 | 10 | 19 | 9 | 272 | 0 | 281 | 0 | 0 | 0 | 0 | 19 | 291 |
| 12:00 12:15 | 0 | 0 | 0 | 0 | 19 | 0 | 0 | 19 | 28 | 9 | 221 | 0 | 230 | 0 | 0 | 0 | 0 | 28 | 249 |
| 12:15 12:30 | 0 | 0 | 0 | 0 | 21 | 0 | 0 | 21 | 32 | 11 | 247 | 0 | 258 | 0 | 0 | 0 | 0 | 32 | 279 |
| 12:30 12:45 | 0 | 0 | 0 | 0 | 21 | 0 | 0 | 21 | 35 | 14 | 237 | 0 | 251 | 0 | 0 | 0 | 0 | 35 | 272 |
| 12:45 13:00 | 0 | 0 | 0 | 0 | 12 | 0 | 0 | 12 | 27 | 15 | 244 | 0 | 259 | 0 | 0 | 0 | 0 | 27 | 271 |
| 13:00 13:15 | 0 | 0 | 0 | 0 | 12 | 0 | 0 | 12 | 25 | 13 | 246 | 0 | 259 | 0 | 0 | 0 | 0 | 25 | 271 |
| 13:15 13:30 | 0 | 0 | 0 | 0 | 20 | 0 | 0 | 20 | 43 | 23 | 215 | 0 | 238 | 0 | 0 | 0 | 0 | 43 | 258 |
| 15:00 15:15 | 0 | 0 | 0 | 0 | 25 | 0 | 0 | 25 | 31 | 6 | 236 | 0 | 242 | 0 | 0 | 0 | 0 | 31 | 267 |
| 15:15 15:30 | 0 | 0 | 0 | 0 | 20 | 0 | 0 | 20 | 25 | 5 | 251 | 0 | 256 | 0 | 0 | 0 | 0 | 25 | 276 |
| 15:30 15:45 | 0 | 0 | 0 | 0 | 16 | 0 | 0 | 16 | 25 | 9 | 283 | 0 | 292 | 0 | 0 | 0 | 0 | 25 | 308 |
| 15:45 16:00 | 0 | 0 | 0 | 0 | 25 | 0 | 0 | 25 | 36 | 11 | 262 | 0 | 273 | 0 | 0 | 0 | 0 | 36 | 298 |
| 16:00 16:15 | 0 | 0 | 0 | 0 | 29 | 0 | 0 | 29 | 33 | 4 | 267 | 0 | 271 | 0 | 0 | 0 | 0 | 33 | 300 |
| 16:15 16:30 | 0 | 0 | 0 | 0 | 17 | 0 | 0 | 17 | 27 | 10 | 263 | 0 | 273 | 0 | 0 | 0 | 0 | 27 | 290 |
| 16:30 16:45 | 0 | 0 | 0 | 0 | 26 | 0 | 0 | 26 | 41 | 15 | 297 | 0 | 312 | 0 | 0 | 0 | 0 | 41 | 338 |
| 16:45 17:00 | 0 | 0 | 0 | 0 | 32 | 0 | 0 | 32 | 43 | 11 | 246 | 0 | 257 | 0 | 0 | 0 | 0 | 43 | 289 |
| 17:00 17:15 | 0 | 0 | 0 | 0 | 35 | 0 | 0 | 35 | 43 | 8 | 336 | 0 | 344 | 0 | 0 | 0 | 0 | 43 | 379 |
| 17:15 17:30 | 0 | 0 | 0 | 0 | 26 | 0 | 0 | 26 | 37 | 11 | 256 | 0 | 267 | 0 | 0 | 0 | 0 | 37 | 293 |
| 17:30 17:45 | 0 | 0 | 0 | 0 | 25 | 0 | 0 | 25 | 34 | 9 | 227 | 0 | 236 | 0 | 0 | 0 | 0 | 34 | 261 |
| 17:45 18:00 | 0 | 0 | 0 | 0 | 15 | 0 | 0 | 15 | 23 | 8 | 204 | 0 | 212 | 0 | 0 | 0 | 0 | 23 | 227 |
| Total: | 0 | 0 | 0 | 0 | 549 | 0 | 0 | 549 | 1015 | 466 | 9635 | 0 | 10101 | 0 | 0 | 0 | 0 | 1015 | 10,650 |

Note: U-Turns are included in Totals.



Transportation Services - Traffic Services

Turning Movement Count - Study Results

CARLING AVE EB @ SAIGON CRT

Survey Date: Thursday, April 05, 2018

WO No: 37688

Start Time: 07:00

Device: Miovision

Full Study Cyclist Volume

| Time Period | SAIGON CRT | | | CARLING AVE EB | | | Grand Total |
|-------------|------------|------------|--------------|----------------|-----------|--------------|-------------|
| | Northbound | Southbound | Street Total | Eastbound | Westbound | Street Total | |
| 07:00 07:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 07:15 07:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 07:30 07:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 07:45 08:00 | 0 | 0 | 0 | 1 | 0 | 1 | 1 |
| 08:00 08:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 08:15 08:30 | 0 | 0 | 0 | 1 | 0 | 1 | 1 |
| 08:30 08:45 | 0 | 1 | 1 | 0 | 0 | 0 | 1 |
| 08:45 09:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 09:00 09:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 09:15 09:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 09:30 09:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 09:45 10:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11:30 11:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11:45 12:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 12:00 12:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 12:15 12:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 12:30 12:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 12:45 13:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 13:00 13:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 13:15 13:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 15:00 15:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 15:15 15:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 15:30 15:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 15:45 16:00 | 0 | 0 | 0 | 0 | 1 | 1 | 1 |
| 16:00 16:15 | 0 | 0 | 0 | 1 | 0 | 1 | 1 |
| 16:15 16:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 16:30 16:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 16:45 17:00 | 0 | 0 | 0 | 1 | 0 | 1 | 1 |
| 17:00 17:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 17:15 17:30 | 0 | 0 | 0 | 1 | 0 | 1 | 1 |
| 17:30 17:45 | 0 | 0 | 0 | 0 | 1 | 1 | 1 |
| 17:45 18:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 0 | 1 | 1 | 5 | 2 | 7 | 8 |



Transportation Services - Traffic Services

Turning Movement Count - Study Results

CARLING AVE EB @ SAIGON CRT

Survey Date: Thursday, April 05, 2018

WO No: 37688

Start Time: 07:00

Device: Miovision

Full Study Pedestrian Volume

SAIGON CRT

CARLING AVE EB

| Time Period | NB Approach (E or W Crossing) | SB Approach (E or W Crossing) | Total | EB Approach (N or S Crossing) | WB Approach (N or S Crossing) | Total | Grand Total |
|--------------------|----------------------------------|----------------------------------|-----------|----------------------------------|----------------------------------|-----------|-------------|
| 07:00 07:15 | 0 | 1 | 1 | 0 | 0 | 0 | 1 |
| 07:15 07:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 07:30 07:45 | 0 | 0 | 0 | 1 | 0 | 1 | 1 |
| 07:45 08:00 | 0 | 0 | 0 | 2 | 0 | 2 | 2 |
| 08:00 08:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 08:15 08:30 | 0 | 1 | 1 | 2 | 0 | 2 | 3 |
| 08:30 08:45 | 0 | 1 | 1 | 1 | 0 | 1 | 2 |
| 08:45 09:00 | 0 | 0 | 0 | 1 | 0 | 1 | 1 |
| 09:00 09:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 09:15 09:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 09:30 09:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 09:45 10:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11:30 11:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11:45 12:00 | 0 | 0 | 0 | 1 | 0 | 1 | 1 |
| 12:00 12:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 12:15 12:30 | 0 | 0 | 0 | 1 | 0 | 1 | 1 |
| 12:30 12:45 | 0 | 0 | 0 | 1 | 0 | 1 | 1 |
| 12:45 13:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 13:00 13:15 | 0 | 0 | 0 | 1 | 0 | 1 | 1 |
| 13:15 13:30 | 0 | 0 | 0 | 3 | 0 | 3 | 3 |
| 15:00 15:15 | 0 | 1 | 1 | 1 | 0 | 1 | 2 |
| 15:15 15:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 15:30 15:45 | 0 | 0 | 0 | 1 | 0 | 1 | 1 |
| 15:45 16:00 | 0 | 1 | 1 | 0 | 1 | 1 | 2 |
| 16:00 16:15 | 0 | 0 | 0 | 1 | 0 | 1 | 1 |
| 16:15 16:30 | 0 | 1 | 1 | 1 | 0 | 1 | 2 |
| 16:30 16:45 | 0 | 0 | 0 | 3 | 0 | 3 | 3 |
| 16:45 17:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 17:00 17:15 | 0 | 0 | 0 | 6 | 0 | 6 | 6 |
| 17:15 17:30 | 0 | 2 | 2 | 2 | 1 | 3 | 5 |
| 17:30 17:45 | 0 | 0 | 0 | 1 | 0 | 1 | 1 |
| 17:45 18:00 | 0 | 4 | 4 | 0 | 1 | 1 | 5 |
| Total | 0 | 12 | 12 | 30 | 3 | 33 | 45 |



Transportation Services - Traffic Services

Turning Movement Count - Study Results

CARLING AVE EB @ SAIGON CRT

Survey Date: Thursday, April 05, 2018

WO No: 37688

Start Time: 07:00

Device: Miovision

Full Study Heavy Vehicles

SAIGON CRT

CARLING AVE EB

Northbound

Southbound

Eastbound

Westbound

| Time Period | Northbound | | | N TOT | Southbound | | | S TOT | STR TOT | Eastbound | | | E TOT | Westbound | | | W TOT | STR TOT | Grand Total |
|-------------|------------|----|----|----------|------------|----|----|----------|------------|-----------|-----|----|----------|-----------|----|----|----------|------------|----------------|
| | LT | ST | RT | | LT | ST | RT | | | LT | ST | RT | | LT | ST | RT | | | |
| 07:00 07:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 5 | 0 | 0 | 0 | 5 | 10 | 5 |
| 07:15 07:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 0 | 6 | 0 | 0 | 0 | 6 | 12 | 6 |
| 07:30 07:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 2 | 0 | 0 | 0 | 2 | 4 | 2 |
| 07:45 08:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | 0 | 9 | 0 | 0 | 0 | 9 | 18 | 9 |
| 08:00 08:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 0 | 10 | 0 | 0 | 0 | 10 | 20 | 10 |
| 08:15 08:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 4 | 0 | 0 | 0 | 4 | 8 | 4 |
| 08:30 08:45 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 11 | 0 | 11 | 0 | 0 | 0 | 12 | 23 | 12 |
| 08:45 09:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 0 | 7 | 0 | 0 | 0 | 7 | 14 | 7 |
| 09:00 09:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | 0 | 8 | 0 | 0 | 0 | 8 | 16 | 8 |
| 09:15 09:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | 0 | 9 | 0 | 0 | 0 | 9 | 18 | 9 |
| 09:30 09:45 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 2 | 2 | 0 | 9 | 0 | 9 | 0 | 0 | 0 | 11 | 20 | 11 |
| 09:45 10:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 11 | 0 | 11 | 0 | 0 | 0 | 11 | 22 | 11 |
| 11:30 11:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 0 | 7 | 0 | 0 | 0 | 7 | 14 | 7 |
| 11:45 12:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | 0 | 8 | 0 | 0 | 0 | 8 | 16 | 8 |
| 12:00 12:15 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 10 | 0 | 10 | 0 | 0 | 0 | 11 | 21 | 11 |
| 12:15 12:30 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 8 | 0 | 8 | 0 | 0 | 0 | 9 | 17 | 9 |
| 12:30 12:45 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 9 | 0 | 9 | 0 | 0 | 0 | 10 | 19 | 10 |
| 12:45 13:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | 0 | 8 | 0 | 0 | 0 | 8 | 16 | 8 |
| 13:00 13:15 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 8 | 0 | 8 | 0 | 0 | 0 | 9 | 17 | 9 |
| 13:15 13:30 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 2 | 2 | 1 | 5 | 0 | 6 | 0 | 0 | 0 | 6 | 12 | 7 |
| 15:00 15:15 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 7 | 0 | 7 | 0 | 0 | 0 | 8 | 15 | 8 |
| 15:15 15:30 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 10 | 0 | 10 | 0 | 0 | 0 | 11 | 21 | 11 |
| 15:30 15:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 4 | 0 | 0 | 0 | 4 | 8 | 4 |
| 15:45 16:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 2 | 9 | 0 | 11 | 0 | 0 | 0 | 9 | 20 | 11 |
| 16:00 16:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | 0 | 8 | 0 | 0 | 0 | 8 | 16 | 8 |
| 16:15 16:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 4 | 0 | 0 | 0 | 4 | 8 | 4 |
| 16:30 16:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 5 | 0 | 0 | 0 | 5 | 10 | 5 |
| 16:45 17:00 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 3 | 0 | 3 | 0 | 0 | 0 | 4 | 7 | 4 |
| 17:00 17:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 4 | 0 | 0 | 0 | 4 | 8 | 4 |
| 17:15 17:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 4 | 0 | 0 | 0 | 4 | 8 | 4 |
| 17:30 17:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 4 | 0 | 0 | 0 | 4 | 8 | 4 |
| 17:45 18:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 4 | 0 | 0 | 0 | 4 | 8 | 4 |
| Total: None | 0 | 0 | 0 | 0 | 11 | 0 | 0 | 14 | 14 | 3 | 220 | 0 | 223 | 0 | 0 | 0 | 231 | 454 | 234 |



Transportation Services - Traffic Services

Turning Movement Count - Study Results

CARLING AVE EB @ SAIGON CRT

Survey Date: Thursday, April 05, 2018

WO No: 37688

Start Time: 07:00

Device: Miovision

Full Study 15 Minute U-Turn Total

SAIGON CRT

CARLING AVE EB

| Time Period | | Northbound U-Turn Total | Southbound U-Turn Total | Eastbound U-Turn Total | Westbound U-Turn Total | Total |
|-------------|-------|----------------------------|----------------------------|---------------------------|---------------------------|-------|
| 07:00 | 07:15 | 0 | 0 | 0 | 0 | 0 |
| 07:15 | 07:30 | 0 | 0 | 0 | 0 | 0 |
| 07:30 | 07:45 | 0 | 0 | 0 | 0 | 0 |
| 07:45 | 08:00 | 0 | 0 | 0 | 0 | 0 |
| 08:00 | 08:15 | 0 | 0 | 0 | 0 | 0 |
| 08:15 | 08:30 | 0 | 0 | 0 | 0 | 0 |
| 08:30 | 08:45 | 0 | 0 | 0 | 0 | 0 |
| 08:45 | 09:00 | 0 | 0 | 0 | 0 | 0 |
| 09:00 | 09:15 | 0 | 0 | 0 | 0 | 0 |
| 09:15 | 09:30 | 0 | 0 | 0 | 0 | 0 |
| 09:30 | 09:45 | 0 | 0 | 0 | 0 | 0 |
| 09:45 | 10:00 | 0 | 0 | 0 | 0 | 0 |
| 11:30 | 11:45 | 0 | 0 | 0 | 0 | 0 |
| 11:45 | 12:00 | 0 | 0 | 0 | 0 | 0 |
| 12:00 | 12:15 | 0 | 0 | 0 | 0 | 0 |
| 12:15 | 12:30 | 0 | 0 | 0 | 0 | 0 |
| 12:30 | 12:45 | 0 | 0 | 0 | 0 | 0 |
| 12:45 | 13:00 | 0 | 0 | 0 | 0 | 0 |
| 13:00 | 13:15 | 0 | 0 | 0 | 0 | 0 |
| 13:15 | 13:30 | 0 | 0 | 0 | 0 | 0 |
| 15:00 | 15:15 | 0 | 0 | 0 | 0 | 0 |
| 15:15 | 15:30 | 0 | 0 | 0 | 0 | 0 |
| 15:30 | 15:45 | 0 | 0 | 0 | 0 | 0 |
| 15:45 | 16:00 | 0 | 0 | 0 | 0 | 0 |
| 16:00 | 16:15 | 0 | 0 | 0 | 0 | 0 |
| 16:15 | 16:30 | 0 | 0 | 0 | 0 | 0 |
| 16:30 | 16:45 | 0 | 0 | 0 | 0 | 0 |
| 16:45 | 17:00 | 0 | 0 | 0 | 0 | 0 |
| 17:00 | 17:15 | 0 | 0 | 0 | 0 | 0 |
| 17:15 | 17:30 | 0 | 0 | 0 | 0 | 0 |
| 17:30 | 17:45 | 0 | 0 | 0 | 0 | 0 |
| 17:45 | 18:00 | 0 | 0 | 0 | 0 | 0 |
| Total | | 0 | 0 | 0 | 0 | 0 |

Turning Movement Count - Study Results

CARLING AVE WB @ SAIGON CRT

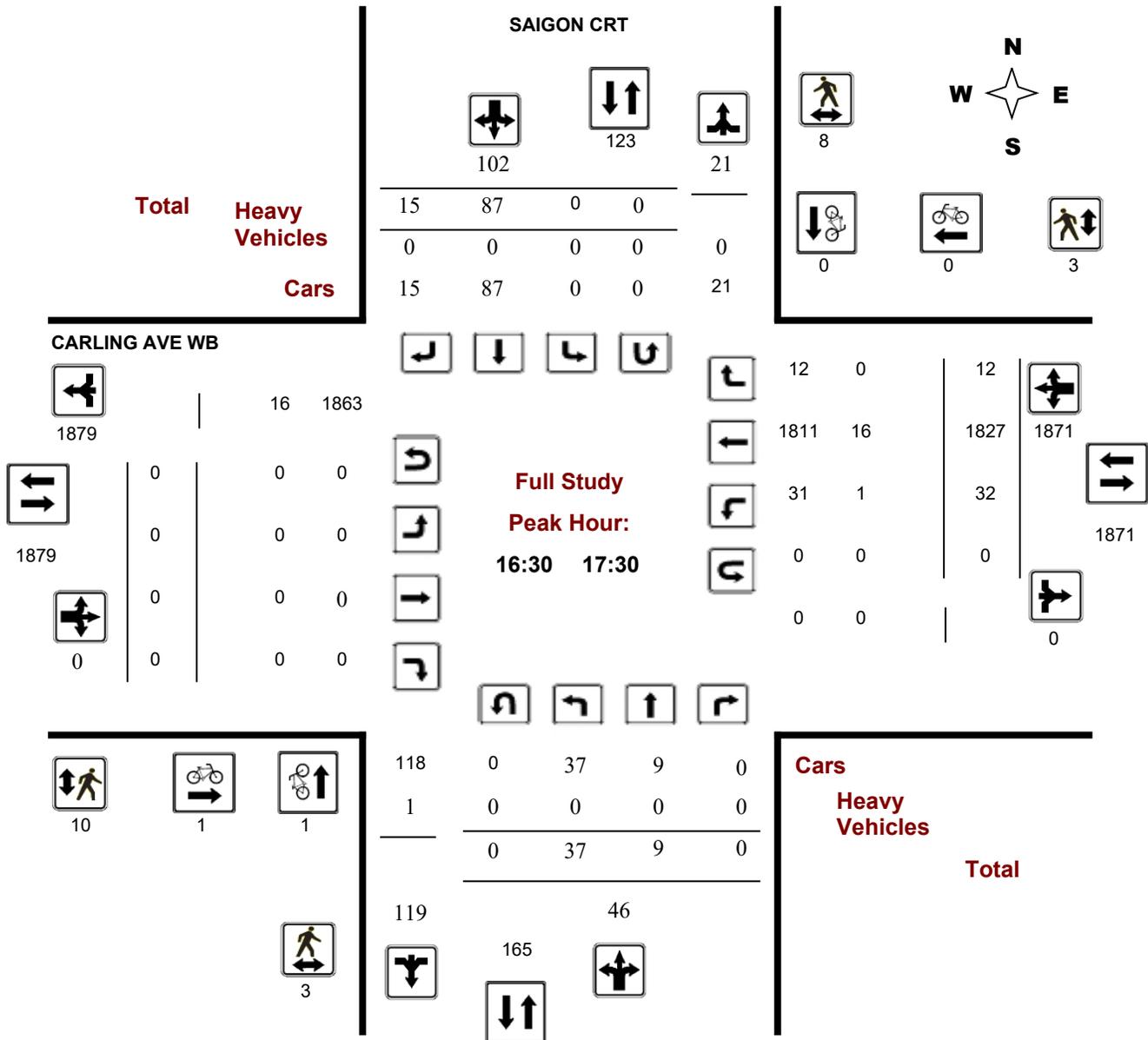
Survey Date: Thursday, April 05, 2018

WO No: 37689

Start Time: 07:00

Device: Miovision

Full Study Peak Hour Diagram



Turning Movement Count - Peak Hour Diagram

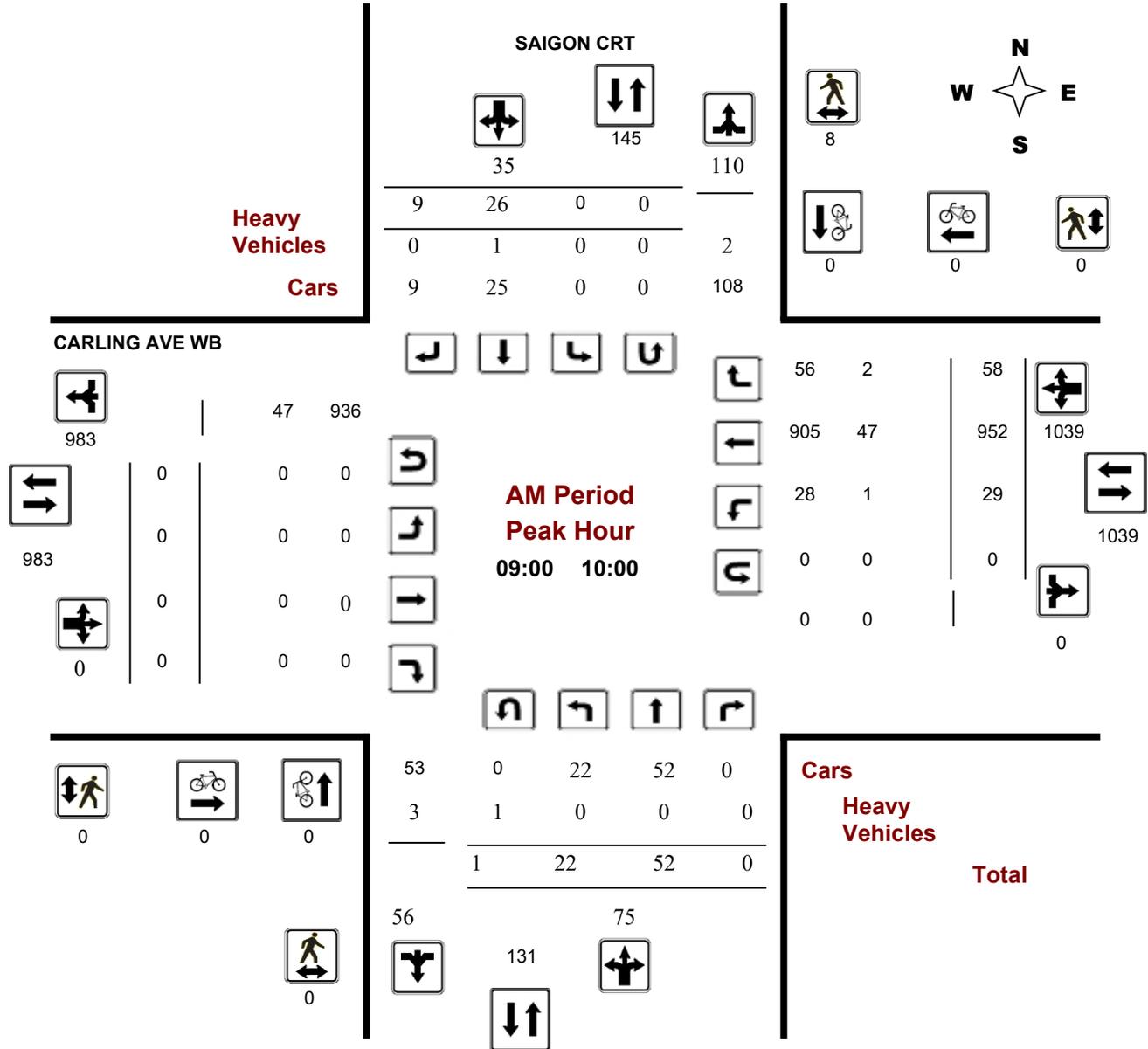
CARLING AVE WB @ SAIGON CRT

Survey Date: Thursday, April 05, 2018

Start Time: 07:00

WO No: 37689

Device: Miovision



Turning Movement Count - Peak Hour Diagram

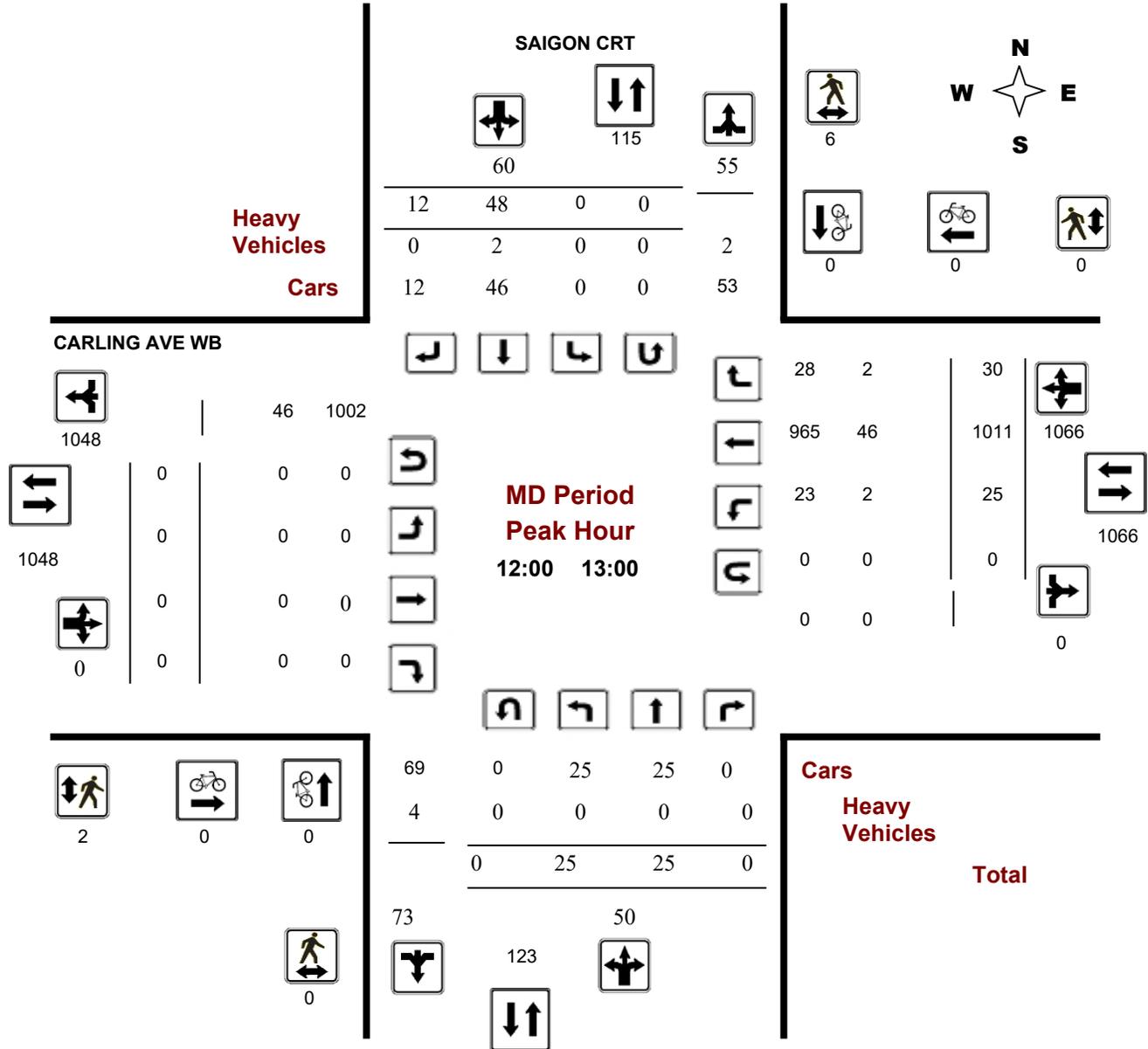
CARLING AVE WB @ SAIGON CRT

Survey Date: Thursday, April 05, 2018

Start Time: 07:00

WO No: 37689

Device: Miovision



Comments

Turning Movement Count - Peak Hour Diagram

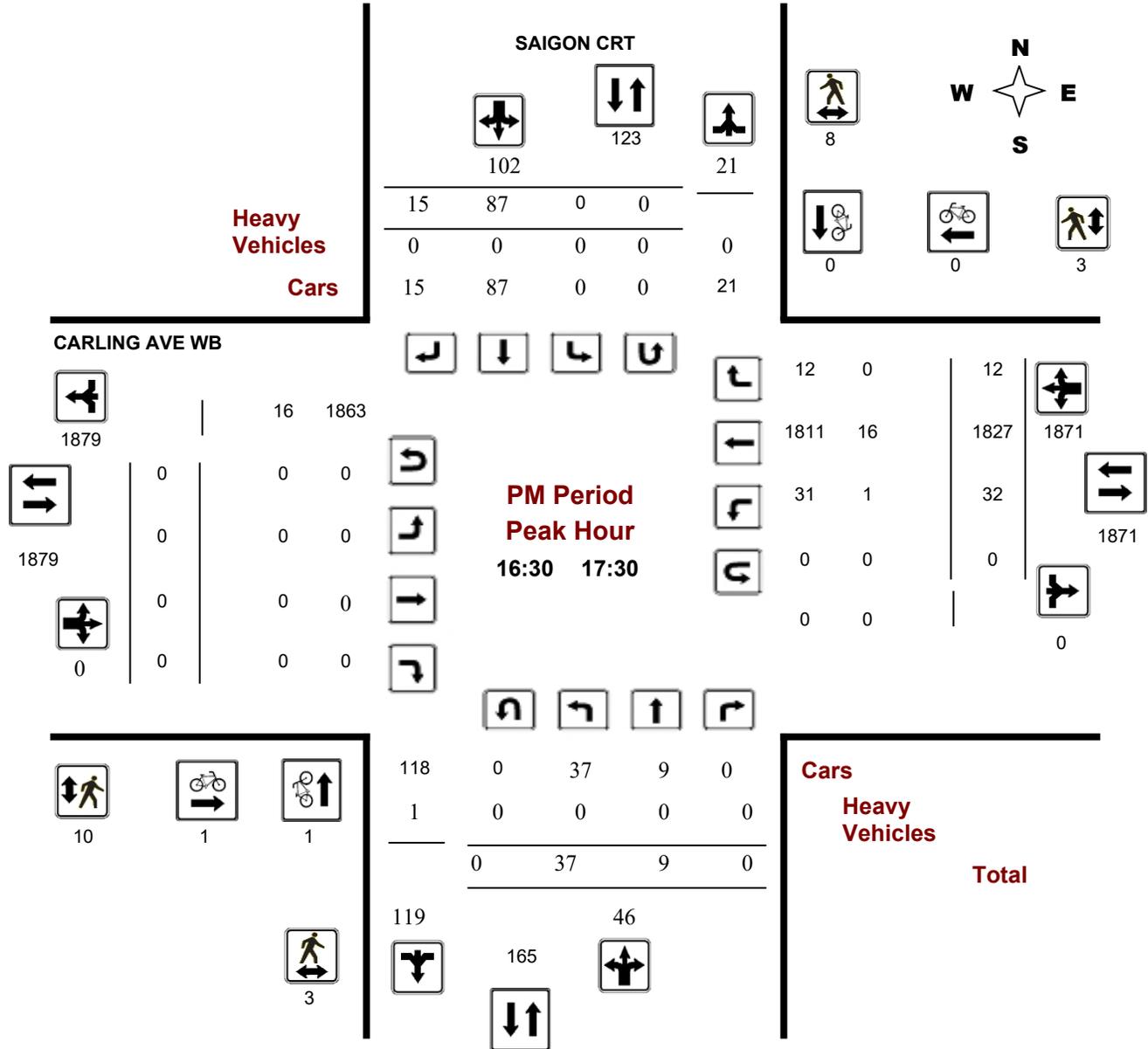
CARLING AVE WB @ SAIGON CRT

Survey Date: Thursday, April 05, 2018

Start Time: 07:00

WO No: 37689

Device: Miovision



Comments



Transportation Services - Traffic Services

Turning Movement Count - Study Results

CARLING AVE WB @ SAIGON CRT

Survey Date: Thursday, April 05, 2018

WO No: 37689

Start Time: 07:00

Device: Miovision

Full Study Summary (8 HR Standard)

Survey Date: Thursday, April 05, 2018

Total Observed U-Turns

AADT Factor

Northbound: 1 Southbound: 0
 Eastbound: 0 Westbound: 0

.90

SAIGON CRT

CARLING AVE WB

| Period | SAIGON CRT Northbound | | | | | SAIGON CRT Southbound | | | | | CARLING AVE WB Eastbound | | | | | CARLING AVE WB Westbound | | | | | Grand Total |
|---|-----------------------|-----|----|--------|---------|-----------------------|-----|----|--------|---------|--------------------------|----|----|-------------|---------|--------------------------|-------|-----|--------|---------|-------------|
| | LT | ST | RT | NB TOT | STR TOT | LT | ST | RT | SB TOT | STR TOT | LT | ST | RT | EB TOT | STR TOT | LT | ST | RT | WB TOT | STR TOT | |
| 07:00 08:00 | 19 | 55 | 0 | 74 | 89 | 0 | 13 | 2 | 15 | 89 | 0 | 0 | 0 | 0 | 0 | 10 | 610 | 55 | 675 | 675 | 764 |
| 08:00 09:00 | 27 | 80 | 0 | 107 | 120 | 0 | 11 | 2 | 13 | 120 | 0 | 0 | 0 | 0 | 0 | 32 | 801 | 84 | 917 | 917 | 1037 |
| 09:00 10:00 | 22 | 52 | 0 | 74 | 109 | 0 | 26 | 9 | 35 | 109 | 0 | 0 | 0 | 0 | 0 | 29 | 952 | 58 | 1039 | 1039 | 1148 |
| 11:30 12:30 | 22 | 15 | 0 | 37 | 94 | 0 | 47 | 10 | 57 | 94 | 0 | 0 | 0 | 0 | 0 | 22 | 999 | 31 | 1052 | 1052 | 1146 |
| 12:30 13:30 | 32 | 28 | 0 | 60 | 101 | 0 | 34 | 7 | 41 | 101 | 0 | 0 | 0 | 0 | 0 | 30 | 998 | 32 | 1060 | 1060 | 1161 |
| 15:00 16:00 | 22 | 5 | 0 | 27 | 85 | 0 | 53 | 5 | 58 | 85 | 0 | 0 | 0 | 0 | 0 | 28 | 1420 | 17 | 1465 | 1465 | 1550 |
| 16:00 17:00 | 32 | 9 | 0 | 41 | 133 | 0 | 75 | 17 | 92 | 133 | 0 | 0 | 0 | 0 | 0 | 26 | 1784 | 14 | 1824 | 1824 | 1957 |
| 17:00 18:00 | 29 | 7 | 0 | 36 | 113 | 0 | 74 | 3 | 77 | 113 | 0 | 0 | 0 | 0 | 0 | 28 | 1710 | 5 | 1743 | 1743 | 1856 |
| Sub Total | 205 | 251 | 0 | 456 | 844 | 0 | 333 | 55 | 388 | 844 | 0 | 0 | 0 | 0 | 0 | 205 | 9274 | 296 | 9775 | 9775 | 10619 |
| U Turns | | | | 1 | 1 | | | | 0 | 1 | | | | 0 | | | | | 0 | 0 | 1 |
| Total | 205 | 251 | 0 | 457 | 845 | 0 | 333 | 55 | 388 | 845 | 0 | 0 | 0 | 0 | 0 | 205 | 9274 | 296 | 9775 | 9775 | 10620 |
| EQ 12Hr | 285 | 349 | 0 | 635 | 1175 | 0 | 463 | 76 | 539 | 1175 | 0 | 0 | 0 | 0 | 0 | 285 | 12891 | 411 | 13587 | 13587 | 14762 |
| Note: These values are calculated by multiplying the totals by the appropriate expansion factor. | | | | | | | | | | | | | | 1.39 | | | | | | | |
| AVG 12Hr | 242 | 296 | 0 | 539 | 1058 | 0 | 393 | 65 | 457 | 1058 | 0 | 0 | 0 | 0 | 0 | 242 | 10934 | 349 | 11525 | 12228 | 13286 |
| Note: These volumes are calculated by multiplying the Equivalent 12 hr. totals by the AADT factor. | | | | | | | | | | | | | | 0.9 | | | | | | | |
| AVG 24Hr | 317 | 388 | 0 | 706 | 1305 | 0 | 514 | 85 | 599 | 1305 | 0 | 0 | 0 | 0 | 0 | 317 | 14324 | 457 | 15097 | 15097 | 16402 |
| Note: These volumes are calculated by multiplying the Average Daily 12 hr. totals by 12 to 24 expansion factor. | | | | | | | | | | | | | | 1.31 | | | | | | | |

Note: U-Turns provided for approach totals. Refer to 'U-Turn' Report for specific breakdown.



Transportation Services - Traffic Services

Turning Movement Count - Study Results

CARLING AVE WB @ SAIGON CRT

Survey Date: Thursday, April 05, 2018

WO No: 37689

Start Time: 07:00

Device: Miovision

Full Study 15 Minute Increments

SAIGON CRT

CARLING AVE WB

Northbound

Southbound

Eastbound

Westbound

| Time Period | LT | ST | RT | N TOT | LT | ST | RT | S TOT | STR TOT | LT | ST | RT | E TOT | LT | ST | RT | W TOT | STR TOT | Grand Total |
|---------------|------------|------------|----------|------------|----------|------------|-----------|------------|-------------|----------|----------|----------|----------|------------|-------------|------------|-------------|-------------|----------------|
| 07:00 07:15 | 2 | 6 | 0 | 8 | 0 | 3 | 0 | 3 | 35 | 0 | 0 | 0 | 0 | 1 | 117 | 14 | 132 | 35 | 143 |
| 07:15 07:30 | 4 | 16 | 0 | 20 | 0 | 6 | 1 | 7 | 66 | 0 | 0 | 0 | 0 | 4 | 125 | 13 | 142 | 66 | 169 |
| 07:30 07:45 | 5 | 16 | 0 | 21 | 0 | 1 | 1 | 2 | 52 | 0 | 0 | 0 | 0 | 2 | 161 | 10 | 173 | 52 | 196 |
| 07:45 08:00 | 8 | 17 | 0 | 25 | 0 | 3 | 0 | 3 | 69 | 0 | 0 | 0 | 0 | 3 | 207 | 18 | 228 | 69 | 256 |
| 08:00 08:15 | 5 | 13 | 0 | 18 | 0 | 3 | 0 | 3 | 54 | 0 | 0 | 0 | 0 | 4 | 199 | 13 | 216 | 54 | 237 |
| 08:15 08:30 | 7 | 22 | 0 | 29 | 0 | 3 | 1 | 4 | 93 | 0 | 0 | 0 | 0 | 11 | 200 | 24 | 235 | 93 | 268 |
| 08:30 08:45 | 8 | 21 | 0 | 29 | 0 | 1 | 1 | 2 | 93 | 0 | 0 | 0 | 0 | 9 | 171 | 31 | 211 | 93 | 242 |
| 08:45 09:00 | 7 | 24 | 0 | 31 | 0 | 4 | 0 | 4 | 87 | 0 | 0 | 0 | 0 | 8 | 231 | 16 | 255 | 87 | 290 |
| 09:00 09:15 | 6 | 16 | 0 | 22 | 0 | 5 | 2 | 7 | 76 | 0 | 0 | 0 | 0 | 8 | 222 | 18 | 248 | 76 | 277 |
| 09:15 09:30 | 7 | 18 | 0 | 25 | 0 | 7 | 2 | 9 | 84 | 0 | 0 | 0 | 0 | 10 | 222 | 15 | 247 | 84 | 281 |
| 09:30 09:45 | 5 | 12 | 0 | 18 | 0 | 8 | 2 | 10 | 63 | 0 | 0 | 0 | 0 | 3 | 253 | 11 | 267 | 63 | 295 |
| 09:45 10:00 | 4 | 6 | 0 | 10 | 0 | 6 | 3 | 9 | 53 | 0 | 0 | 0 | 0 | 8 | 255 | 14 | 277 | 53 | 296 |
| 11:30 11:45 | 5 | 4 | 0 | 9 | 0 | 13 | 2 | 15 | 54 | 0 | 0 | 0 | 0 | 6 | 241 | 7 | 254 | 54 | 278 |
| 11:45 12:00 | 5 | 2 | 0 | 7 | 0 | 5 | 0 | 5 | 35 | 0 | 0 | 0 | 0 | 6 | 258 | 10 | 274 | 35 | 286 |
| 12:00 12:15 | 8 | 1 | 0 | 9 | 0 | 13 | 1 | 14 | 51 | 0 | 0 | 0 | 0 | 6 | 270 | 8 | 284 | 51 | 307 |
| 12:15 12:30 | 4 | 8 | 0 | 12 | 0 | 16 | 7 | 23 | 69 | 0 | 0 | 0 | 0 | 4 | 230 | 6 | 240 | 69 | 275 |
| 12:30 12:45 | 6 | 9 | 0 | 15 | 0 | 13 | 2 | 15 | 68 | 0 | 0 | 0 | 0 | 9 | 254 | 7 | 270 | 68 | 300 |
| 12:45 13:00 | 7 | 7 | 0 | 14 | 0 | 6 | 2 | 8 | 50 | 0 | 0 | 0 | 0 | 6 | 257 | 9 | 272 | 50 | 294 |
| 13:00 13:15 | 6 | 5 | 0 | 11 | 0 | 4 | 1 | 5 | 38 | 0 | 0 | 0 | 0 | 4 | 249 | 9 | 262 | 38 | 278 |
| 13:15 13:30 | 13 | 7 | 0 | 20 | 0 | 11 | 2 | 13 | 69 | 0 | 0 | 0 | 0 | 11 | 238 | 7 | 256 | 69 | 289 |
| 15:00 15:15 | 3 | 1 | 0 | 4 | 0 | 14 | 1 | 15 | 46 | 0 | 0 | 0 | 0 | 7 | 324 | 5 | 336 | 46 | 355 |
| 15:15 15:30 | 5 | 1 | 0 | 6 | 0 | 9 | 0 | 9 | 37 | 0 | 0 | 0 | 0 | 10 | 336 | 2 | 348 | 37 | 363 |
| 15:30 15:45 | 6 | 0 | 0 | 6 | 0 | 11 | 2 | 13 | 39 | 0 | 0 | 0 | 0 | 5 | 402 | 4 | 411 | 39 | 430 |
| 15:45 16:00 | 8 | 3 | 0 | 11 | 0 | 19 | 2 | 21 | 66 | 0 | 0 | 0 | 0 | 6 | 358 | 6 | 370 | 66 | 402 |
| 16:00 16:15 | 4 | 2 | 0 | 6 | 0 | 24 | 1 | 25 | 66 | 0 | 0 | 0 | 0 | 4 | 407 | 5 | 416 | 66 | 447 |
| 16:15 16:30 | 9 | 1 | 0 | 10 | 0 | 13 | 3 | 16 | 46 | 0 | 0 | 0 | 0 | 4 | 438 | 2 | 444 | 46 | 470 |
| 16:30 16:45 | 8 | 5 | 0 | 13 | 0 | 19 | 7 | 26 | 74 | 0 | 0 | 0 | 0 | 6 | 481 | 5 | 492 | 74 | 531 |
| 16:45 17:00 | 11 | 1 | 0 | 12 | 0 | 19 | 6 | 25 | 71 | 0 | 0 | 0 | 0 | 12 | 458 | 2 | 472 | 71 | 509 |
| 17:00 17:15 | 7 | 2 | 0 | 9 | 0 | 29 | 1 | 30 | 79 | 0 | 0 | 0 | 0 | 7 | 426 | 2 | 435 | 79 | 474 |
| 17:15 17:30 | 11 | 1 | 0 | 12 | 0 | 20 | 1 | 21 | 64 | 0 | 0 | 0 | 0 | 7 | 462 | 3 | 472 | 64 | 505 |
| 17:30 17:45 | 5 | 4 | 0 | 9 | 0 | 18 | 0 | 18 | 56 | 0 | 0 | 0 | 0 | 7 | 460 | 0 | 467 | 56 | 494 |
| 17:45 18:00 | 6 | 0 | 0 | 6 | 0 | 7 | 1 | 8 | 28 | 0 | 0 | 0 | 0 | 7 | 362 | 0 | 369 | 28 | 383 |
| Total: | 205 | 251 | 0 | 457 | 0 | 333 | 55 | 388 | 1931 | 0 | 0 | 0 | 0 | 205 | 9274 | 296 | 9775 | 1931 | 10,620 |

Note: U-Turns are included in Totals.



Transportation Services - Traffic Services

Turning Movement Count - Study Results

CARLING AVE WB @ SAIGON CRT

Survey Date: Thursday, April 05, 2018

WO No: 37689

Start Time: 07:00

Device: Miovision

Full Study Cyclist Volume

| Time Period | SAIGON CRT | | | CARLING AVE WB | | | Grand Total |
|--------------|------------|------------|--------------|----------------|-----------|--------------|-------------|
| | Northbound | Southbound | Street Total | Eastbound | Westbound | Street Total | |
| 07:00 07:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 07:15 07:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 07:30 07:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 07:45 08:00 | 0 | 1 | 1 | 0 | 1 | 1 | 2 |
| 08:00 08:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 08:15 08:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 08:30 08:45 | 0 | 1 | 1 | 0 | 0 | 0 | 1 |
| 08:45 09:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 09:00 09:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 09:15 09:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 09:30 09:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 09:45 10:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11:30 11:45 | 0 | 0 | 0 | 0 | 1 | 1 | 1 |
| 11:45 12:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 12:00 12:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 12:15 12:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 12:30 12:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 12:45 13:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 13:00 13:15 | 0 | 0 | 0 | 1 | 0 | 1 | 1 |
| 13:15 13:30 | 0 | 0 | 0 | 1 | 0 | 1 | 1 |
| 15:00 15:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 15:15 15:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 15:30 15:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 15:45 16:00 | 1 | 0 | 1 | 0 | 0 | 0 | 1 |
| 16:00 16:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 16:15 16:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 16:30 16:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 16:45 17:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 17:00 17:15 | 0 | 0 | 0 | 1 | 0 | 1 | 1 |
| 17:15 17:30 | 1 | 0 | 1 | 0 | 0 | 0 | 1 |
| 17:30 17:45 | 1 | 0 | 1 | 0 | 0 | 0 | 1 |
| 17:45 18:00 | 0 | 0 | 0 | 0 | 1 | 1 | 1 |
| Total | 3 | 2 | 5 | 3 | 3 | 6 | 11 |



Transportation Services - Traffic Services

Turning Movement Count - Study Results

CARLING AVE WB @ SAIGON CRT

Survey Date: Thursday, April 05, 2018

WO No: 37689

Start Time: 07:00

Device: Miovision

Full Study Pedestrian Volume

SAIGON CRT

CARLING AVE WB

| Time Period | NB Approach (E or W Crossing) | SB Approach (E or W Crossing) | Total | EB Approach (N or S Crossing) | WB Approach (N or S Crossing) | Total | Grand Total |
|--------------------|----------------------------------|----------------------------------|-----------|----------------------------------|----------------------------------|-----------|-------------|
| 07:00 07:15 | 0 | 1 | 1 | 2 | 0 | 2 | 3 |
| 07:15 07:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 07:30 07:45 | 0 | 1 | 1 | 1 | 0 | 1 | 2 |
| 07:45 08:00 | 0 | 2 | 2 | 1 | 0 | 1 | 3 |
| 08:00 08:15 | 0 | 2 | 2 | 1 | 0 | 1 | 3 |
| 08:15 08:30 | 0 | 0 | 0 | 4 | 0 | 4 | 4 |
| 08:30 08:45 | 0 | 1 | 1 | 2 | 0 | 2 | 3 |
| 08:45 09:00 | 0 | 6 | 6 | 1 | 0 | 1 | 7 |
| 09:00 09:15 | 0 | 1 | 1 | 0 | 0 | 0 | 1 |
| 09:15 09:30 | 0 | 3 | 3 | 0 | 0 | 0 | 3 |
| 09:30 09:45 | 0 | 3 | 3 | 0 | 0 | 0 | 3 |
| 09:45 10:00 | 0 | 1 | 1 | 0 | 0 | 0 | 1 |
| 11:30 11:45 | 0 | 1 | 1 | 0 | 0 | 0 | 1 |
| 11:45 12:00 | 0 | 2 | 2 | 1 | 0 | 1 | 3 |
| 12:00 12:15 | 0 | 2 | 2 | 0 | 0 | 0 | 2 |
| 12:15 12:30 | 0 | 1 | 1 | 1 | 0 | 1 | 2 |
| 12:30 12:45 | 0 | 2 | 2 | 1 | 0 | 1 | 3 |
| 12:45 13:00 | 0 | 1 | 1 | 0 | 0 | 0 | 1 |
| 13:00 13:15 | 0 | 3 | 3 | 1 | 0 | 1 | 4 |
| 13:15 13:30 | 0 | 1 | 1 | 2 | 0 | 2 | 3 |
| 15:00 15:15 | 0 | 2 | 2 | 1 | 0 | 1 | 3 |
| 15:15 15:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 15:30 15:45 | 0 | 2 | 2 | 1 | 0 | 1 | 3 |
| 15:45 16:00 | 0 | 1 | 1 | 1 | 0 | 1 | 2 |
| 16:00 16:15 | 0 | 3 | 3 | 0 | 0 | 0 | 3 |
| 16:15 16:30 | 0 | 0 | 0 | 2 | 0 | 2 | 2 |
| 16:30 16:45 | 0 | 3 | 3 | 2 | 0 | 2 | 5 |
| 16:45 17:00 | 0 | 3 | 3 | 1 | 0 | 1 | 4 |
| 17:00 17:15 | 2 | 2 | 4 | 4 | 2 | 6 | 10 |
| 17:15 17:30 | 1 | 0 | 1 | 3 | 1 | 4 | 5 |
| 17:30 17:45 | 0 | 5 | 5 | 2 | 0 | 2 | 7 |
| 17:45 18:00 | 0 | 2 | 2 | 4 | 0 | 4 | 6 |
| Total | 3 | 57 | 60 | 39 | 3 | 42 | 102 |



Transportation Services - Traffic Services

Turning Movement Count - Study Results

CARLING AVE WB @ SAIGON CRT

Survey Date: Thursday, April 05, 2018

WO No: 37689

Start Time: 07:00

Device: Miovision

Full Study Heavy Vehicles

SAIGON CRT

CARLING AVE WB

Northbound Southbound Eastbound Westbound

| Time Period | Northbound | | | N TOT | Southbound | | | S TOT | STR TOT | Eastbound | | | E TOT | Westbound | | | W TOT | STR TOT | Grand Total |
|-------------|------------|----|----|----------|------------|----|----|----------|------------|-----------|----|----|----------|-----------|-----|----|----------|------------|----------------|
| | LT | ST | RT | | LT | ST | RT | | | LT | ST | RT | | LT | ST | RT | | | |
| 07:00 07:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 0 | 7 | 0 | 7 | 14 | 7 |
| 07:15 07:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 3 | 0 | 3 | 6 | 3 |
| 07:30 07:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 0 | 6 | 0 | 6 | 12 | 6 |
| 07:45 08:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 11 | 0 | 11 | 1 | 12 | 23 | 12 |
| 08:00 08:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 15 | 0 | 15 | 0 | 15 | 30 | 15 |
| 08:15 08:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 13 | 0 | 13 | 0 | 13 | 26 | 13 |
| 08:30 08:45 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 1 | 2 | 0 | 0 | 0 | 5 | 0 | 5 | 0 | 5 | 10 | 6 |
| 08:45 09:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 8 | 0 | 8 | 1 | 9 | 17 | 9 |
| 09:00 09:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | 0 | 8 | 0 | 8 | 16 | 8 |
| 09:15 09:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 0 | 10 | 0 | 10 | 20 | 10 |
| 09:30 09:45 | 0 | 0 | 0 | 3 | 0 | 1 | 0 | 3 | 6 | 0 | 0 | 0 | 16 | 0 | 16 | 2 | 18 | 34 | 20 |
| 09:45 10:00 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 13 | 1 | 13 | 0 | 14 | 27 | 14 |
| 11:30 11:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | 0 | 9 | 0 | 9 | 18 | 9 |
| 11:45 12:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | 0 | 9 | 0 | 9 | 18 | 9 |
| 12:00 12:15 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 3 | 4 | 0 | 0 | 0 | 11 | 0 | 11 | 2 | 13 | 24 | 14 |
| 12:15 12:30 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 16 | 1 | 16 | 0 | 17 | 33 | 17 |
| 12:30 12:45 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 1 | 2 | 0 | 0 | 0 | 11 | 0 | 11 | 0 | 11 | 22 | 12 |
| 12:45 13:00 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 8 | 1 | 8 | 0 | 9 | 17 | 9 |
| 13:00 13:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 11 | 0 | 11 | 1 | 12 | 23 | 12 |
| 13:15 13:30 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 1 | 2 | 0 | 0 | 0 | 6 | 0 | 6 | 0 | 6 | 12 | 7 |
| 15:00 15:15 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 5 | 1 | 5 | 0 | 6 | 11 | 6 |
| 15:15 15:30 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 8 | 1 | 8 | 0 | 9 | 17 | 9 |
| 15:30 15:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 0 | 6 | 0 | 6 | 12 | 6 |
| 15:45 16:00 | 1 | 1 | 0 | 2 | 0 | 0 | 0 | 1 | 3 | 0 | 0 | 0 | 7 | 0 | 6 | 0 | 6 | 13 | 8 |
| 16:00 16:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 4 | 0 | 4 | 8 | 4 |
| 16:15 16:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 5 | 0 | 5 | 10 | 5 |
| 16:30 16:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 3 | 0 | 3 | 6 | 3 |
| 16:45 17:00 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 5 | 1 | 5 | 0 | 6 | 11 | 6 |
| 17:00 17:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 2 | 0 | 2 | 4 | 2 |
| 17:15 17:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 0 | 6 | 0 | 6 | 12 | 6 |
| 17:30 17:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 0 | 6 | 0 | 6 | 12 | 6 |
| 17:45 18:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 2 | 0 | 2 | 4 | 2 |
| Total: None | 1 | 1 | 0 | 15 | 0 | 5 | 0 | 13 | 28 | 0 | 0 | 0 | 255 | 6 | 254 | 7 | 267 | 522 | 275 |



Transportation Services - Traffic Services

Turning Movement Count - Study Results

CARLING AVE WB @ SAIGON CRT

Survey Date: Thursday, April 05, 2018

WO No: 37689

Start Time: 07:00

Device: Miovision

Full Study 15 Minute U-Turn Total

SAIGON CRT

CARLING AVE WB

| Time Period | | Northbound U-Turn Total | Southbound U-Turn Total | Eastbound U-Turn Total | Westbound U-Turn Total | Total |
|-------------|-------|----------------------------|----------------------------|---------------------------|---------------------------|-------|
| 07:00 | 07:15 | 0 | 0 | 0 | 0 | 0 |
| 07:15 | 07:30 | 0 | 0 | 0 | 0 | 0 |
| 07:30 | 07:45 | 0 | 0 | 0 | 0 | 0 |
| 07:45 | 08:00 | 0 | 0 | 0 | 0 | 0 |
| 08:00 | 08:15 | 0 | 0 | 0 | 0 | 0 |
| 08:15 | 08:30 | 0 | 0 | 0 | 0 | 0 |
| 08:30 | 08:45 | 0 | 0 | 0 | 0 | 0 |
| 08:45 | 09:00 | 0 | 0 | 0 | 0 | 0 |
| 09:00 | 09:15 | 0 | 0 | 0 | 0 | 0 |
| 09:15 | 09:30 | 0 | 0 | 0 | 0 | 0 |
| 09:30 | 09:45 | 1 | 0 | 0 | 0 | 1 |
| 09:45 | 10:00 | 0 | 0 | 0 | 0 | 0 |
| 11:30 | 11:45 | 0 | 0 | 0 | 0 | 0 |
| 11:45 | 12:00 | 0 | 0 | 0 | 0 | 0 |
| 12:00 | 12:15 | 0 | 0 | 0 | 0 | 0 |
| 12:15 | 12:30 | 0 | 0 | 0 | 0 | 0 |
| 12:30 | 12:45 | 0 | 0 | 0 | 0 | 0 |
| 12:45 | 13:00 | 0 | 0 | 0 | 0 | 0 |
| 13:00 | 13:15 | 0 | 0 | 0 | 0 | 0 |
| 13:15 | 13:30 | 0 | 0 | 0 | 0 | 0 |
| 15:00 | 15:15 | 0 | 0 | 0 | 0 | 0 |
| 15:15 | 15:30 | 0 | 0 | 0 | 0 | 0 |
| 15:30 | 15:45 | 0 | 0 | 0 | 0 | 0 |
| 15:45 | 16:00 | 0 | 0 | 0 | 0 | 0 |
| 16:00 | 16:15 | 0 | 0 | 0 | 0 | 0 |
| 16:15 | 16:30 | 0 | 0 | 0 | 0 | 0 |
| 16:30 | 16:45 | 0 | 0 | 0 | 0 | 0 |
| 16:45 | 17:00 | 0 | 0 | 0 | 0 | 0 |
| 17:00 | 17:15 | 0 | 0 | 0 | 0 | 0 |
| 17:15 | 17:30 | 0 | 0 | 0 | 0 | 0 |
| 17:30 | 17:45 | 0 | 0 | 0 | 0 | 0 |
| 17:45 | 18:00 | 0 | 0 | 0 | 0 | 0 |
| Total | | 1 | 0 | 0 | 0 | 1 |

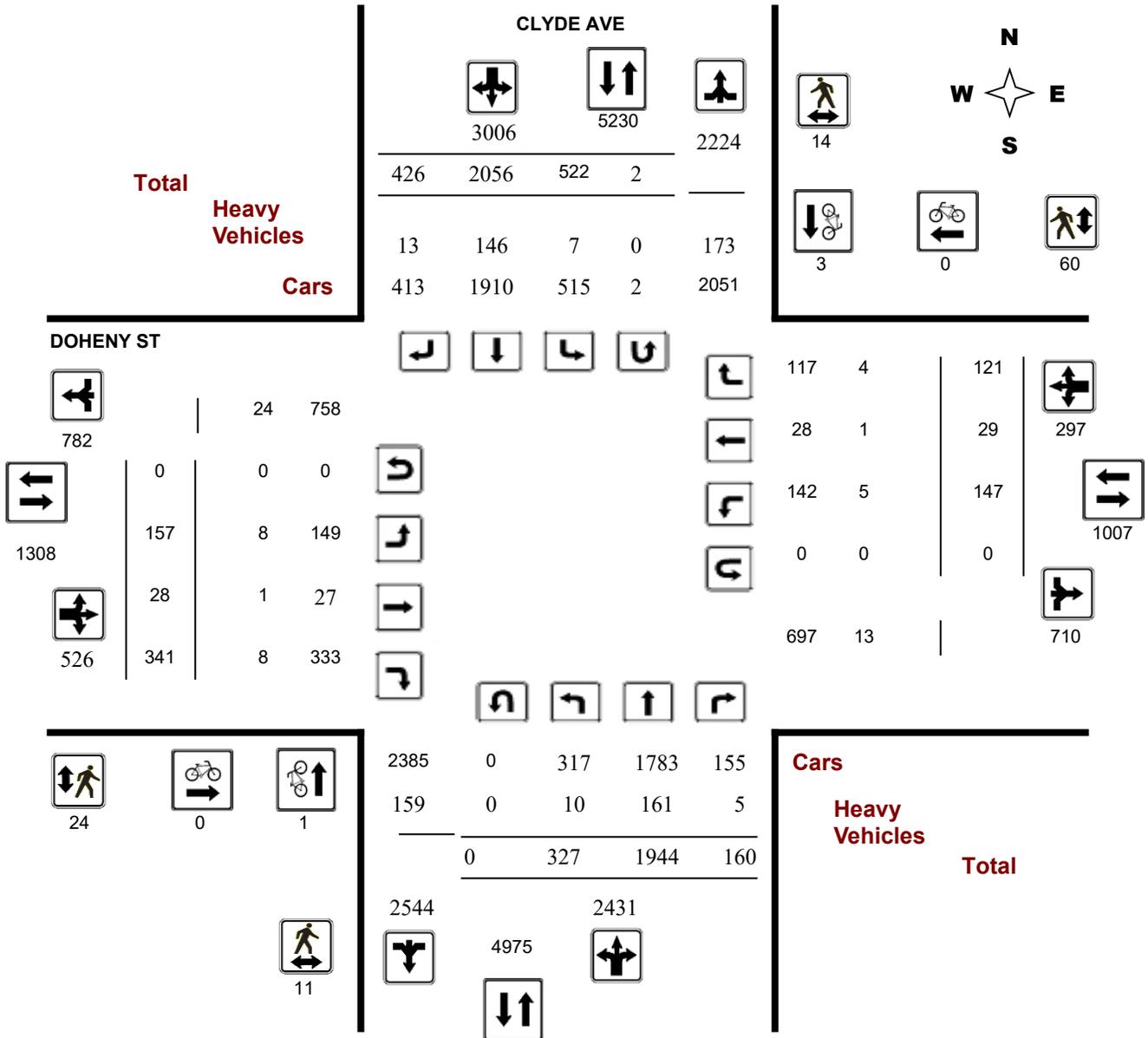
Survey Date: Wednesday, February 27, 2019

WO No: 38266

Start Time: 07:00

Device: Miovision

Full Study Diagram



Turning Movement Count - Study Results

CLYDE AVE @ DOHENY ST

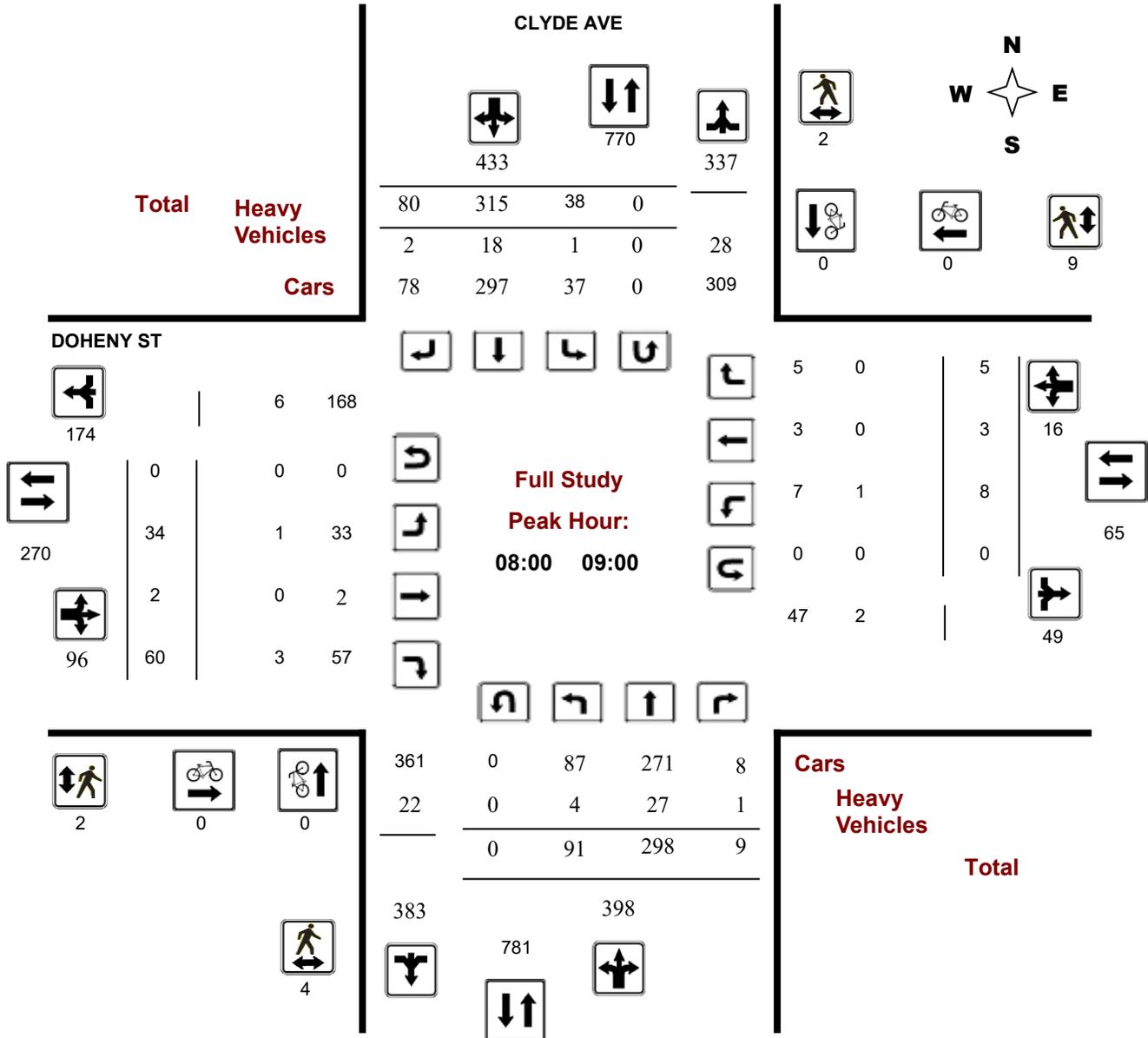
Survey Date: Wednesday, February 27, 2019

WO No: 38266

Start Time: 07:00

Device: Miovision

Full Study Peak Hour Diagram



Turning Movement Count - Peak Hour Diagram

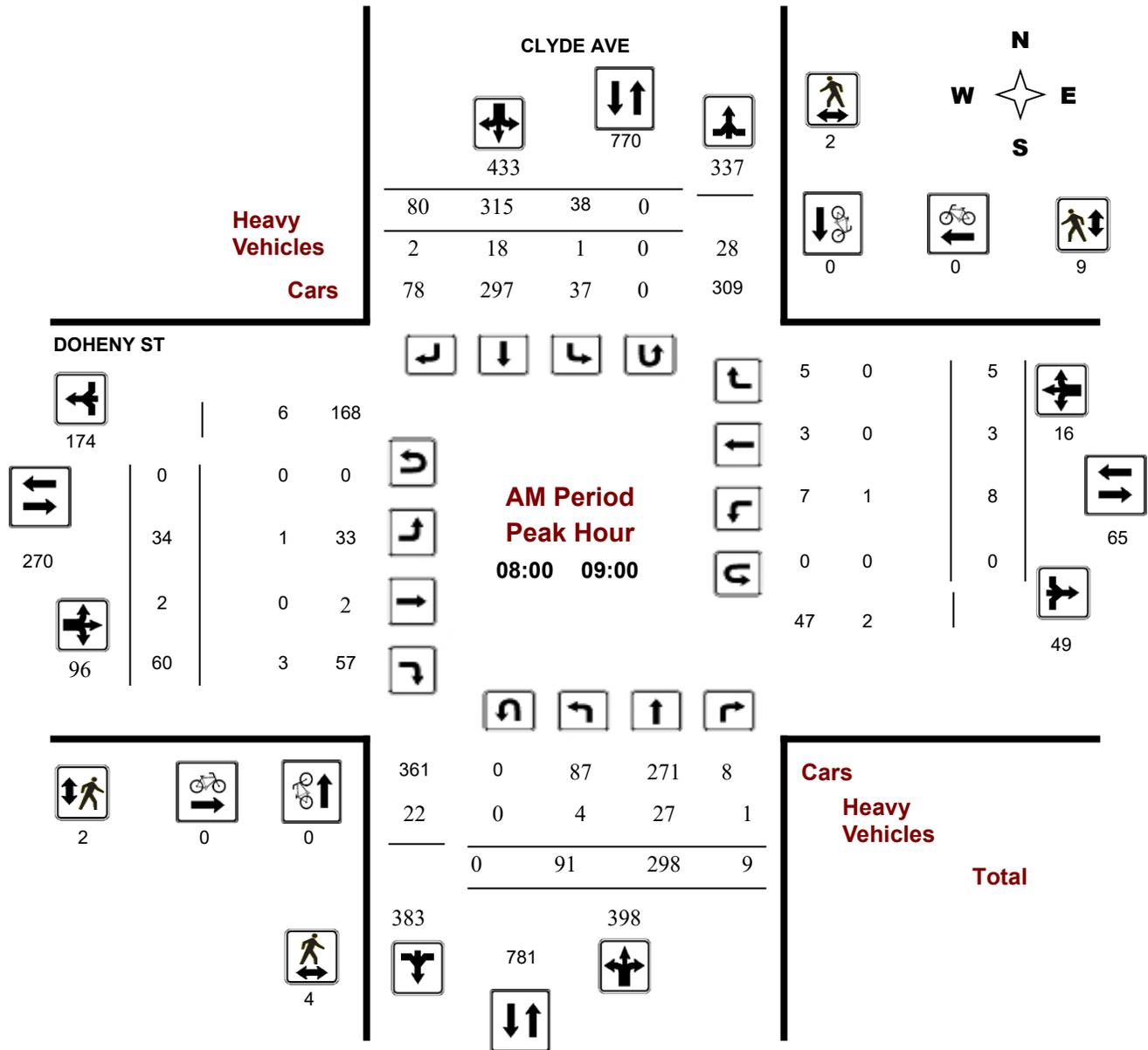
CLYDE AVE @ DOHENY ST

Survey Date: Wednesday, February 27, 2019

Start Time: 07:00

WO No: 38266

Device: Miovision



Turning Movement Count - Peak Hour Diagram

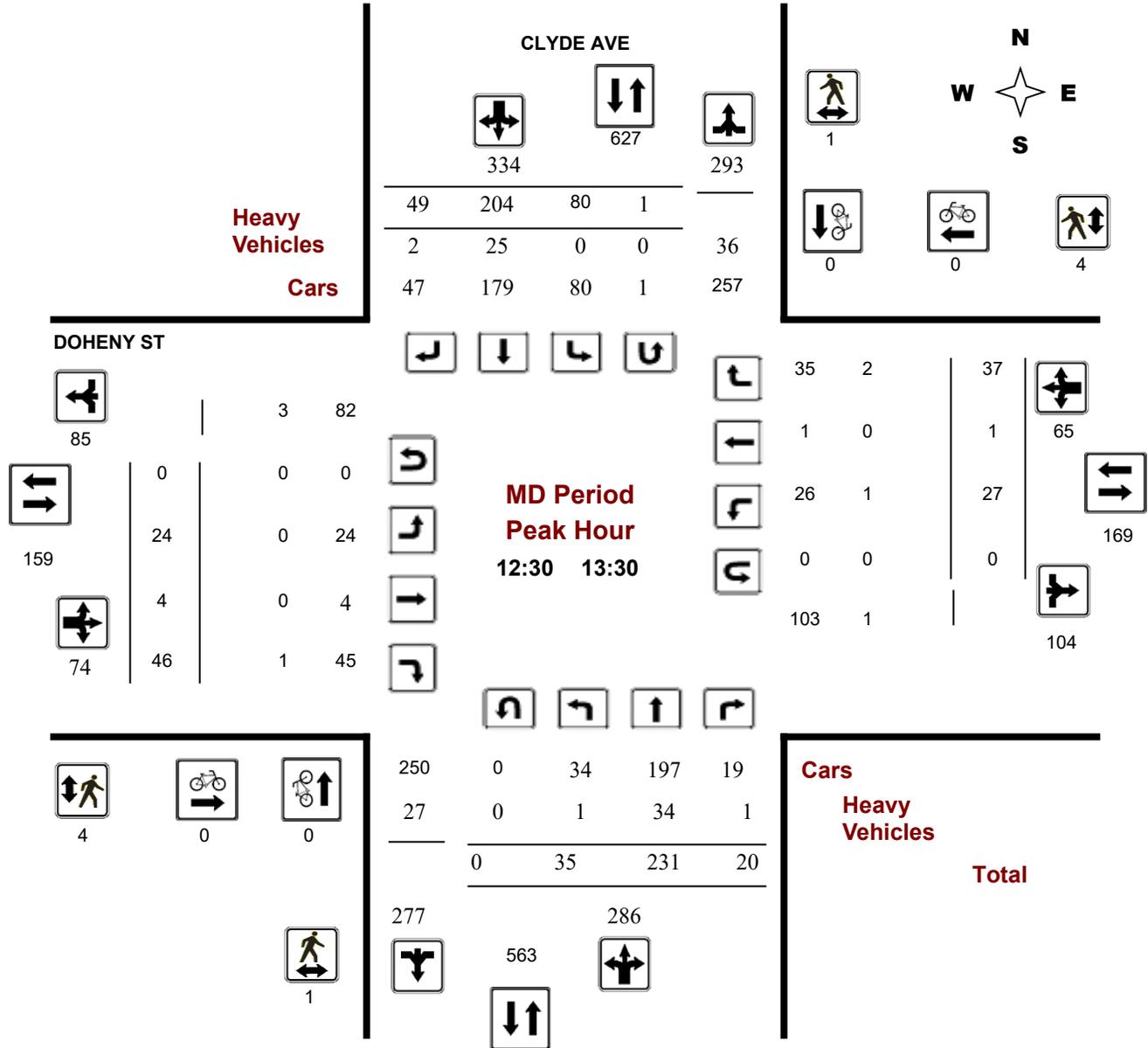
CLYDE AVE @ DOHENY ST

Survey Date: Wednesday, February 27, 2019

Start Time: 07:00

WO No: 38266

Device: Miovision



Turning Movement Count - Peak Hour Diagram

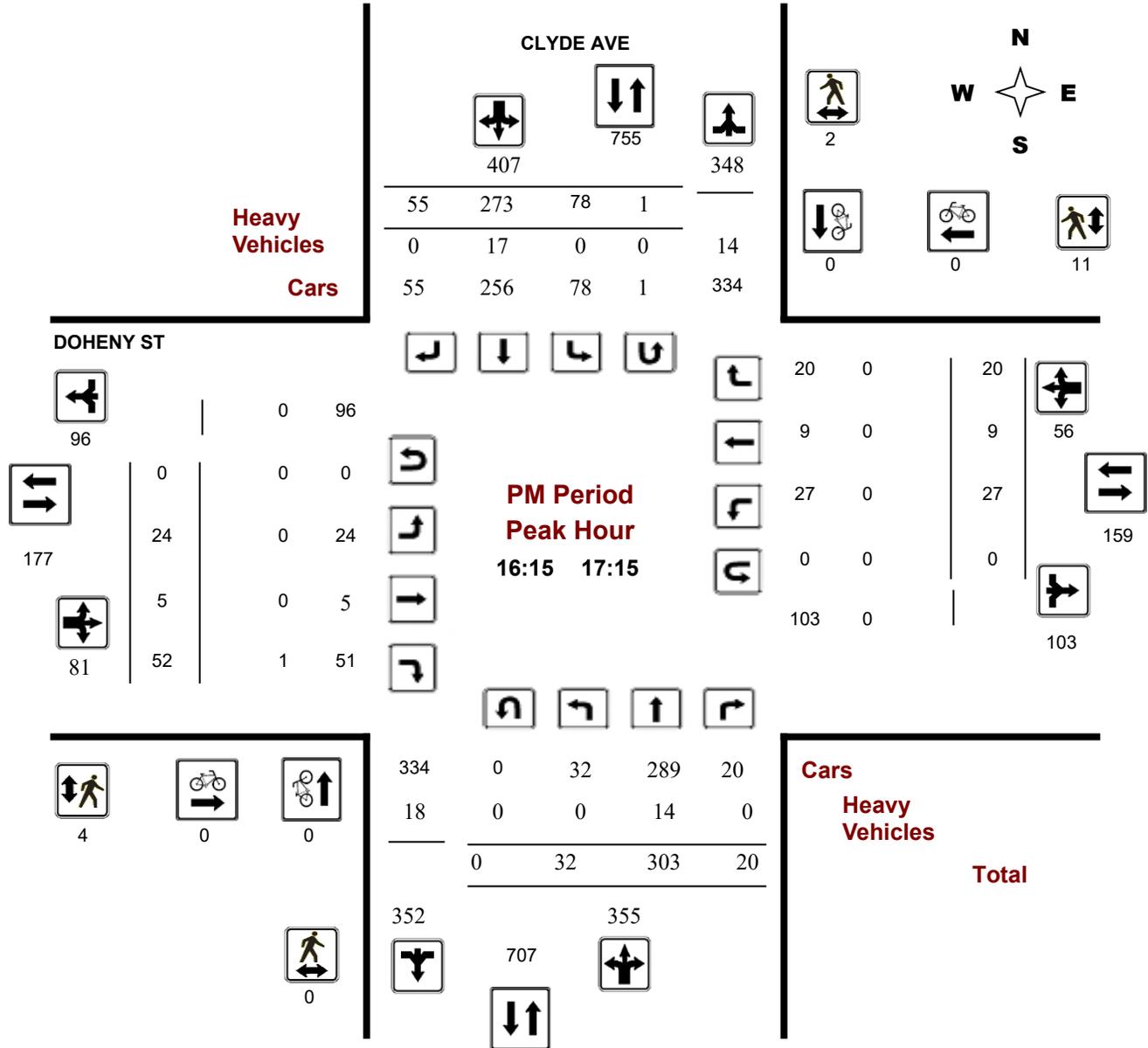
CLYDE AVE @ DOHENY ST

Survey Date: Wednesday, February 27, 2019

Start Time: 07:00

WO No: 38266

Device: Miovision





Transportation Services - Traffic Services

Turning Movement Count - Study Results

CLYDE AVE @ DOHENY ST

Survey Date: Wednesday, February 27, 2019

WO No: 38266

Start Time: 07:00

Device: Miovision

Full Study Summary (8 HR Standard)

Survey Date: Wednesday, February 27, 2019

Total Observed U-Turns
 Northbound: 0 Southbound: 2
 Eastbound: 0 Westbound: 0

AADT Factor
 1.00

| Period | CLYDE AVE | | | | | | | | | DOHENY ST | | | | | | | | | Grand Total | |
|---|------------|------|-----|--------|------------|------|------|--------|---------|-----------|----|-----|-------------|-----------|----|-----|--------|---------|-------------|--|
| | Northbound | | | | Southbound | | | | | Eastbound | | | | Westbound | | | | | | |
| | LT | ST | RT | NB TOT | LT | ST | RT | SB TOT | STR TOT | LT | ST | RT | EB TOT | LT | ST | RT | WB TOT | STR TOT | | |
| 07:00 08:00 | 36 | 166 | 7 | 209 | 18 | 301 | 47 | 366 | 575 | 8 | 3 | 29 | 40 | 4 | 2 | 3 | 9 | 49 | 624 | |
| 08:00 09:00 | 91 | 298 | 9 | 398 | 38 | 315 | 80 | 433 | 831 | 34 | 2 | 60 | 96 | 8 | 3 | 5 | 16 | 112 | 943 | |
| 09:00 10:00 | 40 | 206 | 18 | 264 | 73 | 256 | 58 | 387 | 651 | 17 | 4 | 28 | 49 | 14 | 6 | 11 | 31 | 80 | 731 | |
| 11:30 12:30 | 31 | 202 | 31 | 264 | 89 | 217 | 60 | 366 | 630 | 20 | 5 | 39 | 64 | 26 | 4 | 22 | 52 | 116 | 746 | |
| 12:30 13:30 | 35 | 231 | 20 | 286 | 80 | 204 | 49 | 333 | 619 | 24 | 4 | 46 | 74 | 27 | 1 | 37 | 65 | 139 | 758 | |
| 15:00 16:00 | 34 | 267 | 37 | 338 | 70 | 265 | 48 | 383 | 721 | 16 | 4 | 50 | 70 | 22 | 2 | 14 | 38 | 108 | 829 | |
| 16:00 17:00 | 34 | 305 | 18 | 357 | 68 | 278 | 52 | 398 | 755 | 20 | 5 | 52 | 77 | 27 | 10 | 13 | 50 | 127 | 882 | |
| 17:00 18:00 | 26 | 269 | 20 | 315 | 86 | 220 | 32 | 338 | 653 | 18 | 1 | 37 | 56 | 19 | 1 | 16 | 36 | 92 | 745 | |
| Sub Total | 327 | 1944 | 160 | 2431 | 522 | 2056 | 426 | 3004 | 5435 | 157 | 28 | 341 | 526 | 147 | 29 | 121 | 297 | 823 | 6258 | |
| U Turns | | | | 0 | | | | 2 | 2 | | | | 0 | | | | 0 | 0 | 2 | |
| Total | 327 | 1944 | 160 | 2431 | 522 | 2056 | 426 | 3006 | 5437 | 157 | 28 | 341 | 526 | 147 | 29 | 121 | 297 | 823 | 6260 | |
| EQ 12Hr | 455 | 2702 | 222 | 3379 | 726 | 2858 | 592 | 4178 | 7557 | 218 | 39 | 474 | 731 | 204 | 40 | 168 | 413 | 1144 | 8701 | |
| Note: These values are calculated by multiplying the totals by the appropriate expansion factor. | | | | | | | | | | | | | 1.39 | | | | | | | |
| AVG 12Hr | 455 | 2702 | 222 | 3379 | 726 | 3744 | 776 | 4178 | 7557 | 218 | 39 | 474 | 731 | 204 | 40 | 168 | 413 | 1144 | 8701 | |
| Note: These volumes are calculated by multiplying the Equivalent 12 hr. totals by the AADT factor. | | | | | | | | | | | | | 1.00 | | | | | | | |
| AVG 24Hr | 596 | 3540 | 291 | 4426 | 951 | 4905 | 1017 | 5473 | 9900 | 286 | 51 | 621 | 958 | 267 | 52 | 220 | 541 | 1499 | 11398 | |
| Note: These volumes are calculated by multiplying the Average Daily 12 hr. totals by 12 to 24 expansion factor. | | | | | | | | | | | | | 1.31 | | | | | | | |
| Note: U-Turns provided for approach totals. Refer to 'U-Turn' Report for specific breakdown. | | | | | | | | | | | | | | | | | | | | |



Transportation Services - Traffic Services

Turning Movement Count - Study Results

CLYDE AVE @ DOHENY ST

Survey Date: Wednesday, February 27, 2019

WO No: 38266

Start Time: 07:00

Device: Miovision

Full Study 15 Minute Increments

CLYDE AVE

DOHENY ST

Northbound

Southbound

Eastbound

Westbound

| Time Period | LT | ST | RT | N TOT | LT | ST | RT | S TOT | STR TOT | LT | ST | RT | E TOT | LT | ST | RT | W TOT | STR TOT | Grand Total |
|---------------|------------|-------------|------------|-------------|------------|-------------|------------|-------------|-------------|------------|-----------|------------|------------|------------|-----------|------------|------------|------------|----------------|
| 07:00 07:15 | 7 | 35 | 1 | 43 | 0 | 66 | 12 | 78 | 121 | 2 | 0 | 6 | 8 | 0 | 0 | 0 | 0 | 8 | 129 |
| 07:15 07:30 | 10 | 37 | 1 | 48 | 3 | 81 | 6 | 90 | 138 | 1 | 1 | 5 | 7 | 0 | 1 | 0 | 1 | 8 | 146 |
| 07:30 07:45 | 5 | 39 | 2 | 46 | 5 | 81 | 7 | 93 | 139 | 1 | 1 | 7 | 9 | 3 | 0 | 1 | 4 | 13 | 152 |
| 07:45 08:00 | 14 | 55 | 3 | 72 | 10 | 73 | 22 | 105 | 177 | 4 | 1 | 11 | 16 | 1 | 1 | 2 | 4 | 20 | 197 |
| 08:00 08:15 | 28 | 78 | 1 | 107 | 11 | 87 | 18 | 116 | 223 | 9 | 2 | 12 | 23 | 0 | 0 | 1 | 1 | 24 | 247 |
| 08:15 08:30 | 23 | 79 | 2 | 104 | 8 | 79 | 24 | 111 | 215 | 3 | 0 | 16 | 19 | 1 | 1 | 1 | 3 | 22 | 237 |
| 08:30 08:45 | 19 | 71 | 3 | 93 | 6 | 72 | 23 | 101 | 194 | 9 | 0 | 16 | 25 | 3 | 0 | 1 | 4 | 29 | 223 |
| 08:45 09:00 | 21 | 70 | 3 | 94 | 13 | 77 | 15 | 105 | 199 | 13 | 0 | 16 | 29 | 4 | 2 | 2 | 8 | 37 | 236 |
| 09:00 09:15 | 8 | 54 | 5 | 67 | 21 | 82 | 17 | 120 | 187 | 8 | 2 | 11 | 21 | 1 | 1 | 3 | 5 | 26 | 213 |
| 09:15 09:30 | 12 | 55 | 5 | 72 | 14 | 58 | 18 | 90 | 162 | 3 | 0 | 2 | 5 | 6 | 3 | 3 | 12 | 17 | 179 |
| 09:30 09:45 | 9 | 49 | 2 | 60 | 17 | 69 | 10 | 96 | 156 | 3 | 0 | 11 | 14 | 3 | 0 | 4 | 7 | 21 | 177 |
| 09:45 10:00 | 11 | 48 | 6 | 65 | 21 | 47 | 13 | 81 | 146 | 3 | 2 | 4 | 9 | 4 | 2 | 1 | 7 | 16 | 162 |
| 11:30 11:45 | 5 | 49 | 12 | 66 | 22 | 57 | 14 | 93 | 159 | 7 | 1 | 15 | 23 | 6 | 0 | 9 | 15 | 38 | 197 |
| 11:45 12:00 | 15 | 46 | 7 | 68 | 21 | 64 | 14 | 99 | 167 | 6 | 2 | 4 | 12 | 7 | 3 | 4 | 14 | 26 | 193 |
| 12:00 12:15 | 8 | 58 | 7 | 73 | 24 | 46 | 16 | 86 | 159 | 4 | 1 | 11 | 16 | 7 | 1 | 6 | 14 | 30 | 189 |
| 12:15 12:30 | 3 | 49 | 5 | 57 | 22 | 50 | 16 | 88 | 145 | 3 | 1 | 9 | 13 | 6 | 0 | 3 | 9 | 22 | 167 |
| 12:30 12:45 | 5 | 60 | 4 | 69 | 19 | 47 | 12 | 79 | 148 | 5 | 3 | 14 | 22 | 6 | 0 | 10 | 16 | 38 | 186 |
| 12:45 13:00 | 10 | 50 | 6 | 66 | 16 | 46 | 9 | 71 | 137 | 7 | 0 | 8 | 15 | 7 | 0 | 5 | 12 | 27 | 164 |
| 13:00 13:15 | 14 | 71 | 4 | 89 | 23 | 57 | 16 | 96 | 185 | 7 | 0 | 11 | 18 | 9 | 1 | 12 | 22 | 40 | 225 |
| 13:15 13:30 | 6 | 50 | 6 | 62 | 22 | 54 | 12 | 88 | 150 | 5 | 1 | 13 | 19 | 5 | 0 | 10 | 15 | 34 | 184 |
| 15:00 15:15 | 4 | 82 | 9 | 95 | 16 | 56 | 6 | 78 | 173 | 2 | 1 | 15 | 18 | 3 | 1 | 3 | 7 | 25 | 198 |
| 15:15 15:30 | 4 | 59 | 12 | 75 | 17 | 75 | 17 | 109 | 184 | 3 | 1 | 8 | 12 | 4 | 0 | 6 | 10 | 22 | 206 |
| 15:30 15:45 | 11 | 62 | 8 | 81 | 23 | 68 | 11 | 102 | 183 | 3 | 1 | 10 | 14 | 9 | 0 | 2 | 11 | 25 | 208 |
| 15:45 16:00 | 15 | 64 | 8 | 87 | 14 | 66 | 14 | 94 | 181 | 8 | 1 | 17 | 26 | 6 | 1 | 3 | 10 | 36 | 217 |
| 16:00 16:15 | 7 | 82 | 3 | 92 | 19 | 73 | 7 | 99 | 191 | 4 | 0 | 15 | 19 | 9 | 1 | 1 | 11 | 30 | 221 |
| 16:15 16:30 | 10 | 71 | 4 | 85 | 18 | 71 | 23 | 113 | 198 | 5 | 3 | 11 | 19 | 5 | 2 | 4 | 11 | 30 | 228 |
| 16:30 16:45 | 6 | 77 | 5 | 88 | 16 | 61 | 15 | 92 | 180 | 7 | 2 | 16 | 25 | 6 | 3 | 1 | 10 | 35 | 215 |
| 16:45 17:00 | 11 | 75 | 6 | 92 | 15 | 73 | 7 | 95 | 187 | 4 | 0 | 10 | 14 | 7 | 4 | 7 | 18 | 32 | 219 |
| 17:00 17:15 | 5 | 80 | 5 | 90 | 29 | 68 | 10 | 107 | 197 | 8 | 0 | 15 | 23 | 9 | 0 | 8 | 17 | 40 | 237 |
| 17:15 17:30 | 13 | 76 | 4 | 93 | 16 | 58 | 6 | 80 | 173 | 6 | 0 | 8 | 14 | 2 | 0 | 3 | 5 | 19 | 192 |
| 17:30 17:45 | 6 | 63 | 8 | 77 | 18 | 46 | 8 | 72 | 149 | 2 | 0 | 7 | 9 | 4 | 1 | 3 | 8 | 17 | 166 |
| 17:45 18:00 | 2 | 50 | 3 | 55 | 23 | 48 | 8 | 79 | 134 | 2 | 1 | 7 | 10 | 4 | 0 | 2 | 6 | 16 | 150 |
| Total: | 327 | 1944 | 160 | 2431 | 522 | 2056 | 426 | 3006 | 5437 | 157 | 28 | 341 | 526 | 147 | 29 | 121 | 297 | 823 | 6,260 |

Note: U-Turns are included in Totals.



Transportation Services - Traffic Services

Turning Movement Count - Study Results

CLYDE AVE @ DOHENY ST

Survey Date: Wednesday, February 27, 2019

WO No: 38266

Start Time: 07:00

Device: Miovision

Full Study Cyclist Volume

| Time Period | CLYDE AVE | | | DOHENY ST | | | Grand Total |
|--------------|------------|------------|--------------|-----------|-----------|--------------|-------------|
| | Northbound | Southbound | Street Total | Eastbound | Westbound | Street Total | |
| 07:00 07:15 | 1 | 0 | 1 | 0 | 0 | 0 | 1 |
| 07:15 07:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 07:30 07:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 07:45 08:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 08:00 08:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 08:15 08:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 08:30 08:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 08:45 09:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 09:00 09:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 09:15 09:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 09:30 09:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 09:45 10:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11:30 11:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11:45 12:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 12:00 12:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 12:15 12:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 12:30 12:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 12:45 13:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 13:00 13:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 13:15 13:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 15:00 15:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 15:15 15:30 | 0 | 1 | 1 | 0 | 0 | 0 | 1 |
| 15:30 15:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 15:45 16:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 16:00 16:15 | 0 | 1 | 1 | 0 | 0 | 0 | 1 |
| 16:15 16:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 16:30 16:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 16:45 17:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 17:00 17:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 17:15 17:30 | 0 | 1 | 1 | 0 | 0 | 0 | 1 |
| 17:30 17:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 17:45 18:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 1 | 3 | 4 | 0 | 0 | 0 | 4 |



Transportation Services - Traffic Services

Turning Movement Count - Study Results

CLYDE AVE @ DOHENY ST

Survey Date: Wednesday, February 27, 2019

WO No: 38266

Start Time: 07:00

Device: Miovision

Full Study Pedestrian Volume

CLYDE AVE

DOHENY ST

| Time Period | NB Approach (E or W Crossing) | SB Approach (E or W Crossing) | Total | EB Approach (N or S Crossing) | WB Approach (N or S Crossing) | Total | Grand Total |
|--------------------|----------------------------------|----------------------------------|-----------|----------------------------------|----------------------------------|-----------|-------------|
| 07:00 07:15 | 0 | 0 | 0 | 1 | 2 | 3 | 3 |
| 07:15 07:30 | 0 | 0 | 0 | 1 | 3 | 4 | 4 |
| 07:30 07:45 | 0 | 0 | 0 | 0 | 2 | 2 | 2 |
| 07:45 08:00 | 0 | 0 | 0 | 0 | 2 | 2 | 2 |
| 08:00 08:15 | 0 | 0 | 0 | 0 | 1 | 1 | 1 |
| 08:15 08:30 | 2 | 0 | 2 | 0 | 1 | 1 | 3 |
| 08:30 08:45 | 2 | 2 | 4 | 2 | 4 | 6 | 10 |
| 08:45 09:00 | 0 | 0 | 0 | 0 | 3 | 3 | 3 |
| 09:00 09:15 | 0 | 0 | 0 | 2 | 2 | 4 | 4 |
| 09:15 09:30 | 0 | 1 | 1 | 0 | 1 | 1 | 2 |
| 09:30 09:45 | 0 | 1 | 1 | 0 | 2 | 2 | 3 |
| 09:45 10:00 | 0 | 0 | 0 | 1 | 1 | 2 | 2 |
| 11:30 11:45 | 0 | 0 | 0 | 0 | 3 | 3 | 3 |
| 11:45 12:00 | 0 | 1 | 1 | 1 | 0 | 1 | 2 |
| 12:00 12:15 | 0 | 0 | 0 | 0 | 1 | 1 | 1 |
| 12:15 12:30 | 0 | 2 | 2 | 1 | 2 | 3 | 5 |
| 12:30 12:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 12:45 13:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 13:00 13:15 | 0 | 0 | 0 | 2 | 1 | 3 | 3 |
| 13:15 13:30 | 1 | 1 | 2 | 2 | 3 | 5 | 7 |
| 15:00 15:15 | 2 | 1 | 3 | 2 | 3 | 5 | 8 |
| 15:15 15:30 | 1 | 1 | 2 | 3 | 4 | 7 | 9 |
| 15:30 15:45 | 2 | 0 | 2 | 0 | 2 | 2 | 4 |
| 15:45 16:00 | 1 | 0 | 1 | 1 | 1 | 2 | 3 |
| 16:00 16:15 | 0 | 1 | 1 | 1 | 4 | 5 | 6 |
| 16:15 16:30 | 0 | 0 | 0 | 1 | 1 | 2 | 2 |
| 16:30 16:45 | 0 | 1 | 1 | 2 | 4 | 6 | 7 |
| 16:45 17:00 | 0 | 0 | 0 | 1 | 4 | 5 | 5 |
| 17:00 17:15 | 0 | 1 | 1 | 0 | 2 | 2 | 3 |
| 17:15 17:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 17:30 17:45 | 0 | 1 | 1 | 0 | 0 | 0 | 1 |
| 17:45 18:00 | 0 | 0 | 0 | 0 | 1 | 1 | 1 |
| Total | 11 | 14 | 25 | 24 | 60 | 84 | 109 |



Transportation Services - Traffic Services

Turning Movement Count - Study Results

CLYDE AVE @ DOHENY ST

Survey Date: Wednesday, February 27, 2019

WO No: 38266

Start Time: 07:00

Device: Miovision

Full Study Heavy Vehicles

CLYDE AVE

DOHENY ST

Northbound

Southbound

Eastbound

Westbound

| Time Period | Northbound | | | N TOT | Southbound | | | S TOT | STR TOT | Eastbound | | | E TOT | Westbound | | | W TOT | STR TOT | Grand Total |
|-------------|------------|-----|----|----------|------------|-----|----|----------|------------|-----------|----|----|----------|-----------|----|----|----------|------------|----------------|
| | LT | ST | RT | | LT | ST | RT | | | LT | ST | RT | | LT | ST | RT | | | |
| 07:00 07:15 | 0 | 3 | 0 | 5 | 0 | 1 | 1 | 7 | 12 | 2 | 0 | 1 | 4 | 0 | 0 | 0 | 0 | 4 | 8 |
| 07:15 07:30 | 0 | 4 | 0 | 4 | 0 | 0 | 0 | 4 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 |
| 07:30 07:45 | 0 | 1 | 0 | 5 | 0 | 4 | 0 | 5 | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| 07:45 08:00 | 0 | 6 | 0 | 7 | 1 | 1 | 1 | 10 | 17 | 1 | 0 | 0 | 2 | 0 | 0 | 0 | 1 | 3 | 10 |
| 08:00 08:15 | 1 | 10 | 0 | 13 | 0 | 2 | 0 | 12 | 25 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 13 |
| 08:15 08:30 | 1 | 4 | 0 | 10 | 1 | 5 | 1 | 11 | 21 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 1 | 3 | 12 |
| 08:30 08:45 | 1 | 10 | 0 | 20 | 0 | 7 | 1 | 18 | 38 | 0 | 0 | 2 | 4 | 0 | 0 | 0 | 0 | 4 | 21 |
| 08:45 09:00 | 1 | 3 | 1 | 11 | 0 | 4 | 0 | 8 | 19 | 1 | 0 | 1 | 3 | 1 | 0 | 0 | 2 | 5 | 12 |
| 09:00 09:15 | 0 | 5 | 0 | 12 | 2 | 7 | 1 | 16 | 28 | 0 | 1 | 0 | 2 | 0 | 0 | 1 | 4 | 6 | 17 |
| 09:15 09:30 | 1 | 7 | 0 | 14 | 0 | 5 | 0 | 13 | 27 | 1 | 0 | 0 | 2 | 1 | 0 | 0 | 1 | 3 | 15 |
| 09:30 09:45 | 2 | 7 | 0 | 19 | 0 | 9 | 3 | 19 | 38 | 0 | 0 | 0 | 5 | 1 | 0 | 0 | 1 | 6 | 22 |
| 09:45 10:00 | 0 | 6 | 1 | 12 | 0 | 5 | 0 | 11 | 23 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 12 |
| 11:30 11:45 | 1 | 5 | 1 | 14 | 1 | 7 | 0 | 13 | 27 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 2 | 3 | 15 |
| 11:45 12:00 | 0 | 3 | 0 | 10 | 1 | 7 | 0 | 11 | 21 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 11 |
| 12:00 12:15 | 0 | 6 | 0 | 8 | 0 | 2 | 0 | 9 | 17 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 9 |
| 12:15 12:30 | 0 | 4 | 0 | 10 | 0 | 5 | 0 | 11 | 21 | 2 | 0 | 0 | 2 | 1 | 0 | 0 | 1 | 3 | 12 |
| 12:30 12:45 | 0 | 7 | 1 | 13 | 0 | 5 | 0 | 12 | 25 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 13 |
| 12:45 13:00 | 1 | 8 | 0 | 17 | 0 | 7 | 0 | 16 | 33 | 0 | 0 | 0 | 1 | 1 | 0 | 1 | 2 | 3 | 18 |
| 13:00 13:15 | 0 | 10 | 0 | 18 | 0 | 8 | 2 | 21 | 39 | 0 | 0 | 0 | 2 | 0 | 0 | 1 | 1 | 3 | 21 |
| 13:15 13:30 | 0 | 9 | 0 | 15 | 0 | 5 | 0 | 14 | 29 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 15 |
| 15:00 15:15 | 0 | 5 | 0 | 10 | 0 | 5 | 1 | 11 | 21 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 11 |
| 15:15 15:30 | 0 | 5 | 1 | 12 | 0 | 6 | 1 | 12 | 24 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 2 | 13 |
| 15:30 15:45 | 1 | 4 | 0 | 11 | 1 | 6 | 1 | 12 | 23 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 1 | 3 | 13 |
| 15:45 16:00 | 0 | 4 | 0 | 8 | 0 | 3 | 0 | 8 | 16 | 1 | 0 | 1 | 3 | 0 | 1 | 0 | 1 | 4 | 10 |
| 16:00 16:15 | 0 | 4 | 0 | 10 | 0 | 5 | 0 | 9 | 19 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 10 |
| 16:15 16:30 | 0 | 4 | 0 | 5 | 0 | 1 | 0 | 5 | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| 16:30 16:45 | 0 | 3 | 0 | 14 | 0 | 10 | 0 | 13 | 27 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 14 |
| 16:45 17:00 | 0 | 4 | 0 | 7 | 0 | 3 | 0 | 7 | 14 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 |
| 17:00 17:15 | 0 | 3 | 0 | 6 | 0 | 3 | 0 | 6 | 12 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 |
| 17:15 17:30 | 0 | 4 | 0 | 6 | 0 | 2 | 0 | 6 | 12 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 |
| 17:30 17:45 | 0 | 1 | 0 | 3 | 0 | 2 | 0 | 3 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| 17:45 18:00 | 0 | 2 | 0 | 6 | 0 | 4 | 0 | 6 | 12 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 |
| Total: None | 10 | 161 | 5 | 335 | 7 | 146 | 13 | 339 | 674 | 8 | 1 | 8 | 41 | 5 | 1 | 4 | 23 | 64 | 369 |



Transportation Services - Traffic Services

Turning Movement Count - Study Results

CLYDE AVE @ DOHENY ST

Survey Date: Wednesday, February 27, 2019

WO No: 38266

Start Time: 07:00

Device: Miovision

Full Study 15 Minute U-Turn Total

CLYDE AVE

DOHENY ST

| Time Period | | Northbound U-Turn Total | Southbound U-Turn Total | Eastbound U-Turn Total | Westbound U-Turn Total | Total |
|-------------|-------|----------------------------|----------------------------|---------------------------|---------------------------|-------|
| 07:00 | 07:15 | 0 | 0 | 0 | 0 | 0 |
| 07:15 | 07:30 | 0 | 0 | 0 | 0 | 0 |
| 07:30 | 07:45 | 0 | 0 | 0 | 0 | 0 |
| 07:45 | 08:00 | 0 | 0 | 0 | 0 | 0 |
| 08:00 | 08:15 | 0 | 0 | 0 | 0 | 0 |
| 08:15 | 08:30 | 0 | 0 | 0 | 0 | 0 |
| 08:30 | 08:45 | 0 | 0 | 0 | 0 | 0 |
| 08:45 | 09:00 | 0 | 0 | 0 | 0 | 0 |
| 09:00 | 09:15 | 0 | 0 | 0 | 0 | 0 |
| 09:15 | 09:30 | 0 | 0 | 0 | 0 | 0 |
| 09:30 | 09:45 | 0 | 0 | 0 | 0 | 0 |
| 09:45 | 10:00 | 0 | 0 | 0 | 0 | 0 |
| 11:30 | 11:45 | 0 | 0 | 0 | 0 | 0 |
| 11:45 | 12:00 | 0 | 0 | 0 | 0 | 0 |
| 12:00 | 12:15 | 0 | 0 | 0 | 0 | 0 |
| 12:15 | 12:30 | 0 | 0 | 0 | 0 | 0 |
| 12:30 | 12:45 | 0 | 1 | 0 | 0 | 1 |
| 12:45 | 13:00 | 0 | 0 | 0 | 0 | 0 |
| 13:00 | 13:15 | 0 | 0 | 0 | 0 | 0 |
| 13:15 | 13:30 | 0 | 0 | 0 | 0 | 0 |
| 15:00 | 15:15 | 0 | 0 | 0 | 0 | 0 |
| 15:15 | 15:30 | 0 | 0 | 0 | 0 | 0 |
| 15:30 | 15:45 | 0 | 0 | 0 | 0 | 0 |
| 15:45 | 16:00 | 0 | 0 | 0 | 0 | 0 |
| 16:00 | 16:15 | 0 | 0 | 0 | 0 | 0 |
| 16:15 | 16:30 | 0 | 1 | 0 | 0 | 1 |
| 16:30 | 16:45 | 0 | 0 | 0 | 0 | 0 |
| 16:45 | 17:00 | 0 | 0 | 0 | 0 | 0 |
| 17:00 | 17:15 | 0 | 0 | 0 | 0 | 0 |
| 17:15 | 17:30 | 0 | 0 | 0 | 0 | 0 |
| 17:30 | 17:45 | 0 | 0 | 0 | 0 | 0 |
| 17:45 | 18:00 | 0 | 0 | 0 | 0 | 0 |
| Total | | 0 | 2 | 0 | 0 | 2 |

Turning Movement Count - Study Results

CLYDE AVE @ LAPERRIERE AVE

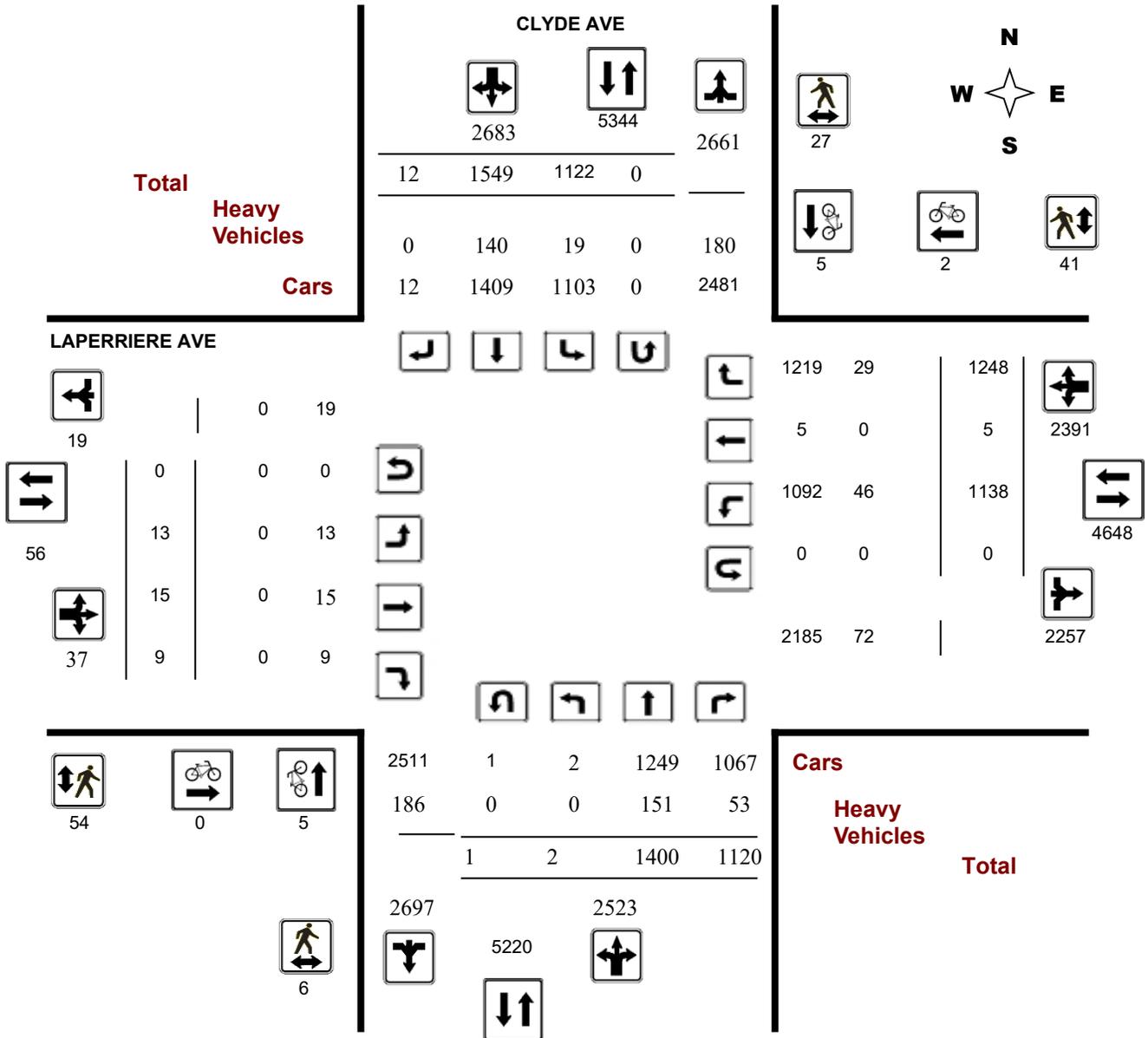
Survey Date: Wednesday, February 27, 2019

WO No: 38401

Start Time: 07:00

Device: Miovision

Full Study Diagram



Turning Movement Count - Study Results

CLYDE AVE @ LAPERRIERE AVE

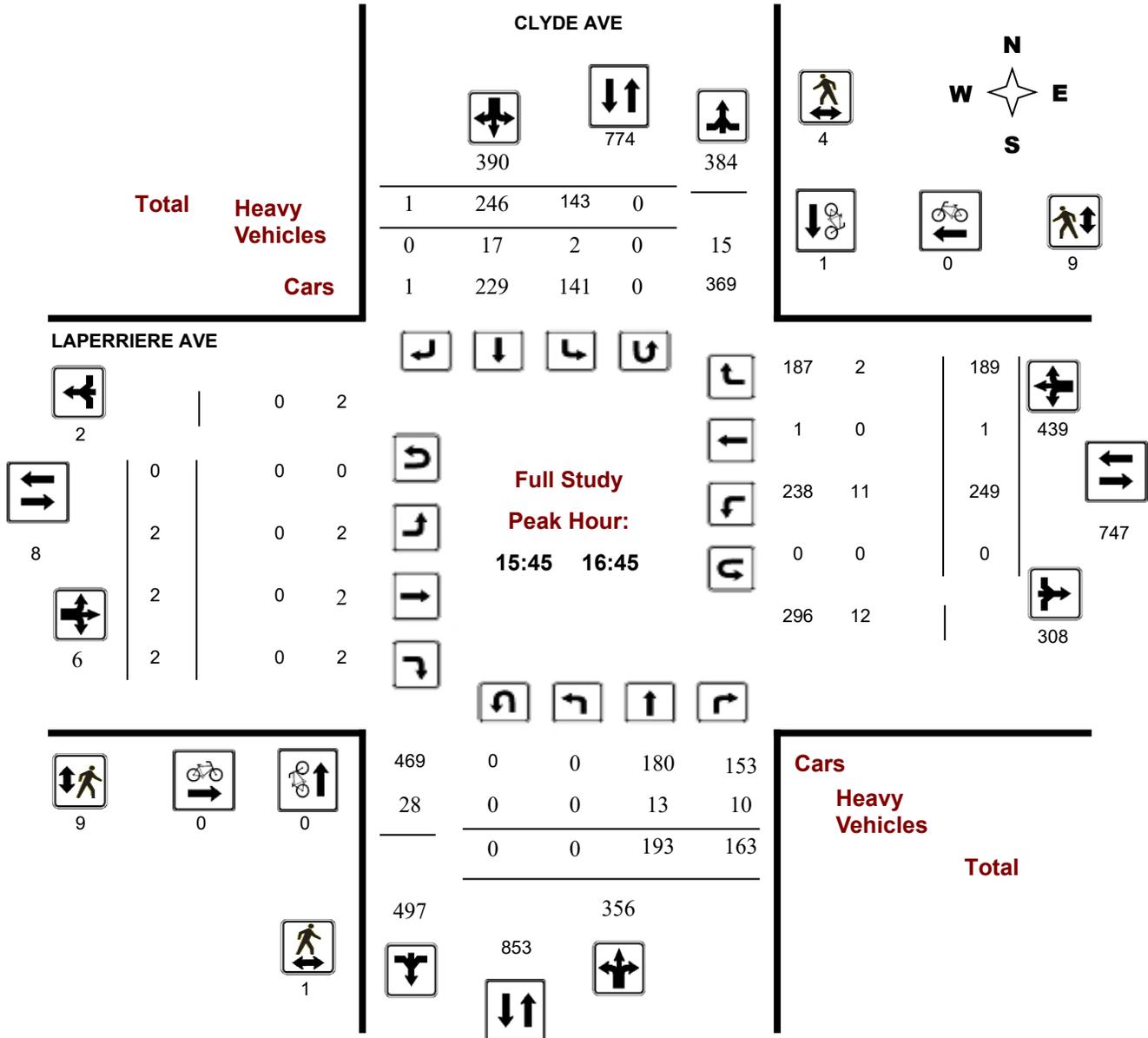
Survey Date: Wednesday, February 27, 2019

WO No: 38401

Start Time: 07:00

Device: Miovision

Full Study Peak Hour Diagram



Turning Movement Count - Peak Hour Diagram

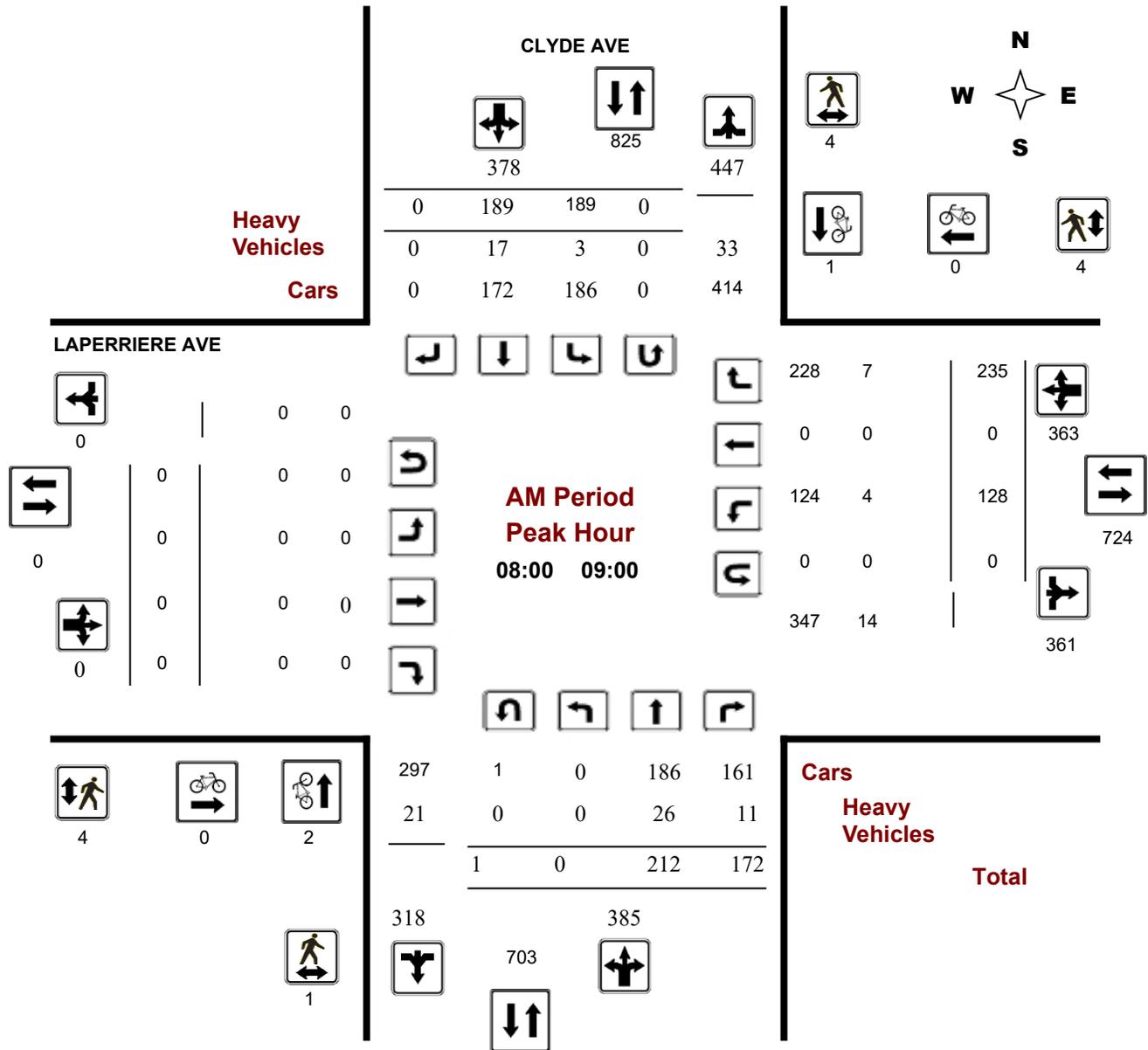
CLYDE AVE @ LAPERRIERE AVE

Survey Date: Wednesday, February 27, 2019

Start Time: 07:00

WO No: 38401

Device: Miovision



Turning Movement Count - Peak Hour Diagram

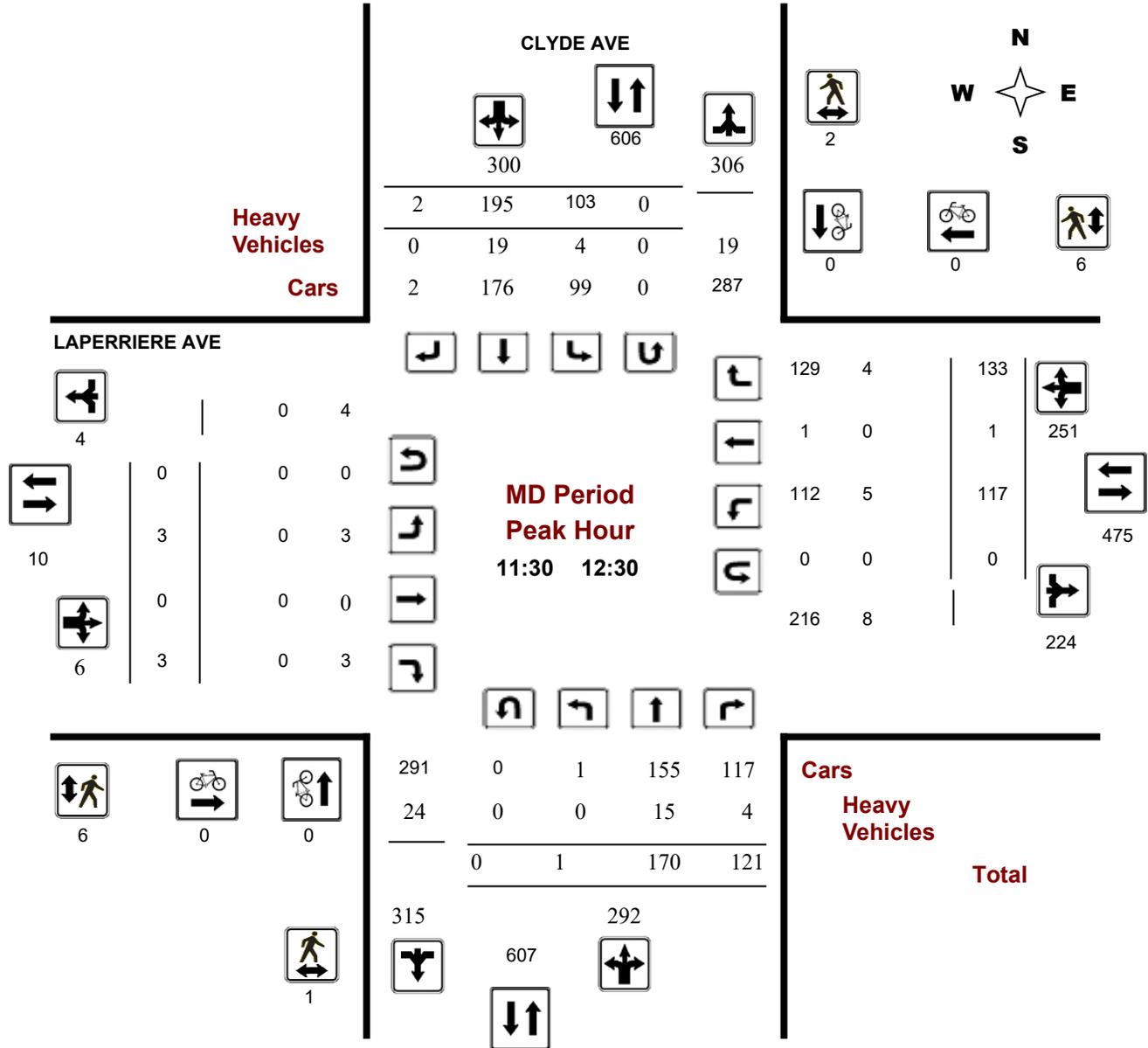
CLYDE AVE @ LAPERRIERE AVE

Survey Date: Wednesday, February 27, 2019

Start Time: 07:00

WO No: 38401

Device: Miovision



Turning Movement Count - Peak Hour Diagram

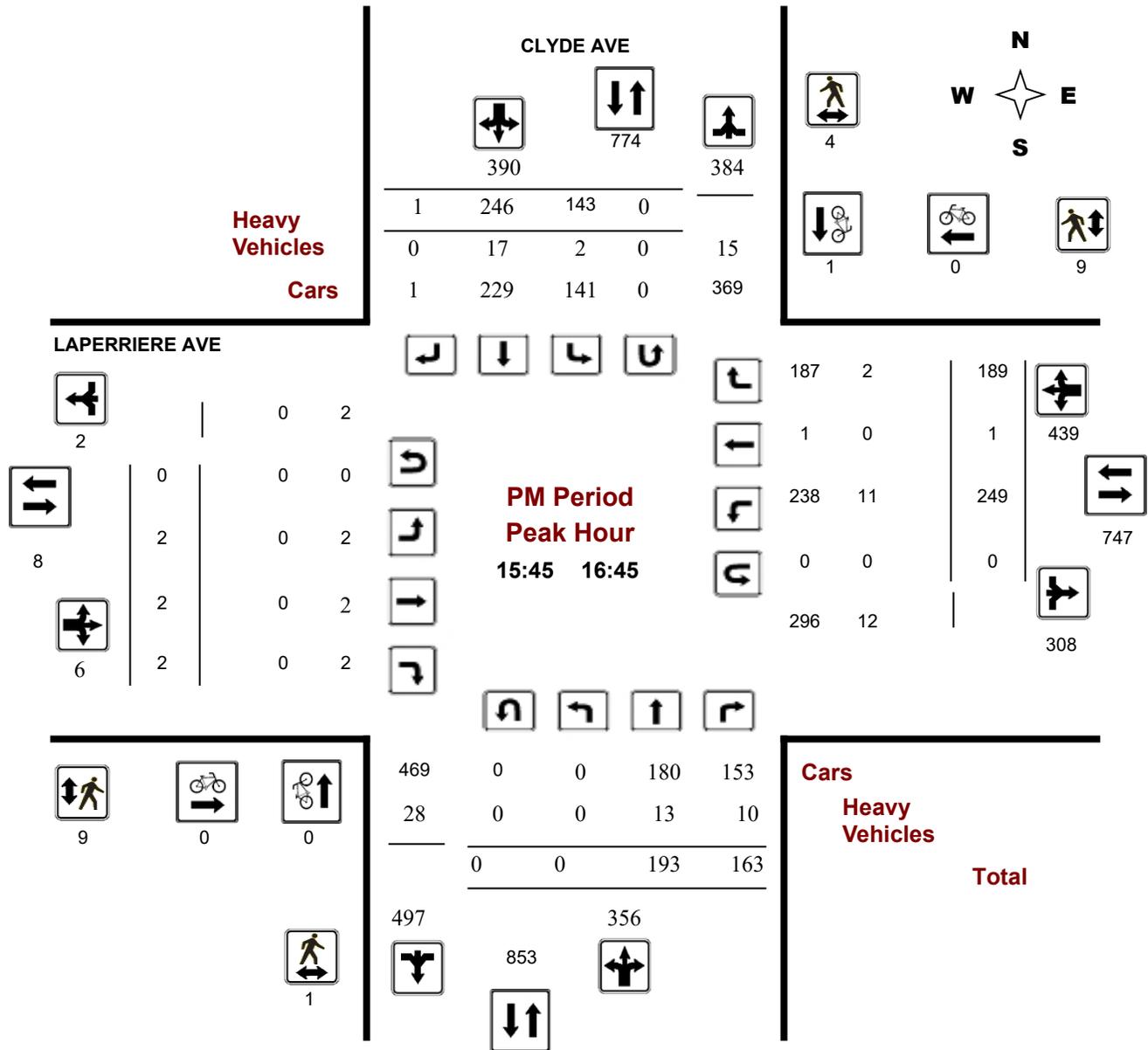
CLYDE AVE @ LAPERRIERE AVE

Survey Date: Wednesday, February 27, 2019

Start Time: 07:00

WO No: 38401

Device: Miovision





Transportation Services - Traffic Services

Turning Movement Count - Study Results

CLYDE AVE @ LAPERRIERE AVE

Survey Date: Wednesday, February 27, 2019

WO No: 38401

Start Time: 07:00

Device: Miovision

Full Study Summary (8 HR Standard)

Survey Date: Wednesday, February 27, 2019

Total Observed U-Turns
 Northbound: 1 Southbound: 0
 Eastbound: 0 Westbound: 0

AADT Factor
 1.00

CLYDE AVE

LAPERRIERE AVE

| Period | Northbound | | | | | Southbound | | | | | Eastbound | | | | | Westbound | | | | | STR TOT | Grand Total |
|------------------|------------|------|------|--------|------|------------|----|--------|---------|----|-----------|----|--------|------|----|-----------|--------|------|------|--|---------|-------------|
| | LT | ST | RT | NB TOT | LT | ST | RT | SB TOT | STR TOT | LT | ST | RT | EB TOT | LT | ST | RT | WB TOT | | | | | |
| 07:00 08:00 | 0 | 122 | 169 | 291 | 150 | 184 | 5 | 339 | 630 | 0 | 1 | 1 | 2 | 80 | 0 | 98 | 178 | 180 | 810 | | | |
| 08:00 09:00 | 0 | 212 | 172 | 384 | 189 | 189 | 0 | 378 | 762 | 0 | 0 | 0 | 0 | 128 | 0 | 235 | 363 | 363 | 1125 | | | |
| 09:00 10:00 | 0 | 172 | 142 | 314 | 134 | 178 | 1 | 313 | 627 | 1 | 6 | 0 | 7 | 103 | 0 | 128 | 231 | 238 | 865 | | | |
| 11:30 12:30 | 1 | 170 | 121 | 292 | 103 | 195 | 2 | 300 | 592 | 3 | 0 | 3 | 6 | 117 | 1 | 133 | 251 | 257 | 849 | | | |
| 12:30 13:30 | 1 | 167 | 115 | 283 | 118 | 173 | 3 | 294 | 577 | 0 | 1 | 3 | 4 | 110 | 2 | 143 | 255 | 259 | 836 | | | |
| 15:00 16:00 | 0 | 191 | 139 | 330 | 157 | 208 | 0 | 365 | 695 | 0 | 2 | 0 | 2 | 171 | 0 | 169 | 340 | 342 | 1037 | | | |
| 16:00 17:00 | 0 | 195 | 152 | 347 | 149 | 236 | 1 | 386 | 733 | 2 | 2 | 2 | 6 | 252 | 1 | 181 | 434 | 440 | 1173 | | | |
| 17:00 18:00 | 0 | 171 | 110 | 281 | 122 | 186 | 0 | 308 | 589 | 7 | 3 | 0 | 10 | 177 | 1 | 161 | 339 | 349 | 938 | | | |
| Sub Total | 2 | 1400 | 1120 | 2522 | 1122 | 1549 | 12 | 2683 | 5205 | 13 | 15 | 9 | 37 | 1138 | 5 | 1248 | 2391 | 2428 | 7633 | | | |
| U Turns | | | | 1 | | | | 0 | 1 | | | | 0 | | | | 0 | 0 | 1 | | | |
| Total | 2 | 1400 | 1120 | 2523 | 1122 | 1549 | 12 | 2683 | 5206 | 13 | 15 | 9 | 37 | 1138 | 5 | 1248 | 2391 | 2428 | 7634 | | | |

EQ 12Hr 3 1946 1557 3507 1560 2153 17 3729 7236 18 21 13 51 1582 7 1735 3323 3375 10611

Note: These values are calculated by multiplying the totals by the appropriate expansion factor.

1.39

AVG 12Hr 3 1946 1557 3507 1560 2821 22 3729 7236 18 21 13 51 1582 7 1735 3323 3375 10611

Note: These volumes are calculated by multiplying the Equivalent 12 hr. totals by the AADT factor.

1.00

AVG 24Hr 4 2549 2040 4594 2044 3696 29 4885 9479 24 28 17 67 2072 9 2273 4353 4421 13900

Note: These volumes are calculated by multiplying the Average Daily 12 hr. totals by 12 to 24 expansion factor.

1.31

Note: U-Turns provided for approach totals. Refer to 'U-Turn' Report for specific breakdown.



Transportation Services - Traffic Services

Turning Movement Count - Study Results

CLYDE AVE @ LAPERRIERE AVE

Survey Date: Wednesday, February 27, 2019

WO No: 38401

Start Time: 07:00

Device: Miovision

Full Study 15 Minute Increments

CLYDE AVE

LAPERRIERE AVE

Northbound

Southbound

Eastbound

Westbound

| Time Period | LT | ST | RT | N TOT | LT | ST | RT | S TOT | STR TOT | LT | ST | RT | E TOT | LT | ST | RT | W TOT | STR TOT | Grand Total |
|---------------|----------|-------------|-------------|-------------|-------------|-------------|-----------|-------------|-------------|-----------|-----------|----------|-----------|-------------|----------|-------------|-------------|-------------|----------------|
| 07:00-07:15 | 0 | 21 | 27 | 48 | 30 | 44 | 0 | 74 | 122 | 0 | 0 | 0 | 0 | 18 | 0 | 19 | 37 | 37 | 159 |
| 07:15-07:30 | 0 | 26 | 45 | 71 | 30 | 44 | 3 | 77 | 148 | 0 | 0 | 0 | 0 | 23 | 0 | 15 | 38 | 38 | 186 |
| 07:30-07:45 | 0 | 42 | 46 | 88 | 45 | 43 | 2 | 90 | 178 | 0 | 0 | 1 | 1 | 23 | 0 | 24 | 47 | 48 | 226 |
| 07:45-08:00 | 0 | 33 | 51 | 84 | 45 | 53 | 0 | 98 | 182 | 0 | 1 | 0 | 1 | 16 | 0 | 40 | 56 | 57 | 239 |
| 08:00-08:15 | 0 | 52 | 42 | 94 | 61 | 30 | 0 | 91 | 185 | 0 | 0 | 0 | 0 | 32 | 0 | 56 | 88 | 88 | 273 |
| 08:15-08:30 | 0 | 45 | 38 | 83 | 47 | 45 | 0 | 92 | 175 | 0 | 0 | 0 | 0 | 42 | 0 | 58 | 100 | 100 | 275 |
| 08:30-08:45 | 0 | 55 | 45 | 101 | 42 | 60 | 0 | 102 | 203 | 0 | 0 | 0 | 0 | 29 | 0 | 64 | 93 | 93 | 296 |
| 08:45-09:00 | 0 | 60 | 47 | 107 | 39 | 54 | 0 | 93 | 200 | 0 | 0 | 0 | 0 | 25 | 0 | 57 | 82 | 82 | 282 |
| 09:00-09:15 | 0 | 46 | 38 | 84 | 49 | 51 | 0 | 100 | 184 | 0 | 2 | 0 | 2 | 20 | 0 | 36 | 56 | 58 | 242 |
| 09:15-09:30 | 0 | 41 | 41 | 82 | 35 | 40 | 0 | 75 | 157 | 1 | 1 | 0 | 2 | 38 | 0 | 37 | 75 | 77 | 234 |
| 09:30-09:45 | 0 | 47 | 28 | 75 | 34 | 45 | 1 | 80 | 155 | 0 | 1 | 0 | 1 | 23 | 0 | 26 | 49 | 50 | 205 |
| 09:45-10:00 | 0 | 38 | 35 | 73 | 16 | 42 | 0 | 58 | 131 | 0 | 2 | 0 | 2 | 22 | 0 | 29 | 51 | 53 | 184 |
| 11:30-11:45 | 0 | 42 | 34 | 76 | 24 | 47 | 0 | 71 | 147 | 0 | 0 | 1 | 1 | 38 | 0 | 26 | 64 | 65 | 212 |
| 11:45-12:00 | 1 | 37 | 32 | 70 | 22 | 64 | 0 | 86 | 156 | 1 | 0 | 0 | 1 | 19 | 0 | 41 | 60 | 61 | 217 |
| 12:00-12:15 | 0 | 55 | 32 | 87 | 33 | 41 | 2 | 76 | 163 | 2 | 0 | 1 | 3 | 29 | 1 | 35 | 65 | 68 | 231 |
| 12:15-12:30 | 0 | 36 | 23 | 59 | 24 | 43 | 0 | 67 | 126 | 0 | 0 | 1 | 1 | 31 | 0 | 31 | 62 | 63 | 189 |
| 12:30-12:45 | 0 | 36 | 35 | 71 | 31 | 37 | 1 | 69 | 140 | 0 | 0 | 0 | 0 | 22 | 1 | 30 | 53 | 53 | 193 |
| 12:45-13:00 | 1 | 39 | 26 | 66 | 21 | 43 | 0 | 64 | 130 | 0 | 0 | 2 | 2 | 27 | 1 | 34 | 62 | 64 | 194 |
| 13:00-13:15 | 0 | 52 | 26 | 78 | 34 | 51 | 1 | 86 | 164 | 0 | 1 | 1 | 2 | 31 | 0 | 39 | 70 | 72 | 236 |
| 13:15-13:30 | 0 | 40 | 28 | 68 | 32 | 42 | 1 | 75 | 143 | 0 | 0 | 0 | 0 | 30 | 0 | 40 | 70 | 70 | 213 |
| 15:00-15:15 | 0 | 44 | 26 | 70 | 36 | 47 | 0 | 83 | 153 | 0 | 0 | 0 | 0 | 36 | 0 | 44 | 80 | 80 | 233 |
| 15:15-15:30 | 0 | 47 | 42 | 89 | 44 | 55 | 0 | 99 | 188 | 0 | 2 | 0 | 2 | 40 | 0 | 46 | 86 | 88 | 276 |
| 15:30-15:45 | 0 | 49 | 24 | 73 | 40 | 49 | 0 | 89 | 162 | 0 | 0 | 0 | 0 | 47 | 0 | 33 | 80 | 80 | 242 |
| 15:45-16:00 | 0 | 51 | 47 | 98 | 37 | 57 | 0 | 94 | 192 | 0 | 0 | 0 | 0 | 48 | 0 | 46 | 94 | 94 | 286 |
| 16:00-16:15 | 0 | 48 | 43 | 91 | 35 | 73 | 0 | 108 | 199 | 2 | 1 | 0 | 3 | 72 | 0 | 48 | 120 | 123 | 322 |
| 16:15-16:30 | 0 | 41 | 37 | 78 | 37 | 56 | 0 | 93 | 171 | 0 | 1 | 0 | 1 | 64 | 0 | 44 | 108 | 109 | 280 |
| 16:30-16:45 | 0 | 53 | 36 | 89 | 34 | 60 | 1 | 95 | 184 | 0 | 0 | 2 | 2 | 65 | 1 | 51 | 117 | 119 | 303 |
| 16:45-17:00 | 0 | 53 | 36 | 89 | 43 | 47 | 0 | 90 | 179 | 0 | 0 | 0 | 0 | 51 | 0 | 38 | 89 | 89 | 268 |
| 17:00-17:15 | 0 | 48 | 39 | 87 | 37 | 55 | 0 | 92 | 179 | 3 | 3 | 0 | 6 | 58 | 1 | 46 | 105 | 111 | 290 |
| 17:15-17:30 | 0 | 44 | 28 | 72 | 32 | 51 | 0 | 83 | 155 | 2 | 0 | 0 | 2 | 41 | 0 | 40 | 81 | 83 | 238 |
| 17:30-17:45 | 0 | 49 | 30 | 79 | 26 | 44 | 0 | 70 | 149 | 2 | 0 | 0 | 2 | 39 | 0 | 36 | 75 | 77 | 226 |
| 17:45-18:00 | 0 | 30 | 13 | 43 | 27 | 36 | 0 | 63 | 106 | 0 | 0 | 0 | 0 | 39 | 0 | 39 | 78 | 78 | 184 |
| Total: | 2 | 1400 | 1120 | 2523 | 1122 | 1549 | 12 | 2683 | 5206 | 13 | 15 | 9 | 37 | 1138 | 5 | 1248 | 2391 | 2428 | 7,634 |

Note: U-Turns are included in Totals.



Transportation Services - Traffic Services

Turning Movement Count - Study Results

CLYDE AVE @ LAPERRIERE AVE

Survey Date: Wednesday, February 27, 2019

WO No: 38401

Start Time: 07:00

Device: Miovision

Full Study Cyclist Volume

| Time Period | CLYDE AVE | | | LAPERRIERE AVE | | | Grand Total |
|--------------|------------|------------|--------------|----------------|-----------|--------------|-------------|
| | Northbound | Southbound | Street Total | Eastbound | Westbound | Street Total | |
| 07:00 07:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 07:15 07:30 | 2 | 0 | 2 | 0 | 0 | 0 | 2 |
| 07:30 07:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 07:45 08:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 08:00 08:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 08:15 08:30 | 1 | 0 | 1 | 0 | 0 | 0 | 1 |
| 08:30 08:45 | 1 | 1 | 2 | 0 | 0 | 0 | 2 |
| 08:45 09:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 09:00 09:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 09:15 09:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 09:30 09:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 09:45 10:00 | 1 | 0 | 1 | 0 | 0 | 0 | 1 |
| 11:30 11:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11:45 12:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 12:00 12:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 12:15 12:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 12:30 12:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 12:45 13:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 13:00 13:15 | 0 | 1 | 1 | 0 | 0 | 0 | 1 |
| 13:15 13:30 | 0 | 1 | 1 | 0 | 0 | 0 | 1 |
| 15:00 15:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 15:15 15:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 15:30 15:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 15:45 16:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 16:00 16:15 | 0 | 1 | 1 | 0 | 0 | 0 | 1 |
| 16:15 16:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 16:30 16:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 16:45 17:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 17:00 17:15 | 0 | 0 | 0 | 0 | 1 | 1 | 1 |
| 17:15 17:30 | 0 | 1 | 1 | 0 | 1 | 1 | 2 |
| 17:30 17:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 17:45 18:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 5 | 5 | 10 | 0 | 2 | 2 | 12 |



Transportation Services - Traffic Services

Turning Movement Count - Study Results

CLYDE AVE @ LAPERRIERE AVE

Survey Date: Wednesday, February 27, 2019

WO No: 38401

Start Time: 07:00

Device: Miovision

Full Study Pedestrian Volume

CLYDE AVE

LAPERRIERE AVE

| Time Period | NB Approach (E or W Crossing) | SB Approach (E or W Crossing) | Total | EB Approach (N or S Crossing) | WB Approach (N or S Crossing) | Total | Grand Total |
|--------------------|----------------------------------|----------------------------------|-----------|----------------------------------|----------------------------------|-----------|-------------|
| 07:00 07:15 | 0 | 0 | 0 | 1 | 0 | 1 | 1 |
| 07:15 07:30 | 1 | 1 | 2 | 2 | 1 | 3 | 5 |
| 07:30 07:45 | 0 | 2 | 2 | 3 | 1 | 4 | 6 |
| 07:45 08:00 | 0 | 1 | 1 | 1 | 1 | 2 | 3 |
| 08:00 08:15 | 0 | 1 | 1 | 1 | 0 | 1 | 2 |
| 08:15 08:30 | 0 | 2 | 2 | 1 | 1 | 2 | 4 |
| 08:30 08:45 | 1 | 0 | 1 | 0 | 2 | 2 | 3 |
| 08:45 09:00 | 0 | 1 | 1 | 2 | 1 | 3 | 4 |
| 09:00 09:15 | 1 | 1 | 2 | 2 | 2 | 4 | 6 |
| 09:15 09:30 | 0 | 0 | 0 | 1 | 1 | 2 | 2 |
| 09:30 09:45 | 0 | 1 | 1 | 0 | 0 | 0 | 1 |
| 09:45 10:00 | 0 | 1 | 1 | 0 | 0 | 0 | 1 |
| 11:30 11:45 | 0 | 1 | 1 | 5 | 1 | 6 | 7 |
| 11:45 12:00 | 0 | 0 | 0 | 0 | 2 | 2 | 2 |
| 12:00 12:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 12:15 12:30 | 1 | 1 | 2 | 1 | 3 | 4 | 6 |
| 12:30 12:45 | 0 | 1 | 1 | 17 | 1 | 18 | 19 |
| 12:45 13:00 | 0 | 0 | 0 | 1 | 0 | 1 | 1 |
| 13:00 13:15 | 0 | 0 | 0 | 0 | 4 | 4 | 4 |
| 13:15 13:30 | 0 | 1 | 1 | 3 | 1 | 4 | 5 |
| 15:00 15:15 | 0 | 0 | 0 | 0 | 1 | 1 | 1 |
| 15:15 15:30 | 0 | 0 | 0 | 0 | 1 | 1 | 1 |
| 15:30 15:45 | 0 | 0 | 0 | 1 | 0 | 1 | 1 |
| 15:45 16:00 | 0 | 1 | 1 | 3 | 2 | 5 | 6 |
| 16:00 16:15 | 0 | 1 | 1 | 2 | 2 | 4 | 5 |
| 16:15 16:30 | 0 | 1 | 1 | 0 | 2 | 2 | 3 |
| 16:30 16:45 | 1 | 1 | 2 | 4 | 3 | 7 | 9 |
| 16:45 17:00 | 0 | 1 | 1 | 0 | 1 | 1 | 2 |
| 17:00 17:15 | 1 | 5 | 6 | 3 | 7 | 10 | 16 |
| 17:15 17:30 | 0 | 1 | 1 | 0 | 0 | 0 | 1 |
| 17:30 17:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 17:45 18:00 | 0 | 1 | 1 | 0 | 0 | 0 | 1 |
| Total | 6 | 27 | 33 | 54 | 41 | 95 | 128 |



Transportation Services - Traffic Services

Turning Movement Count - Study Results

CLYDE AVE @ LAPERRIERE AVE

Survey Date: Wednesday, February 27, 2019

WO No: 38401

Start Time: 07:00

Device: Miovision

Full Study Heavy Vehicles

CLYDE AVE

LAPERRIERE AVE

Northbound

Southbound

Eastbound

Westbound

| Time Period | Northbound | | | | Southbound | | | | Eastbound | | | | Westbound | | | | Grand Total | | |
|-------------|------------|-----|----|-------|------------|-----|----|-------|-----------|----|----|----|-----------|----|----|----|-------------|-------|---------|
| | LT | ST | RT | N TOT | LT | ST | RT | S TOT | STR TOT | LT | ST | RT | E TOT | LT | ST | RT | | W TOT | STR TOT |
| 07:00 07:15 | 0 | 3 | 4 | 12 | 1 | 5 | 0 | 9 | 21 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 5 | 13 |
| 07:15 07:30 | 0 | 2 | 1 | 5 | 0 | 1 | 0 | 3 | 8 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 2 | 2 | 5 |
| 07:30 07:45 | 0 | 2 | 2 | 7 | 0 | 2 | 0 | 4 | 11 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 3 | 3 | 7 |
| 07:45 08:00 | 0 | 3 | 1 | 5 | 1 | 1 | 0 | 5 | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 6 |
| 08:00 08:15 | 0 | 9 | 5 | 16 | 1 | 1 | 0 | 12 | 28 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 8 | 8 | 18 |
| 08:15 08:30 | 0 | 5 | 1 | 11 | 0 | 3 | 0 | 9 | 20 | 0 | 0 | 0 | 0 | 2 | 0 | 1 | 4 | 4 | 12 |
| 08:30 08:45 | 0 | 7 | 2 | 19 | 2 | 10 | 0 | 21 | 40 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 6 | 6 | 23 |
| 08:45 09:00 | 0 | 5 | 3 | 12 | 0 | 3 | 0 | 11 | 23 | 0 | 0 | 0 | 0 | 1 | 0 | 3 | 7 | 7 | 15 |
| 09:00 09:15 | 0 | 3 | 1 | 9 | 1 | 4 | 0 | 11 | 20 | 0 | 0 | 0 | 0 | 1 | 0 | 3 | 6 | 6 | 13 |
| 09:15 09:30 | 0 | 5 | 3 | 15 | 1 | 6 | 0 | 13 | 28 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 6 | 6 | 17 |
| 09:30 09:45 | 0 | 11 | 1 | 19 | 0 | 7 | 0 | 18 | 37 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 19 |
| 09:45 10:00 | 0 | 7 | 0 | 15 | 0 | 5 | 0 | 13 | 28 | 0 | 0 | 0 | 0 | 3 | 0 | 1 | 4 | 4 | 16 |
| 11:30 11:45 | 0 | 3 | 2 | 17 | 0 | 7 | 0 | 10 | 27 | 0 | 0 | 0 | 0 | 5 | 0 | 0 | 7 | 7 | 17 |
| 11:45 12:00 | 0 | 1 | 1 | 8 | 0 | 6 | 0 | 9 | 17 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 3 | 3 | 10 |
| 12:00 12:15 | 0 | 7 | 0 | 10 | 1 | 3 | 0 | 12 | 22 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 2 | 12 |
| 12:15 12:30 | 0 | 4 | 1 | 8 | 3 | 3 | 0 | 11 | 19 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 5 | 5 | 12 |
| 12:30 12:45 | 0 | 7 | 4 | 18 | 0 | 4 | 0 | 12 | 30 | 0 | 0 | 0 | 0 | 3 | 0 | 1 | 8 | 8 | 19 |
| 12:45 13:00 | 0 | 8 | 4 | 22 | 0 | 7 | 0 | 16 | 38 | 0 | 0 | 0 | 0 | 3 | 0 | 1 | 8 | 8 | 23 |
| 13:00 13:15 | 0 | 9 | 1 | 21 | 0 | 7 | 0 | 19 | 40 | 0 | 0 | 0 | 0 | 4 | 0 | 3 | 8 | 8 | 24 |
| 13:15 13:30 | 0 | 10 | 0 | 17 | 1 | 5 | 0 | 18 | 35 | 0 | 0 | 0 | 0 | 2 | 0 | 2 | 5 | 5 | 20 |
| 15:00 15:15 | 0 | 1 | 1 | 10 | 1 | 5 | 0 | 10 | 20 | 0 | 0 | 0 | 0 | 3 | 0 | 3 | 8 | 8 | 14 |
| 15:15 15:30 | 0 | 6 | 1 | 14 | 1 | 4 | 0 | 11 | 25 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 5 | 5 | 15 |
| 15:30 15:45 | 0 | 7 | 1 | 16 | 2 | 7 | 0 | 16 | 32 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 4 | 4 | 18 |
| 15:45 16:00 | 0 | 3 | 0 | 7 | 0 | 2 | 0 | 6 | 13 | 0 | 0 | 0 | 0 | 2 | 0 | 1 | 3 | 3 | 8 |
| 16:00 16:15 | 0 | 3 | 6 | 22 | 0 | 8 | 0 | 11 | 33 | 0 | 0 | 0 | 0 | 5 | 0 | 0 | 11 | 11 | 22 |
| 16:15 16:30 | 0 | 4 | 3 | 12 | 1 | 1 | 0 | 7 | 19 | 0 | 0 | 0 | 0 | 4 | 0 | 1 | 9 | 9 | 14 |
| 16:30 16:45 | 0 | 3 | 1 | 10 | 1 | 6 | 0 | 10 | 20 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 11 |
| 16:45 17:00 | 0 | 4 | 2 | 11 | 0 | 5 | 0 | 9 | 20 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 11 |
| 17:00 17:15 | 0 | 3 | 0 | 6 | 0 | 3 | 0 | 6 | 12 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 |
| 17:15 17:30 | 0 | 4 | 0 | 6 | 0 | 2 | 0 | 6 | 12 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 |
| 17:30 17:45 | 0 | 1 | 1 | 4 | 0 | 2 | 0 | 3 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 4 |
| 17:45 18:00 | 0 | 1 | 0 | 6 | 1 | 5 | 0 | 8 | 14 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 2 | 8 |
| Total: None | 0 | 151 | 53 | 390 | 19 | 140 | 0 | 339 | 729 | 0 | 0 | 0 | 0 | 46 | 0 | 29 | 147 | 147 | 438 |



Transportation Services - Traffic Services

Turning Movement Count - Study Results

CLYDE AVE @ LAPERRIERE AVE

Survey Date: Wednesday, February 27, 2019

WO No: 38401

Start Time: 07:00

Device: Miovision

Full Study 15 Minute U-Turn Total

CLYDE AVE

LAPERRIERE AVE

| Time Period | | Northbound U-Turn Total | Southbound U-Turn Total | Eastbound U-Turn Total | Westbound U-Turn Total | Total |
|-------------|-------|----------------------------|----------------------------|---------------------------|---------------------------|-------|
| 07:00 | 07:15 | 0 | 0 | 0 | 0 | 0 |
| 07:15 | 07:30 | 0 | 0 | 0 | 0 | 0 |
| 07:30 | 07:45 | 0 | 0 | 0 | 0 | 0 |
| 07:45 | 08:00 | 0 | 0 | 0 | 0 | 0 |
| 08:00 | 08:15 | 0 | 0 | 0 | 0 | 0 |
| 08:15 | 08:30 | 0 | 0 | 0 | 0 | 0 |
| 08:30 | 08:45 | 1 | 0 | 0 | 0 | 1 |
| 08:45 | 09:00 | 0 | 0 | 0 | 0 | 0 |
| 09:00 | 09:15 | 0 | 0 | 0 | 0 | 0 |
| 09:15 | 09:30 | 0 | 0 | 0 | 0 | 0 |
| 09:30 | 09:45 | 0 | 0 | 0 | 0 | 0 |
| 09:45 | 10:00 | 0 | 0 | 0 | 0 | 0 |
| 11:30 | 11:45 | 0 | 0 | 0 | 0 | 0 |
| 11:45 | 12:00 | 0 | 0 | 0 | 0 | 0 |
| 12:00 | 12:15 | 0 | 0 | 0 | 0 | 0 |
| 12:15 | 12:30 | 0 | 0 | 0 | 0 | 0 |
| 12:30 | 12:45 | 0 | 0 | 0 | 0 | 0 |
| 12:45 | 13:00 | 0 | 0 | 0 | 0 | 0 |
| 13:00 | 13:15 | 0 | 0 | 0 | 0 | 0 |
| 13:15 | 13:30 | 0 | 0 | 0 | 0 | 0 |
| 15:00 | 15:15 | 0 | 0 | 0 | 0 | 0 |
| 15:15 | 15:30 | 0 | 0 | 0 | 0 | 0 |
| 15:30 | 15:45 | 0 | 0 | 0 | 0 | 0 |
| 15:45 | 16:00 | 0 | 0 | 0 | 0 | 0 |
| 16:00 | 16:15 | 0 | 0 | 0 | 0 | 0 |
| 16:15 | 16:30 | 0 | 0 | 0 | 0 | 0 |
| 16:30 | 16:45 | 0 | 0 | 0 | 0 | 0 |
| 16:45 | 17:00 | 0 | 0 | 0 | 0 | 0 |
| 17:00 | 17:15 | 0 | 0 | 0 | 0 | 0 |
| 17:15 | 17:30 | 0 | 0 | 0 | 0 | 0 |
| 17:30 | 17:45 | 0 | 0 | 0 | 0 | 0 |
| 17:45 | 18:00 | 0 | 0 | 0 | 0 | 0 |
| Total | | 1 | 0 | 0 | 0 | 1 |

DRAFT

Appendix D:

Collision Data

Total Area

| Classification of Accident | Rear End | Turning Movement | Sideswipe | Angle | Approaching | SMV other | SMV unattended vehicle | Other | Total |
|----------------------------|-----------|------------------|-----------|----------|-------------|-----------|------------------------|----------|-----------|
| P.D. only | 21 | 18 | 23 | 5 | 0 | 2 | 0 | 1 | 70 |
| Non-fatal injury | 9 | 11 | 2 | 2 | 0 | 5 | 0 | 0 | 29 |
| Non-reportable | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 30 | 29 | 25 | 7 | 0 | 7 | 0 | 1 | 99 |
| | #1 or 30% | #2 or 29% | #3 or 25% | #4 or 7% | #7 or 0% | #4 or 7% | #7 or 0% | #6 or 1% | |

71%
29%
0%
100%

CARLING AVE/CHURCHILL AVE

| Years | Total # Collisions | 24 Hr AADT Veh Volume | Days | Collisions/MEV |
|-----------|--------------------|-----------------------|------|----------------|
| 2016-2020 | 30 | 38,416 | 1825 | 0.43 |

| Classification of Accident | Rear End | Turning Movement | Sideswipe | Angle | Approaching | SMV other | SMV unattended vehicle | Other | Total |
|----------------------------|-----------|------------------|-----------|----------|-------------|-----------|------------------------|----------|-----------|
| P.D. only | 11 | 1 | 9 | 1 | 0 | 1 | 0 | 0 | 23 |
| Non-fatal injury | 5 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 7 |
| Non-reportable | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 16 | 1 | 10 | 1 | 0 | 2 | 0 | 0 | 30 |
| | 53% | 3% | 33% | 3% | 0% | 7% | 0% | 0% | |

77%
23%
0%
100%

CARLING AVE/CLYDE AVE/COLE AVE

| Years | Total # Collisions | 24 Hr AADT Veh Volume | Days | Collisions/MEV |
|-----------|--------------------|-----------------------|------|----------------|
| 2016-2020 | 53 | 35,384 | 1825 | 0.82 |

| Classification of Accident | Rear End | Turning Movement | Sideswipe | Angle | Approaching | SMV other | SMV unattended vehicle | Other | Total |
|----------------------------|----------|------------------|-----------|----------|-------------|-----------|------------------------|----------|-----------|
| P.D. only | 6 | 13 | 11 | 2 | 0 | 1 | 0 | 1 | 34 |
| Non-fatal injury | 3 | 10 | 1 | 2 | 0 | 3 | 0 | 0 | 19 |
| Non-reportable | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 9 | 23 | 12 | 4 | 0 | 4 | 0 | 1 | 53 |
| | 17% | 43% | 23% | 8% | 0% | 8% | 0% | 2% | |

64%
36%
0%
100%

CARLING AVE EB, CHURCHILL AVE N to CLYDE AVE

| Years | Total # Collisions | 24 Hr AADT Veh Volume | Days | Collisions/MEV |
|-----------|--------------------|-----------------------|------|----------------|
| 2016-2020 | 1 | n/a | 1825 | n/a |

| Classification of Accident | Rear End | Turning Movement | Sideswipe | Angle | Approaching | SMV other | SMV unattended vehicle | Other | Total |
|----------------------------|----------|------------------|-----------|----------|-------------|-----------|------------------------|----------|----------|
| P.D. only | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 |
| Non-fatal injury | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Non-reportable | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 |
| | 0% | 0% | 100% | 0% | 0% | 0% | 0% | 0% | |

100%
0%
0%
100%

CARLING AVE WB, CHURCHILL AVE N to COLE AVE

| Years | Total # Collisions | 24 Hr AADT Veh Volume | Days | Collisions/MEV |
|-----------|--------------------|-----------------------|------|----------------|
| 2016-2020 | 8 | n/a | 1825 | n/a |

| Classification of Accident | Rear End | Turning Movement | Sideswipe | Angle | Approaching | SMV other | SMV unattended vehicle | Other | Total |
|----------------------------|----------|------------------|-----------|----------|-------------|-----------|------------------------|----------|----------|
| P.D. only | 3 | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 7 |
| Non-fatal injury | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 |
| Non-reportable | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 3 | 3 | 1 | 0 | 0 | 1 | 0 | 0 | 8 |
| | 38% | 38% | 13% | 0% | 0% | 13% | 0% | 0% | |

88%
13%
0%
100%

CLYDE AVE/DOHENY ST

| Years | Total # Collisions | 24 Hr AADT Veh Volume | Days | Collisions/MEV |
|-----------|--------------------|-----------------------|------|----------------|
| 2016-2020 | 3 | n/a | 1825 | n/a |

| Classification of Accident | Rear End | Turning Movement | Sideswipe | Angle | Approaching | SMV other | SMV unattended vehicle | Other | Total |
|----------------------------|----------|------------------|-----------|----------|-------------|-----------|------------------------|----------|----------|
| P.D. only | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 2 |
| Non-fatal injury | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| Non-reportable | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 3 |
| | 67% | 0% | 33% | 0% | 0% | 0% | 0% | 0% | |

67%
33%
0%
100%

CLYDE AVE, CARLING AVE to DOHENY ST

| Years | Total # Collisions | 24 Hr AADT Veh Volume | Days | Collisions/MEV |
|-----------|--------------------|-----------------------|------|----------------|
| 2016-2020 | 4 | n/a | 1825 | n/a |

| Classification of Accident | Rear End | Turning Movement | Sideswipe | Angle | Approaching | SMV other | SMV unattended vehicle | Other | Total |
|----------------------------|----------|------------------|-----------|----------|-------------|-----------|------------------------|----------|----------|
| P.D. only | 0 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 3 |
| Non-fatal injury | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| Non-reportable | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 0 | 2 | 0 | 2 | 0 | 0 | 0 | 0 | 4 |
| | 0% | 50% | 0% | 50% | 0% | 0% | 0% | 0% | |

75%
25%
0%
100%



Transportation Services - Traffic Services

Collision Details Report - Public Version

From: January 1, 2016 To: December 31, 2020

Location: CARLING AVE @ CHURCHILL AVE

Traffic Control: Traffic signal

Total Collisions: 30

| Date/Day/Time | Environment | Impact Type | Classification | Surface Cond'n | Veh. Dir | Vehicle Manoeuvre | Vehicle type | First Event | No. Ped |
|------------------------|-------------|------------------|------------------|----------------|----------|---------------------|---------------------------|---------------------|---------|
| 2016-Mar-04, Fri,11:19 | Clear | Rear end | P.D. only | Dry | East | Going ahead | Automobile, station wagon | Other motor vehicle | 0 |
| | | | | | East | Stopped | Automobile, station wagon | Other motor vehicle | |
| | | | | | East | Stopped | Automobile, station wagon | Other motor vehicle | |
| 2016-May-19, Thu,13:41 | Clear | Rear end | P.D. only | Dry | West | Slowing or stopping | Automobile, station wagon | Other motor vehicle | 0 |
| | | | | | West | Stopped | Automobile, station wagon | Other motor vehicle | |
| 2016-Jul-08, Fri,14:38 | Clear | Sideswipe | P.D. only | Dry | East | Turning right | Truck - open | Other motor vehicle | 0 |
| | | | | | East | Stopped | Automobile, station wagon | Other motor vehicle | |
| 2017-Feb-10, Fri,09:52 | Clear | Rear end | P.D. only | Dry | East | Slowing or stopping | Pick-up truck | Other motor vehicle | 0 |
| | | | | | East | Stopped | Automobile, station wagon | Other motor vehicle | |
| 2017-Jul-19, Wed,16:45 | Clear | Angle | P.D. only | Dry | East | Going ahead | Automobile, station wagon | Other motor vehicle | 0 |
| | | | | | North | Turning left | Automobile, station wagon | Other motor vehicle | |
| 2017-Aug-16, Wed,15:00 | Clear | Turning movement | P.D. only | Dry | East | Going ahead | Delivery van | Other motor vehicle | 0 |
| | | | | | East | Turning right | Automobile, station wagon | Other motor vehicle | |
| 2017-Sep-20, Wed,19:20 | Clear | Sideswipe | P.D. only | Dry | West | Changing lanes | Automobile, station wagon | Other motor vehicle | 0 |
| | | | | | West | Going ahead | Automobile, station wagon | Other motor vehicle | |
| 2018-Jan-16, Tue,18:18 | Clear | Rear end | P.D. only | Slush | South | Going ahead | Automobile, station wagon | Other motor vehicle | 0 |
| | | | | | South | Stopped | Automobile, station wagon | Other motor vehicle | |
| 2018-Feb-27, Tue,11:26 | Clear | Sideswipe | P.D. only | Dry | East | Changing lanes | Truck - closed | Other motor vehicle | 0 |
| | | | | | East | Going ahead | Automobile, station wagon | Other motor vehicle | |
| 2018-Mar-27, Tue,10:50 | Clear | SMV other | Non-fatal injury | Dry | South | Turning left | Automobile, station wagon | Curb | 0 |
| 2018-Jul-23, Mon,18:59 | Clear | Rear end | Non-fatal injury | Dry | East | Going ahead | Automobile, station wagon | Other motor vehicle | 0 |
| | | | | | East | Stopped | Automobile, station wagon | Other motor vehicle | |
| 2018-Aug-27, Mon,12:02 | Clear | Sideswipe | P.D. only | Dry | West | Changing lanes | Pick-up truck | Other motor vehicle | 0 |
| | | | | | West | Stopped | Automobile, station wagon | Other motor vehicle | |



Transportation Services - Traffic Services

Collision Details Report - Public Version

From: January 1, 2016 To: December 31, 2020

Location: CARLING AVE @ CHURCHILL AVE

Traffic Control: Traffic signal

Total Collisions: 30

| Date/Day/Time | Environment | Impact Type | Classification | Surface Cond'n | Veh. Dir | Vehicle Manoeuver | Vehicle type | First Event | No. Ped |
|------------------------|-------------|-------------|------------------|----------------|----------|---------------------|---------------------------|---------------------|---------|
| 2018-Sep-04, Tue,08:30 | Clear | Sideswipe | P.D. only | Dry | West | Changing lanes | Truck - dump | Other motor vehicle | 0 |
| | | | | | West | Stopped | Automobile, station wagon | Other motor vehicle | |
| 2018-Sep-05, Wed,08:46 | Clear | Rear end | P.D. only | Dry | East | Changing lanes | Automobile, station wagon | Other motor vehicle | 0 |
| | | | | | East | Stopped | Automobile, station wagon | Other motor vehicle | |
| 2018-Oct-12, Fri,10:20 | Clear | Rear end | P.D. only | Dry | East | Turning left | Truck - dump | Other motor vehicle | 0 |
| | | | | | East | Turning left | Delivery van | Other motor vehicle | |
| 2018-Dec-25, Tue,12:19 | Clear | Rear end | Non-fatal injury | Dry | South | Turning left | Automobile, station wagon | Other motor vehicle | 0 |
| | | | | | South | Turning left | Automobile, station wagon | Other motor vehicle | |
| 2019-Jan-02, Wed,22:19 | Snow | SMV other | P.D. only | Loose snow | East | Going ahead | Automobile, station wagon | Snowbank/drift | 0 |
| 2019-Jan-29, Tue,14:45 | Snow | Sideswipe | P.D. only | Slush | East | Going ahead | Automobile, station wagon | Other motor vehicle | 0 |
| | | | | | East | Going ahead | Pick-up truck | Other motor vehicle | |
| 2019-Apr-09, Tue,14:52 | Snow | Sideswipe | Non-fatal injury | Wet | East | Going ahead | Automobile, station wagon | Other motor vehicle | 0 |
| | | | | | East | Going ahead | Automobile, station wagon | Other motor vehicle | |
| 2019-May-28, Tue,17:48 | Clear | Sideswipe | P.D. only | Dry | East | Changing lanes | Automobile, station wagon | Other motor vehicle | 0 |
| | | | | | East | Going ahead | Automobile, station wagon | Other motor vehicle | |
| 2019-Jun-18, Tue,16:50 | Clear | Rear end | P.D. only | Dry | North | Slowing or stopping | Automobile, station wagon | Other motor vehicle | 0 |
| | | | | | North | Stopped | Automobile, station wagon | Other motor vehicle | |
| 2019-Sep-15, Sun,14:40 | Clear | Rear end | P.D. only | Dry | North | Slowing or stopping | Automobile, station wagon | Other motor vehicle | 0 |
| | | | | | North | Stopped | Automobile, station wagon | Other motor vehicle | |
| 2019-Sep-24, Tue,15:15 | Clear | Sideswipe | P.D. only | Dry | South | Unknown | Unknown | Other motor vehicle | 0 |
| | | | | | South | Stopped | Automobile, station wagon | Other motor vehicle | |
| 2020-Feb-03, Mon,17:19 | Clear | Rear end | P.D. only | Wet | West | Going ahead | Pick-up truck | Other motor vehicle | 0 |
| | | | | | West | Stopped | Automobile, station wagon | Other motor vehicle | |



Transportation Services - Traffic Services

Collision Details Report - Public Version

From: January 1, 2016 To: December 31, 2020

Location: CARLING AVE @ CHURCHILL AVE

Traffic Control: Traffic signal

Total Collisions: 30

| Date/Day/Time | Environment | Impact Type | Classification | Surface Cond'n | Veh. Dir | Vehicle Manoeuvre | Vehicle type | First Event | No. Ped |
|------------------------|-------------|-------------|------------------|----------------|----------|---------------------|---------------------------|---------------------|---------|
| 2020-Feb-18, Tue,08:11 | Snow | Rear end | P.D. only | Slush | East | Unknown | Unknown | Other motor vehicle | 0 |
| | | | | | East | Stopped | Automobile, station wagon | Other motor vehicle | |
| 2020-Jul-06, Mon,13:40 | Clear | Rear end | Non-fatal injury | Dry | West | Going ahead | Pick-up truck | Other motor vehicle | 0 |
| | | | | | West | Stopped | Pick-up truck | Other motor vehicle | |
| 2020-Jul-14, Tue,12:15 | Clear | Rear end | Non-fatal injury | Dry | East | Slowing or stopping | Delivery van | Other motor vehicle | 0 |
| | | | | | East | Going ahead | Passenger van | Other motor vehicle | |
| 2020-Aug-22, Sat,13:39 | Clear | Sideswipe | P.D. only | Dry | East | Changing lanes | Automobile, station wagon | Other motor vehicle | 0 |
| | | | | | East | Going ahead | Automobile, station wagon | Other motor vehicle | |
| 2020-Oct-14, Wed,09:12 | Clear | Rear end | Non-fatal injury | Dry | East | Slowing or stopping | Automobile, station wagon | Other motor vehicle | 0 |
| | | | | | East | Slowing or stopping | Automobile, station wagon | Other motor vehicle | |
| 2020-Nov-18, Wed,10:13 | Clear | Rear end | P.D. only | Dry | South | Going ahead | Pick-up truck | Other motor vehicle | 0 |
| | | | | | South | Going ahead | Automobile, station wagon | Other motor vehicle | |

Location: CARLING AVE @ CLYDE AVE/COLE AVE

Traffic Control: Traffic signal

Total Collisions: 53

| Date/Day/Time | Environment | Impact Type | Classification | Surface Cond'n | Veh. Dir | Vehicle Manoeuvre | Vehicle type | First Event | No. Ped |
|------------------------|-------------|------------------|------------------|----------------|----------|-------------------|---------------------------|-----------------------|---------|
| 2016-Feb-12, Fri,09:41 | Clear | Turning movement | Non-fatal injury | Wet | West | Turning left | Pick-up truck | Other motor vehicle | 0 |
| | | | | | East | Going ahead | Automobile, station wagon | Other motor vehicle | |
| 2016-Aug-02, Tue,10:00 | Clear | Turning movement | Non-fatal injury | Dry | East | Turning left | Passenger van | Other motor vehicle | 0 |
| | | | | | West | Going ahead | Automobile, station wagon | Other motor vehicle | |
| 2016-Oct-08, Sat,15:20 | Clear | SMV other | P.D. only | Dry | East | Turning right | Truck and trailer | Pole (utility, power) | 0 |
| 2016-Nov-28, Mon,08:41 | Clear | SMV other | Non-fatal injury | Dry | North | Turning right | Automobile, station wagon | Pedestrian | 1 |
| 2017-May-18, Thu,08:36 | Clear | Turning movement | Non-fatal injury | Dry | West | Going ahead | Automobile, station wagon | Other motor vehicle | 0 |
| | | | | | East | Turning left | Automobile, station wagon | Other motor vehicle | |



Transportation Services - Traffic Services

Collision Details Report - Public Version

From: January 1, 2016 To: December 31, 2020

Location: CARLING AVE @ CLYDE AVE/COLE AVE

Traffic Control: Traffic signal

Total Collisions: 53

| Date/Day/Time | Environment | Impact Type | Classification | Surface Cond'n | Veh. Dir | Vehicle Manoeuver | Vehicle type | First Event | No. Ped |
|------------------------|-------------|------------------|------------------|----------------|----------|---------------------|---------------------------|---------------------|---------|
| 2017-Jun-27, Tue,14:30 | Clear | Turning movement | P.D. only | Dry | West | Turning left | Unknown | Other motor vehicle | 0 |
| | | | | | East | Turning right | Automobile, station wagon | Other motor vehicle | |
| 2017-Jun-28, Wed,17:55 | Clear | Sideswipe | P.D. only | Dry | East | Unknown | Unknown | Other motor vehicle | 0 |
| | | | | | East | Stopped | Automobile, station wagon | Other motor vehicle | |
| 2017-Jul-07, Fri,15:43 | Clear | Rear end | P.D. only | Dry | South | Slowing or stopping | Motorcycle | Other motor vehicle | 0 |
| | | | | | South | Stopped | Automobile, station wagon | Other motor vehicle | |
| 2017-Jul-20, Thu,15:48 | Clear | Angle | Non-fatal injury | Dry | East | Going ahead | Passenger van | Other motor vehicle | 0 |
| | | | | | South | Turning left | Municipal transit bus | Other motor vehicle | |
| 2017-Jul-26, Wed,08:34 | Clear | Turning movement | Non-fatal injury | Dry | West | Turning left | Automobile, station wagon | Other motor vehicle | 0 |
| | | | | | East | Going ahead | Automobile, station wagon | Other motor vehicle | |
| 2017-Sep-21, Thu,16:00 | Clear | Rear end | Non-fatal injury | Dry | East | Going ahead | Automobile, station wagon | Other motor vehicle | 0 |
| | | | | | East | Stopped | Automobile, station wagon | Other motor vehicle | |
| 2017-Sep-22, Fri,15:43 | Clear | Sideswipe | P.D. only | Dry | East | Changing lanes | Truck - dump | Other motor vehicle | 0 |
| | | | | | East | Going ahead | Automobile, station wagon | Other motor vehicle | |
| 2017-Oct-14, Sat,13:15 | Clear | Turning movement | P.D. only | Dry | North | Turning right | Delivery van | Other motor vehicle | 0 |
| | | | | | South | Turning left | Automobile, station wagon | Other motor vehicle | |
| 2017-Oct-26, Thu,16:59 | Clear | Turning movement | P.D. only | Dry | North | Turning left | Automobile, station wagon | Other motor vehicle | 0 |
| | | | | | South | Going ahead | Automobile, station wagon | Other motor vehicle | |
| 2017-Nov-30, Thu,14:31 | Clear | Rear end | P.D. only | Wet | North | Turning right | Automobile, station wagon | Other motor vehicle | 0 |
| | | | | | North | Turning right | Pick-up truck | Other motor vehicle | |
| 2018-Jan-09, Tue,21:41 | Clear | Sideswipe | P.D. only | Slush | South | Unknown | Unknown | Other motor vehicle | 0 |
| | | | | | South | Stopped | Automobile, station wagon | Other motor vehicle | |
| 2018-Jan-10, Wed,21:16 | Clear | Turning movement | P.D. only | Wet | West | Going ahead | Automobile, station wagon | Other motor vehicle | 0 |
| | | | | | East | Turning left | Automobile, station wagon | Other motor vehicle | |



Transportation Services - Traffic Services

Collision Details Report - Public Version

From: January 1, 2016 To: December 31, 2020

Location: CARLING AVE @ CLYDE AVE/COLE AVE

Traffic Control: Traffic signal

Total Collisions: 53

| Date/Day/Time | Environment | Impact Type | Classification | Surface Cond'n | Veh. Dir | Vehicle Manoeuvre | Vehicle type | First Event | No. Ped |
|------------------------|---------------|------------------|------------------|----------------|----------|---------------------|---------------------------|---------------------|---------|
| 2018-Jan-13, Sat,10:12 | Drifting Snow | Sideswipe | P.D. only | Ice | West | Slowing or stopping | Automobile, station wagon | Skidding/sliding | 0 |
| | | | | | West | Turning left | Automobile, station wagon | Other motor vehicle | |
| 2018-Feb-01, Thu,07:07 | Snow | Sideswipe | P.D. only | Loose snow | West | Turning left | School bus | Other motor vehicle | 0 |
| | | | | | West | Changing lanes | Pick-up truck | Other motor vehicle | |
| 2018-Feb-06, Tue,18:13 | Clear | Turning movement | P.D. only | Wet | West | Going ahead | Automobile, station wagon | Other motor vehicle | 0 |
| | | | | | East | Turning left | Pick-up truck | Other motor vehicle | |
| 2018-Feb-09, Fri,12:58 | Clear | Rear end | P.D. only | Wet | West | Slowing or stopping | Truck - dump | Other motor vehicle | 0 |
| | | | | | West | Turning right | Automobile, station wagon | Other motor vehicle | |
| 2018-May-12, Sat,14:30 | Clear | Turning movement | P.D. only | Dry | West | Turning left | Automobile, station wagon | Other motor vehicle | 0 |
| | | | | | East | Going ahead | Automobile, station wagon | Other motor vehicle | |
| 2018-May-18, Fri,11:37 | Clear | Sideswipe | P.D. only | Dry | East | Changing lanes | Truck - closed | Other motor vehicle | 0 |
| | | | | | East | Going ahead | Automobile, station wagon | Other motor vehicle | |
| 2018-May-31, Thu,08:11 | Clear | Turning movement | Non-fatal injury | Dry | East | Turning left | Automobile, station wagon | Other motor vehicle | 0 |
| | | | | | West | Going ahead | Automobile, station wagon | Other motor vehicle | |
| 2018-Jun-29, Fri,15:48 | Clear | Rear end | P.D. only | Dry | East | Slowing or stopping | Automobile, station wagon | Other motor vehicle | 0 |
| | | | | | East | Slowing or stopping | Automobile, station wagon | Other motor vehicle | |
| 2018-Aug-11, Sat,12:51 | Clear | Turning movement | P.D. only | Dry | East | Turning left | Automobile, station wagon | Other motor vehicle | 0 |
| | | | | | West | Going ahead | Automobile, station wagon | Other motor vehicle | |
| 2018-Aug-13, Mon,16:20 | Clear | Turning movement | P.D. only | Dry | East | Turning left | Pick-up truck | Other motor vehicle | 0 |
| | | | | | West | Going ahead | Automobile, station wagon | Other motor vehicle | |
| 2018-Aug-17, Fri,10:38 | Clear | Turning movement | P.D. only | Wet | West | Turning left | Automobile, station wagon | Other motor vehicle | 0 |
| | | | | | East | Going ahead | Automobile, station wagon | Other motor vehicle | |
| | | | | | East | Going ahead | Truck - closed | Other motor vehicle | |



Transportation Services - Traffic Services

Collision Details Report - Public Version

From: January 1, 2016 To: December 31, 2020

Location: CARLING AVE @ CLYDE AVE/COLE AVE

Traffic Control: Traffic signal

Total Collisions: 53

| Date/Day/Time | Environment | Impact Type | Classification | Surface Cond'n | Veh. Dir | Vehicle Manoeuver | Vehicle type | First Event | No. Ped |
|------------------------|-------------|------------------|------------------|----------------|----------|-------------------|---------------------------|---------------------|---------|
| 2018-Oct-19, Fri,09:19 | Clear | Turning movement | P.D. only | Dry | West | Turning left | Pick-up truck | Other motor vehicle | 0 |
| | | | | | East | Going ahead | Automobile, station wagon | Other motor vehicle | |
| 2018-Oct-24, Wed,12:43 | Clear | Turning movement | P.D. only | Dry | East | Turning left | Automobile, station wagon | Other motor vehicle | 0 |
| | | | | | West | Going ahead | Automobile, station wagon | Other motor vehicle | |
| 2018-Oct-27, Sat,22:36 | Snow | Sideswipe | P.D. only | Wet | East | Changing lanes | Automobile, station wagon | Other motor vehicle | 0 |
| | | | | | East | Going ahead | Automobile, station wagon | Other motor vehicle | |
| 2018-Nov-16, Fri,07:23 | Snow | Angle | Non-fatal injury | Loose snow | West | Going ahead | Automobile, station wagon | Other motor vehicle | 0 |
| | | | | | North | Going ahead | Automobile, station wagon | Other motor vehicle | |
| | | | | | South | Going ahead | Pick-up truck | Other motor vehicle | |
| 2018-Nov-23, Fri,13:08 | Clear | SMV other | Non-fatal injury | Dry | North | Turning left | Automobile, station wagon | Pedestrian | 1 |
| 2019-Jan-03, Thu,11:46 | Clear | Rear end | P.D. only | Dry | South | Going ahead | Automobile, station wagon | Other motor vehicle | 0 |
| | | | | | South | Stopped | Automobile, station wagon | Other motor vehicle | |
| | | | | | South | Stopped | Automobile, station wagon | Other motor vehicle | |
| 2019-Jan-21, Mon,20:49 | Snow | Angle | P.D. only | Packed snow | East | Turning right | Automobile, station wagon | Skidding/sliding | 0 |
| | | | | | North | Turning left | Automobile, station wagon | Other motor vehicle | |
| 2019-Jan-25, Fri,10:49 | Clear | Sideswipe | P.D. only | Slush | North | Changing lanes | Automobile, station wagon | Other motor vehicle | 0 |
| | | | | | North | Going ahead | Delivery van | Other motor vehicle | |
| 2019-Feb-06, Wed,16:17 | Rain | Sideswipe | P.D. only | Wet | West | Changing lanes | Automobile, station wagon | Other motor vehicle | 0 |
| | | | | | West | Going ahead | Automobile, station wagon | Other motor vehicle | |
| 2019-May-21, Tue,18:53 | Clear | Turning movement | Non-fatal injury | Dry | West | Turning left | Pick-up truck | Other motor vehicle | 0 |
| | | | | | East | Going ahead | Automobile, station wagon | Other motor vehicle | |
| 2019-Jun-10, Mon,19:51 | Clear | Turning movement | P.D. only | Dry | West | Turning right | Unknown | Cyclist | 0 |
| | | | | | West | Going ahead | Bicycle | Other motor vehicle | |



Transportation Services - Traffic Services

Collision Details Report - Public Version

From: January 1, 2016 To: December 31, 2020

Location: CARLING AVE @ CLYDE AVE/COLE AVE

Traffic Control: Traffic signal

Total Collisions: 53

| Date/Day/Time | Environment | Impact Type | Classification | Surface Cond'n | Veh. Dir | Vehicle Manoeuver | Vehicle type | First Event | No. Ped |
|------------------------|-------------|------------------|------------------|----------------|----------|---------------------|---------------------------|----------------------------|---------|
| 2019-Jun-12, Wed,09:14 | Clear | Rear end | Non-fatal injury | Dry | West | Going ahead | Automobile, station wagon | Other motor vehicle | 0 |
| | | | | | West | Going ahead | Automobile, station wagon | Other motor vehicle | |
| 2019-Jun-25, Tue,07:07 | Clear | Turning movement | Non-fatal injury | Wet | West | Turning left | Automobile, station wagon | Other motor vehicle | 0 |
| | | | | | East | Going ahead | Automobile, station wagon | Other motor vehicle | |
| | | | | | North | Stopped | Pick-up truck | Other motor vehicle | |
| 2019-Aug-17, Sat,16:38 | Clear | Sideswipe | P.D. only | Wet | East | Going ahead | Automobile, station wagon | Other motor vehicle | 0 |
| | | | | | East | Going ahead | Automobile, station wagon | Other motor vehicle | |
| 2019-Oct-17, Thu,06:50 | Rain | Sideswipe | P.D. only | Wet | West | Going ahead | Unknown | Other motor vehicle | 0 |
| | | | | | West | Turning left | Automobile, station wagon | Other motor vehicle | |
| 2020-Jan-31, Fri,17:53 | Clear | SMV other | Non-fatal injury | Dry | North | Turning left | Automobile, station wagon | Pedestrian | 1 |
| 2020-Feb-22, Sat,02:05 | Clear | Sideswipe | Non-fatal injury | Dry | West | Changing lanes | Automobile, station wagon | Other motor vehicle | 0 |
| | | | | | West | Going ahead | Passenger van | Other motor vehicle | |
| 2020-Feb-26, Wed,19:34 | Snow | Turning movement | Non-fatal injury | Slush | West | Turning left | Automobile, station wagon | Other motor vehicle | 0 |
| | | | | | East | Going ahead | Automobile, station wagon | Other motor vehicle | |
| 2020-Feb-28, Fri,15:40 | Clear | Rear end | P.D. only | Dry | East | Slowing or stopping | Automobile, station wagon | Other motor vehicle | 0 |
| | | | | | East | Stopped | Automobile, station wagon | Other motor vehicle | |
| 2020-Mar-12, Thu,12:00 | Clear | Other | P.D. only | Dry | East | Stopped | Automobile, station wagon | Debris falling off vehicle | 0 |
| | | | | | East | Slowing or stopping | Pick-up truck | Other | |
| 2020-Apr-21, Tue,12:31 | Snow | Angle | P.D. only | Wet | North | Turning left | Automobile, station wagon | Other motor vehicle | 0 |
| | | | | | West | Going ahead | Automobile, station wagon | Other motor vehicle | |
| 2020-Jul-16, Thu,13:21 | Clear | Turning movement | P.D. only | Dry | West | Turning left | Automobile, station wagon | Other motor vehicle | 0 |
| | | | | | East | Going ahead | Pick-up truck | Other motor vehicle | |
| 2020-Sep-29, Tue,19:44 | Clear | Turning movement | Non-fatal injury | Dry | East | Turning left | Pick-up truck | Other motor vehicle | 0 |
| | | | | | West | Going ahead | Pick-up truck | Other motor vehicle | |



Transportation Services - Traffic Services

Collision Details Report - Public Version

From: January 1, 2016 To: December 31, 2020

Location: CARLING AVE @ CLYDE AVE/COLE AVE

Traffic Control: Traffic signal

Total Collisions: 53

| Date/Day/Time | Environment | Impact Type | Classification | Surface Cond'n | Veh. Dir | Vehicle Manoeuvre | Vehicle type | First Event | No. Ped |
|------------------------|-------------|------------------|------------------|----------------|----------|-------------------|---------------------------|---------------------|---------|
| 2020-Oct-07, Wed,11:33 | Clear | Rear end | Non-fatal injury | Dry | West | Going ahead | Automobile, station wagon | Other motor vehicle | 0 |
| | | | | | West | Going ahead | Automobile, station wagon | Other motor vehicle | |
| 2020-Oct-27, Tue,11:59 | Clear | Turning movement | Non-fatal injury | Dry | East | Turning left | Automobile, station wagon | Other motor vehicle | 0 |
| | | | | | West | Going ahead | Pick-up truck | Other motor vehicle | |

Location: CARLING AVE EB btwn CHURCHILL AVE N & CLYDE AVE

Traffic Control: No control

Total Collisions: 1

| Date/Day/Time | Environment | Impact Type | Classification | Surface Cond'n | Veh. Dir | Vehicle Manoeuvre | Vehicle type | First Event | No. Ped |
|------------------------|-------------|-------------|----------------|----------------|----------|-------------------|---------------------------|---------------------|---------|
| 2017-Mar-27, Mon,15:30 | Clear | Sideswipe | P.D. only | Wet | East | Changing lanes | Automobile, station wagon | Other motor vehicle | 0 |
| | | | | | East | Going ahead | Passenger van | Other motor vehicle | |

Location: CARLING AVE WB btwn CHURCHILL AVE N & COLE AVE

Traffic Control: No control

Total Collisions: 8

| Date/Day/Time | Environment | Impact Type | Classification | Surface Cond'n | Veh. Dir | Vehicle Manoeuvre | Vehicle type | First Event | No. Ped |
|------------------------|-------------|------------------|------------------|----------------|----------|---------------------|---------------------------|---------------------|---------|
| 2016-Oct-07, Fri,14:55 | Clear | Rear end | P.D. only | Dry | East | Going ahead | Automobile, station wagon | Other motor vehicle | 0 |
| | | | | | East | Turning right | Automobile, station wagon | Other motor vehicle | |
| 2017-May-04, Thu,16:47 | Clear | Sideswipe | P.D. only | Dry | West | Changing lanes | Automobile, station wagon | Other motor vehicle | 0 |
| | | | | | West | Going ahead | Automobile, station wagon | Other motor vehicle | |
| 2018-Aug-02, Thu,17:43 | Clear | Turning movement | P.D. only | Dry | West | Going ahead | Automobile, station wagon | Other motor vehicle | 0 |
| | | | | | West | Turning right | Automobile, station wagon | Other motor vehicle | |
| 2019-Jan-21, Mon,19:30 | Snow | SMV other | Non-fatal injury | Loose snow | West | Going ahead | Automobile, station wagon | Pedestrian | 1 |
| 2019-Feb-04, Mon,17:31 | Snow | Rear end | P.D. only | Loose snow | West | Slowing or stopping | Automobile, station wagon | Other motor vehicle | 0 |
| | | | | | West | Stopped | Automobile, station wagon | Other motor vehicle | |
| 2019-Aug-27, Tue,15:05 | Clear | Turning movement | P.D. only | Dry | West | Turning right | Passenger van | Other motor vehicle | 0 |
| | | | | | West | Going ahead | Automobile, station wagon | Other motor vehicle | |



Transportation Services - Traffic Services

Collision Details Report - Public Version

From: January 1, 2016 To: December 31, 2020

Location: CARLING AVE WB btwn CHURCHILL AVE N & COLE AVE

Traffic Control: No control

Total Collisions: 8

| Date/Day/Time | Environment | Impact Type | Classification | Surface Cond'n | Veh. Dir | Vehicle Manoeuver | Vehicle type | First Event | No. Ped |
|------------------------|-------------|------------------|----------------|----------------|----------|-------------------|---------------------------|---------------------|---------|
| 2019-Sep-26, Thu,13:48 | Clear | Turning movement | P.D. only | Dry | West | Turning right | Automobile, station wagon | Other motor vehicle | 0 |
| | | | | | West | Going ahead | Truck - closed | Other motor vehicle | |
| 2020-Sep-21, Mon,20:32 | Clear | Rear end | P.D. only | Dry | West | Going ahead | Passenger van | Other motor vehicle | 0 |
| | | | | | West | Going ahead | Automobile, station wagon | Other motor vehicle | |

Location: CLYDE AVE @ DOHENY ST

Traffic Control: Traffic signal

Total Collisions: 3

| Date/Day/Time | Environment | Impact Type | Classification | Surface Cond'n | Veh. Dir | Vehicle Manoeuver | Vehicle type | First Event | No. Ped |
|------------------------|---------------|-------------|------------------|----------------|----------|---------------------|---------------------------|---------------------|---------|
| 2016-Feb-18, Thu,07:00 | Clear | Rear end | P.D. only | Ice | South | Slowing or stopping | Automobile, station wagon | Other motor vehicle | 0 |
| | | | | | South | Stopped | Pick-up truck | Other motor vehicle | |
| 2016-Feb-18, Thu,19:12 | Freezing Rain | Rear end | Non-fatal injury | Ice | South | Slowing or stopping | Automobile, station wagon | Other motor vehicle | 0 |
| | | | | | South | Slowing or stopping | Pick-up truck | Other motor vehicle | |
| 2018-Jul-27, Fri,14:24 | Clear | Sideswipe | P.D. only | Dry | South | Changing lanes | Automobile, station wagon | Other motor vehicle | 0 |
| | | | | | South | Slowing or stopping | Automobile, station wagon | Other motor vehicle | |

Location: CLYDE AVE btwn CARLING AVE & DOHENY ST

Traffic Control: No control

Total Collisions: 4

| Date/Day/Time | Environment | Impact Type | Classification | Surface Cond'n | Veh. Dir | Vehicle Manoeuver | Vehicle type | First Event | No. Ped |
|------------------------|-------------|------------------|------------------|----------------|----------|-------------------|---------------------------|---------------------|---------|
| 2019-Mar-23, Sat,09:45 | Clear | Turning movement | P.D. only | Dry | South | Turning left | Automobile, station wagon | Other motor vehicle | 0 |
| | | | | | North | Going ahead | Automobile, station wagon | Other motor vehicle | |
| 2019-Aug-18, Sun,13:08 | Clear | Turning movement | Non-fatal injury | Dry | North | Turning left | Automobile, station wagon | Other motor vehicle | 0 |
| | | | | | South | Going ahead | Automobile, station wagon | Other motor vehicle | |
| 2020-Jan-31, Fri,13:47 | Clear | Angle | P.D. only | Dry | West | Turning left | Automobile, station wagon | Other motor vehicle | 0 |
| | | | | | South | Going ahead | Pick-up truck | Other motor vehicle | |



Transportation Services - Traffic Services

Collision Details Report - Public Version

From: January 1, 2016 To: December 31, 2020

Location: CLYDE AVE btwn CARLING AVE & DOHENY ST

Traffic Control: No control

Total Collisions: 4

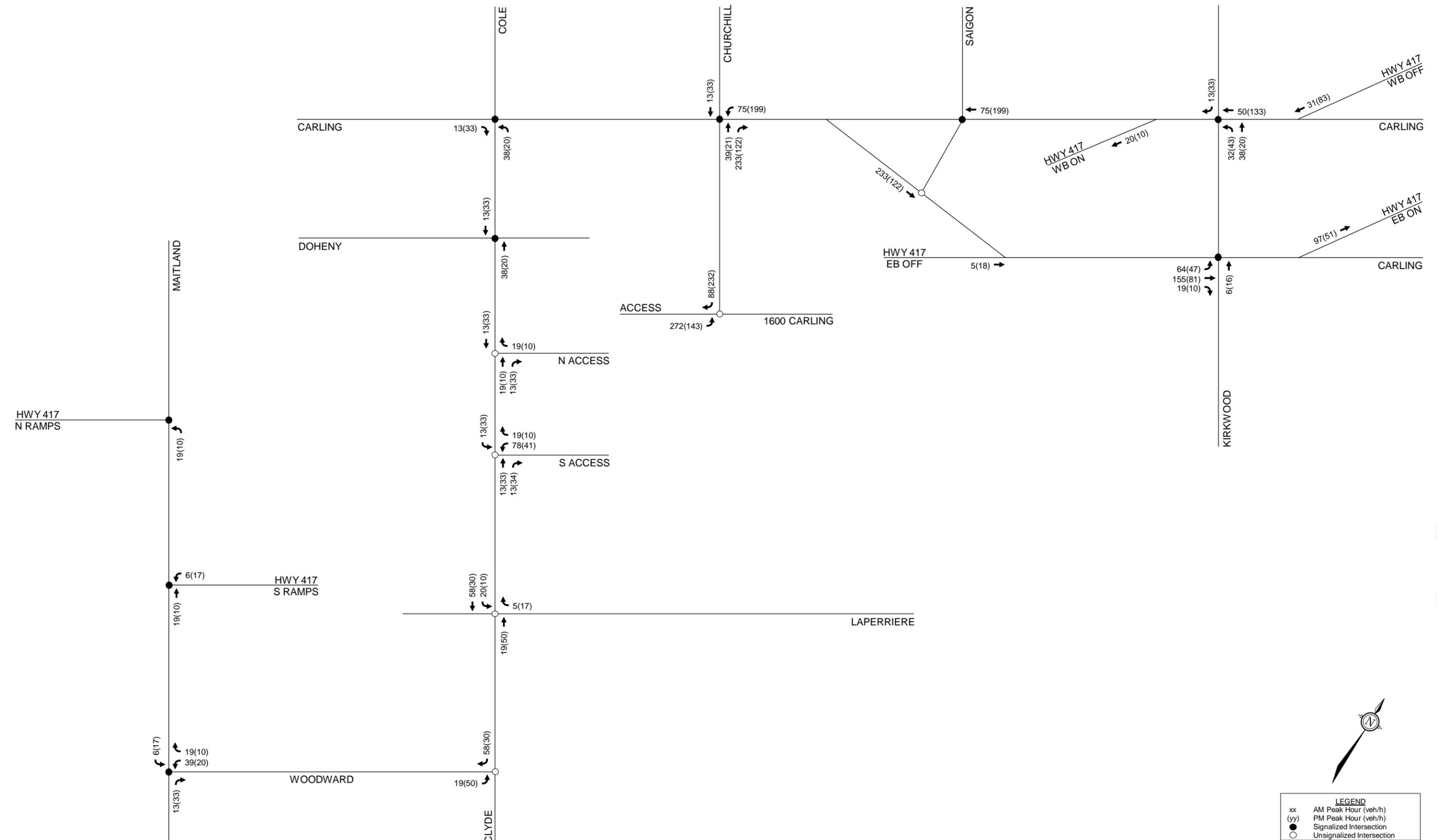
| Date/Day/Time | Environment | Impact Type | Classification | Surface Cond'n | Veh. Dir | Vehicle Manoeuver | Vehicle type | First Event | No. Ped |
|------------------------|-------------|-------------|----------------|----------------|----------|-------------------|---------------------------|---------------------|---------|
| 2020-Sep-13, Sun,14:13 | Clear | Angle | P.D. only | Dry | East | Reversing | Automobile, station wagon | Other motor vehicle | 0 |
| | | | | | South | Stopped | Automobile, station wagon | Other motor vehicle | |

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Appendix E:

Adjacent Development Site-Generated Volume Excerpts

Figure 10: 2032 Site-Generated Traffic Volumes



LEGEND

- xx AM Peak Hour (veh/h)
- (yy) PM Peak Hour (veh/h)
- Signalized Intersection
- Unsignalized Intersection

- 65% to east Carling Ave (3/4 of which complete the U-turn at Carling/Clyde/Cole and 1/4 use Tillbury Ave).

Figure 8: Planned Residential Development Site-Generated Traffic

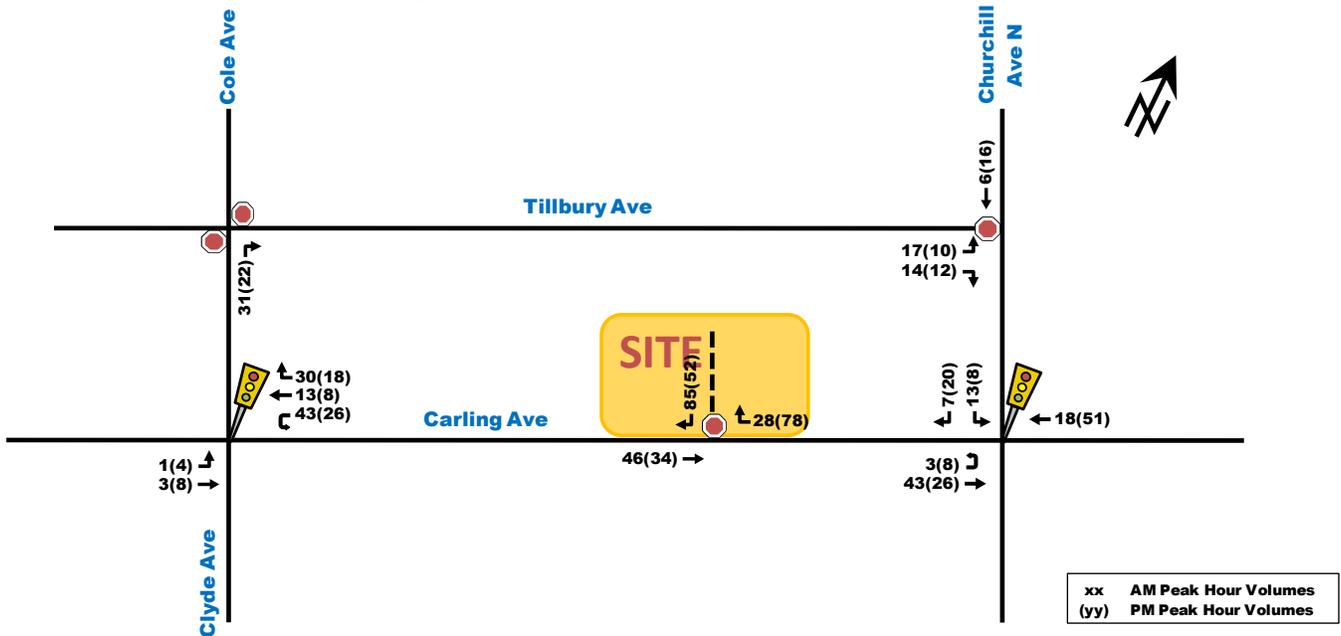
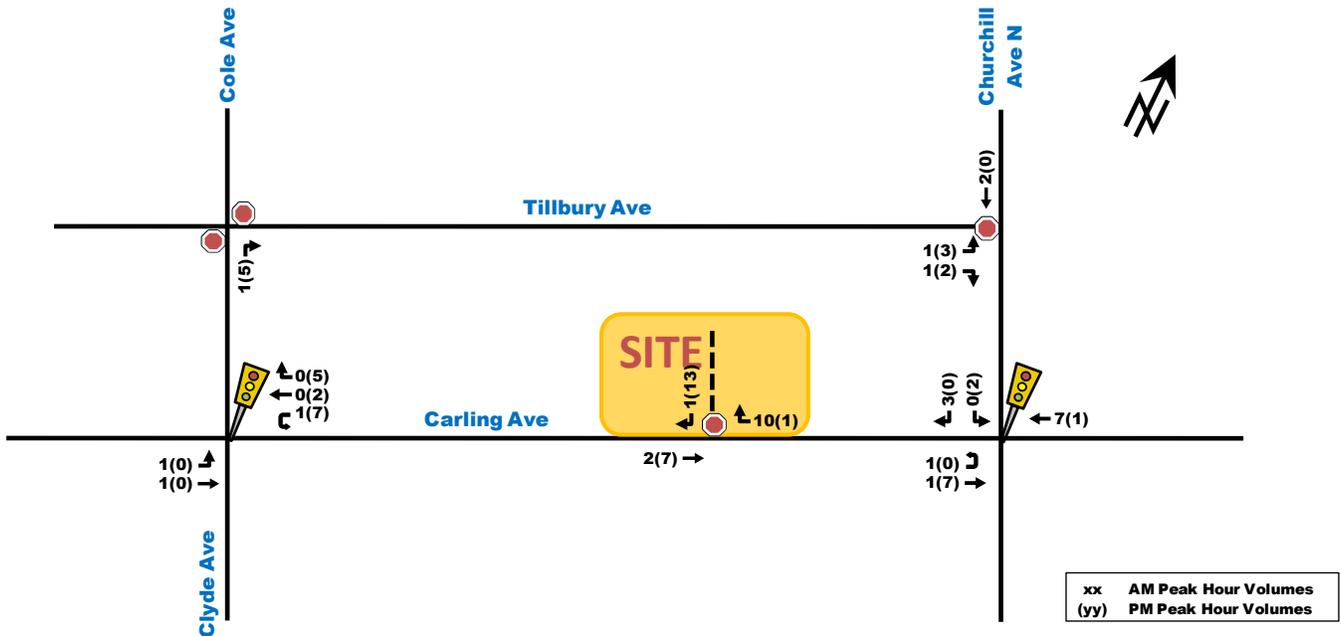


Figure 9: Existing Parking Lot Traffic Volumes



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Appendix F:

TDM-Supportive Development Design and Infrastructure Checklist

TDM-Supportive Development Design and Infrastructure Checklist:
Residential Developments (multi-family or condominium)

| Legend | |
|-----------------|--|
| REQUIRED | The Official Plan or Zoning By-law provides related guidance that must be followed |
| BASIC | The measure is generally feasible and effective, and in most cases would benefit the development and its users |
| BETTER | The measure could maximize support for users of sustainable modes, and optimize development performance |

| TDM-supportive design & infrastructure measures: <i>Residential developments</i> | | Check if completed & add descriptions, explanations or plan/drawing references |
|---|--|--|
| 1. WALKING & CYCLING: ROUTES | | |
| 1.1 Building location & access points | | |
| BASIC | 1.1.1 Locate building close to the street, and do not locate parking areas between the street and building entrances | <input type="checkbox"/> |
| BASIC | 1.1.2 Locate building entrances in order to minimize walking distances to sidewalks and transit stops/stations | <input checked="" type="checkbox"/> |
| BASIC | 1.1.3 Locate building doors and windows to ensure visibility of pedestrians from the building, for their security and comfort | <input checked="" type="checkbox"/> |
| 1.2 Facilities for walking & cycling | | |
| REQUIRED | 1.2.1 Provide convenient, direct access to stations or major stops along rapid transit routes within 600 metres; minimize walking distances from buildings to rapid transit; provide pedestrian-friendly, weather-protected (where possible) environment between rapid transit accesses and building entrances; ensure quality linkages from sidewalks through building entrances to integrated stops/stations (see <i>Official Plan policy 4.3.3</i>) | <input checked="" type="checkbox"/> |
| REQUIRED | 1.2.2 Provide safe, direct and attractive pedestrian access from public sidewalks to building entrances through such measures as: reducing distances between public sidewalks and major building entrances; providing walkways from public streets to major building entrances; within a site, providing walkways along the front of adjoining buildings, between adjacent buildings, and connecting areas where people may congregate, such as courtyards and transit stops; and providing weather protection through canopies, colonnades, and other design elements wherever possible (see <i>Official Plan policy 4.3.12</i>) | <input checked="" type="checkbox"/> |

| TDM-supportive design & infrastructure measures: <i>Residential developments</i> | | Check if completed & add descriptions, explanations or plan/drawing references |
|---|---|--|
| REQUIRED | 1.2.3 Provide sidewalks of smooth, well-drained walking surfaces of contrasting materials or treatments to differentiate pedestrian areas from vehicle areas, and provide marked pedestrian crosswalks at intersection sidewalks (see <i>Official Plan policy 4.3.10</i>) | <input checked="" type="checkbox"/> |
| REQUIRED | 1.2.4 Make sidewalks and open space areas easily accessible through features such as gradual grade transition, depressed curbs at street corners and convenient access to extra-wide parking spaces and ramps (see <i>Official Plan policy 4.3.10</i>) | <input checked="" type="checkbox"/> |
| REQUIRED | 1.2.5 Include adequately spaced inter-block/street cycling and pedestrian connections to facilitate travel by active transportation. Provide links to the existing or planned network of public sidewalks, multi-use pathways and on-road cycle routes. Where public sidewalks and multi-use pathways intersect with roads, consider providing traffic control devices to give priority to cyclists and pedestrians (see <i>Official Plan policy 4.3.11</i>) | <input checked="" type="checkbox"/> |
| BASIC | 1.2.6 Provide safe, direct and attractive walking routes from building entrances to nearby transit stops | <input checked="" type="checkbox"/> |
| BASIC | 1.2.7 Ensure that walking routes to transit stops are secure, visible, lighted, shaded and wind-protected wherever possible | <input checked="" type="checkbox"/> |
| BASIC | 1.2.8 Design roads used for access or circulation by cyclists using a target operating speed of no more than 30 km/h, or provide a separated cycling facility | <input checked="" type="checkbox"/> |
| 1.3 Amenities for walking & cycling | | |
| BASIC | 1.3.1 Provide lighting, landscaping and benches along walking and cycling routes between building entrances and streets, sidewalks and trails | <input checked="" type="checkbox"/> |
| BASIC | 1.3.2 Provide wayfinding signage for site access (where required, e.g. when multiple buildings or entrances exist) and egress (where warranted, such as when directions to reach transit stops/stations, trails or other common destinations are not obvious) | <input checked="" type="checkbox"/> |

| TDM-supportive design & infrastructure measures: <i>Residential developments</i> | | Check if completed & add descriptions, explanations or plan/drawing references |
|---|--|--|
| 2. WALKING & CYCLING: END-OF-TRIP FACILITIES | | |
| 2.1 Bicycle parking | | |
| REQUIRED | 2.1.1 Provide bicycle parking in highly visible and lighted areas, sheltered from the weather wherever possible (see <i>Official Plan policy 4.3.6</i>) | <input checked="" type="checkbox"/> |
| REQUIRED | 2.1.2 Provide the number of bicycle parking spaces specified for various land uses in different parts of Ottawa; provide convenient access to main entrances or well-used areas (see <i>Zoning By-law Section 111</i>) | <input checked="" type="checkbox"/> |
| REQUIRED | 2.1.3 Ensure that bicycle parking spaces and access aisles meet minimum dimensions; that no more than 50% of spaces are vertical spaces; and that parking racks are securely anchored (see <i>Zoning By-law Section 111</i>) | <input checked="" type="checkbox"/> |
| BASIC | 2.1.4 Provide bicycle parking spaces equivalent to the expected number of resident-owned bicycles, plus the expected peak number of visitor cyclists | <input type="checkbox"/> |
| 2.2 Secure bicycle parking | | |
| REQUIRED | 2.2.1 Where more than 50 bicycle parking spaces are provided for a single residential building, locate at least 25% of spaces within a building/structure, a secure area (e.g. supervised parking lot or enclosure) or bicycle lockers (see <i>Zoning By-law Section 111</i>) | <input checked="" type="checkbox"/> |
| BETTER | 2.2.2 Provide secure bicycle parking spaces equivalent to at least the number of units at condominiums or multi-family residential developments | <input type="checkbox"/> |
| 2.3 Bicycle repair station | | |
| BETTER | 2.3.1 Provide a permanent bike repair station, with commonly used tools and an air pump, adjacent to the main bicycle parking area (or secure bicycle parking area, if provided) | <input type="checkbox"/> |
| 3. TRANSIT | | |
| 3.1 Customer amenities | | |
| BASIC | 3.1.1 Provide shelters, lighting and benches at any on-site transit stops | <input type="checkbox"/> |
| BASIC | 3.1.2 Where the site abuts an off-site transit stop and insufficient space exists for a transit shelter in the public right-of-way, protect land for a shelter and/or install a shelter | <input type="checkbox"/> |
| BETTER | 3.1.3 Provide a secure and comfortable interior waiting area by integrating any on-site transit stops into the building | <input type="checkbox"/> |

| TDM-supportive design & infrastructure measures: <i>Residential developments</i> | | Check if completed & add descriptions, explanations or plan/drawing references |
|---|--|--|
| 4. RIDESHARING | | |
| 4.1 Pick-up & drop-off facilities | | |
| BASIC | 4.1.1 Provide a designated area for carpool drivers (plus taxis and ride-hailing services) to drop off or pick up passengers without using fire lanes or other no-stopping zones | <input type="checkbox"/> |
| 5. CARSHARING & BIKESHARING | | |
| 5.1 Carshare parking spaces | | |
| BETTER | 5.1.1 Provide up to three carshare parking spaces in an R3, R4 or R5 Zone for specified residential uses (see <i>Zoning By-law Section 94</i>) | <input type="checkbox"/> |
| 5.2 Bikeshare station location | | |
| BETTER | 5.2.1 Provide a designated bikeshare station area near a major building entrance, preferably lighted and sheltered with a direct walkway connection | <input type="checkbox"/> |
| 6. PARKING | | |
| 6.1 Number of parking spaces | | |
| REQUIRED | 6.1.1 Do not provide more parking than permitted by zoning, nor less than required by zoning, unless a variance is being applied for | <input checked="" type="checkbox"/> |
| BASIC | 6.1.2 Provide parking for long-term and short-term users that is consistent with mode share targets, considering the potential for visitors to use off-site public parking | <input checked="" type="checkbox"/> |
| BASIC | 6.1.3 Where a site features more than one use, provide shared parking and reduce the cumulative number of parking spaces accordingly (see <i>Zoning By-law Section 104</i>) | <input type="checkbox"/> |
| BETTER | 6.1.4 Reduce the minimum number of parking spaces required by zoning by one space for each 13 square metres of gross floor area provided as shower rooms, change rooms, locker rooms and other facilities for cyclists in conjunction with bicycle parking (see <i>Zoning By-law Section 111</i>) | <input type="checkbox"/> |
| 6.2 Separate long-term & short-term parking areas | | |
| BETTER | 6.2.1 Provide separate areas for short-term and long-term parking (using signage or physical barriers) to permit access controls and simplify enforcement (i.e. to discourage residents from parking in visitor spaces, and vice versa) | <input type="checkbox"/> |

TDM Measures Checklist:
Residential Developments (multi-family, condominium or subdivision)

| Legend | |
|---------------|--|
| BASIC | The measure is generally feasible and effective, and in most cases would benefit the development and its users |
| BETTER | The measure could maximize support for users of sustainable modes, and optimize development performance |
| ★ | The measure is one of the most dependably effective tools to encourage the use of sustainable modes |

| TDM measures: Residential developments | | Check if proposed & add descriptions |
|---|---|---|
| 1. TDM PROGRAM MANAGEMENT | | |
| 1.1 Program coordinator | | |
| BASIC | ★ 1.1.1 Designate an internal coordinator, or contract with an external coordinator | <input type="checkbox"/> |
| 1.2 Travel surveys | | |
| BETTER | 1.2.1 Conduct periodic surveys to identify travel-related behaviours, attitudes, challenges and solutions, and to track progress | <input type="checkbox"/> |
| 2. WALKING AND CYCLING | | |
| 2.1 Information on walking/cycling routes & destinations | | |
| BASIC | 2.1.1 Display local area maps with walking/cycling access routes and key destinations at major entrances <i>(multi-family, condominium)</i> | <input type="checkbox"/> |
| 2.2 Bicycle skills training | | |
| BETTER | 2.2.1 Offer on-site cycling courses for residents, or subsidize off-site courses | <input type="checkbox"/> |

| TDM measures: <i>Residential developments</i> | | Check if proposed & add descriptions |
|---|--|--------------------------------------|
| 3. TRANSIT | | |
| 3.1 Transit information | | |
| BASIC | 3.1.1 Display relevant transit schedules and route maps at entrances (<i>multi-family, condominium</i>) | <input type="checkbox"/> |
| BETTER | 3.1.2 Provide real-time arrival information display at entrances (<i>multi-family, condominium</i>) | <input type="checkbox"/> |
| 3.2 Transit fare incentives | | |
| BASIC ★ | 3.2.1 Offer PRESTO cards preloaded with one monthly transit pass on residence purchase/move-in, to encourage residents to use transit | <input type="checkbox"/> |
| BETTER | 3.2.2 Offer at least one year of free monthly transit passes on residence purchase/move-in | <input type="checkbox"/> |
| 3.3 Enhanced public transit service | | |
| BETTER ★ | 3.3.1 Contract with OC Transpo to provide early transit services until regular services are warranted by occupancy levels (<i>subdivision</i>) | <input type="checkbox"/> |
| 3.4 Private transit service | | |
| BETTER | 3.4.1 Provide shuttle service for seniors homes or lifestyle communities (e.g. scheduled mall or supermarket runs) | <input type="checkbox"/> |
| 4. CARSHARING & BIKESHARING | | |
| 4.1 Bikeshare stations & memberships | | |
| BETTER | 4.1.1 Contract with provider to install on-site bikeshare station (<i>multi-family</i>) | <input type="checkbox"/> |
| BETTER | 4.1.2 Provide residents with bikeshare memberships, either free or subsidized (<i>multi-family</i>) | <input type="checkbox"/> |
| 4.2 Carshare vehicles & memberships | | |
| BETTER | 4.2.1 Contract with provider to install on-site carshare vehicles and promote their use by residents | <input type="checkbox"/> |
| BETTER | 4.2.2 Provide residents with carshare memberships, either free or subsidized | <input type="checkbox"/> |
| 5. PARKING | | |
| 5.1 Priced parking | | |
| BASIC ★ | 5.1.1 Unbundle parking cost from purchase price (<i>condominium</i>) | <input type="checkbox"/> |
| BASIC ★ | 5.1.2 Unbundle parking cost from monthly rent (<i>multi-family</i>) | <input type="checkbox"/> |

| TDM measures: Residential developments | | Check if proposed & add descriptions |
|---|---|---|
| 6. TDM MARKETING & COMMUNICATIONS | | |
| 6.1 Multimodal travel information | | |
| BASIC | ★ 6.1.1 Provide a multimodal travel option information package to new residents | <input type="checkbox"/> |
| 6.2 Personalized trip planning | | |
| BETTER | ★ 6.2.1 Offer personalized trip planning to new residents | <input type="checkbox"/> |

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Appendix G:

Existing and Future Synchro Analysis Reports

Existing Conditions

Lanes, Volumes, Timings
1: Churchill Ave & Carling Ave

12/06/2022

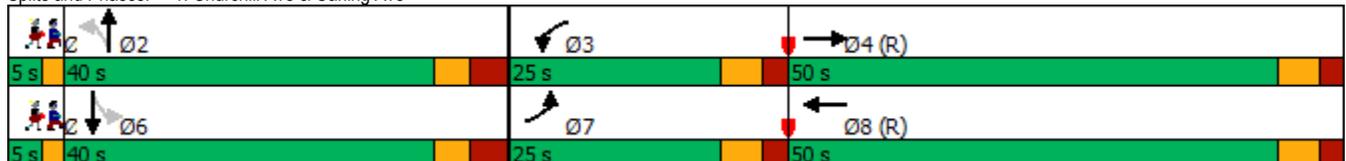


| Lane Group | EBL | EBT | WBL | WBT | NBL | NBT | SBL | SBT | Ø1 | Ø5 |
|------------------------|-------|--------|-------|-------|-------|-------|--------|-------|------|------|
| Lane Configurations | | | | | | | | | | |
| Traffic Volume (vph) | 173 | 1502 | 106 | 710 | 11 | 5 | 336 | 31 | | |
| Future Volume (vph) | 173 | 1502 | 106 | 710 | 11 | 5 | 336 | 31 | | |
| Lane Group Flow (vph) | 192 | 1778 | 118 | 960 | 12 | 18 | 373 | 304 | | |
| Turn Type | Prot | NA | Prot | NA | Perm | NA | Perm | NA | | |
| Protected Phases | 7 | 4 | 3 | 8 | | 2 | | 6 | 1 | 5 |
| Permitted Phases | | | | | 2 | | 6 | | | |
| Detector Phase | 7 | 4 | 3 | 8 | 2 | 2 | 6 | 6 | | |
| Switch Phase | | | | | | | | | | |
| Minimum Initial (s) | 5.0 | 10.0 | 5.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 3.0 | 3.0 |
| Minimum Split (s) | 11.1 | 34.1 | 11.1 | 34.1 | 39.8 | 39.8 | 39.8 | 39.8 | 5.0 | 5.0 |
| Total Split (s) | 25.0 | 50.0 | 25.0 | 50.0 | 40.0 | 40.0 | 40.0 | 40.0 | 5.0 | 5.0 |
| Total Split (%) | 20.8% | 41.7% | 20.8% | 41.7% | 33.3% | 33.3% | 33.3% | 33.3% | 4% | 4% |
| Yellow Time (s) | 3.7 | 3.7 | 3.7 | 3.7 | 3.3 | 3.3 | 3.3 | 3.3 | 2.0 | 2.0 |
| All-Red Time (s) | 2.4 | 2.4 | 2.4 | 2.4 | 3.5 | 3.5 | 3.5 | 3.5 | 0.0 | 0.0 |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | |
| Total Lost Time (s) | 6.1 | 6.1 | 6.1 | 6.1 | 6.8 | 6.8 | 6.8 | 6.8 | | |
| Lead/Lag | Lead | Lag | Lead | Lag | Lag | Lag | Lag | Lag | Lead | Lead |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Recall Mode | None | C-Max | None | C-Max | Max | Max | Max | Max | None | None |
| Act Effct Green (s) | 17.1 | 49.2 | 13.6 | 45.7 | 38.2 | 38.2 | 38.2 | 38.2 | | |
| Actuated g/C Ratio | 0.14 | 0.41 | 0.11 | 0.38 | 0.32 | 0.32 | 0.32 | 0.32 | | |
| v/c Ratio | 0.80 | 0.90 | 0.61 | 0.54 | 0.05 | 0.04 | 0.91 | 0.47 | | |
| Control Delay | 91.7 | 18.7 | 60.2 | 27.4 | 29.3 | 16.8 | 66.5 | 8.1 | | |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | |
| Total Delay | 91.7 | 18.7 | 60.2 | 27.4 | 29.3 | 16.8 | 66.5 | 8.1 | | |
| LOS | F | B | E | C | C | B | E | A | | |
| Approach Delay | | 25.8 | | 31.0 | | 21.8 | | 40.3 | | |
| Approach LOS | | C | | C | | C | | D | | |
| Queue Length 50th (m) | 45.4 | 53.5 | 27.1 | 63.2 | 2.0 | 1.0 | 83.9 | 5.6 | | |
| Queue Length 95th (m) | m66.4 | #184.0 | 44.2 | 77.2 | 6.6 | 6.2 | #140.2 | 27.8 | | |
| Internal Link Dist (m) | | 273.9 | | 176.6 | | 177.0 | | 412.2 | | |
| Turn Bay Length (m) | 65.0 | | 65.0 | | 20.0 | | 20.0 | | | |
| Base Capacity (vph) | 266 | 1977 | 266 | 1766 | 239 | 508 | 411 | 644 | | |
| 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 | 0.72 | 0.90 | 0.44 | 0.54 | 0.05 | 0.04 | 0.91 | 0.47 | | |

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 101 (84%), Referenced to phase 4:EBT and 8:WBT, Start of Green
 Natural Cycle: 100
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.91
 Intersection Signal Delay: 29.9
 Intersection LOS: C
 Intersection Capacity Utilization 82.6%
 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: 1: Churchill Ave & Carling Ave



Lanes, Volumes, Timings
2: Clyde Ave/Cole Ave & Carling Ave

12/06/2022



| Lane Group | EBL | EBT | WBL | WBT | NBL | NBT | NBR | SBL | SBT |
|------------------------|-------|--------|-------|-------|-------|-------|-------|-------|-------|
| Lane Configurations | | | | | | | | | |
| Traffic Volume (vph) | 60 | 1631 | 197 | 710 | 121 | 51 | 147 | 35 | 63 |
| Future Volume (vph) | 60 | 1631 | 197 | 710 | 121 | 51 | 147 | 35 | 63 |
| Lane Group Flow (vph) | 67 | 1953 | 219 | 818 | 134 | 57 | 163 | 39 | 143 |
| Turn Type | pm+pt | NA | pm+pt | NA | Perm | NA | Perm | Perm | NA |
| Protected Phases | 7 | 4 | 3 | 8 | | 2 | | | 6 |
| Permitted Phases | 4 | | 8 | | 2 | | 2 | 6 | |
| Detector Phase | 7 | 4 | 3 | 8 | 2 | 2 | 2 | 6 | 6 |
| Switch Phase | | | | | | | | | |
| Minimum Initial (s) | 5.0 | 10.0 | 5.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 |
| Minimum Split (s) | 10.4 | 30.8 | 10.4 | 30.8 | 36.6 | 36.6 | 36.6 | 36.6 | 36.6 |
| Total Split (s) | 23.0 | 60.0 | 23.0 | 60.0 | 37.0 | 37.0 | 37.0 | 37.0 | 37.0 |
| Total Split (%) | 19.2% | 50.0% | 19.2% | 50.0% | 30.8% | 30.8% | 30.8% | 30.8% | 30.8% |
| Yellow Time (s) | 3.7 | 3.7 | 3.7 | 3.7 | 3.3 | 3.3 | 3.3 | 3.3 | 3.3 |
| All-Red Time (s) | 1.7 | 2.1 | 1.7 | 2.1 | 3.3 | 3.3 | 3.3 | 3.3 | 3.3 |
| 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) | 5.4 | 5.8 | 5.4 | 5.8 | 6.6 | 6.6 | 6.6 | 6.6 | 6.6 |
| Lead/Lag | Lead | Lag | Lead | Lag | | | | | |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | | | | | |
| Recall Mode | None | C-Max | None | C-Max | None | None | None | None | None |
| Act Effct Green (s) | 73.1 | 65.7 | 87.6 | 77.0 | 20.4 | 20.4 | 20.4 | 20.4 | 20.4 |
| Actuated g/C Ratio | 0.61 | 0.55 | 0.73 | 0.64 | 0.17 | 0.17 | 0.17 | 0.17 | 0.17 |
| v/c Ratio | 0.16 | 0.74 | 0.80 | 0.27 | 0.78 | 0.19 | 0.45 | 0.18 | 0.46 |
| Control Delay | 3.8 | 11.0 | 53.1 | 10.8 | 75.8 | 41.2 | 9.9 | 41.4 | 34.4 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 3.8 | 11.0 | 53.1 | 10.8 | 75.8 | 41.2 | 9.9 | 41.4 | 34.4 |
| LOS | A | B | D | B | E | D | A | D | C |
| Approach Delay | | 10.8 | | 19.7 | | 39.9 | | | 35.9 |
| Approach LOS | | B | | B | | D | | | D |
| Queue Length 50th (m) | 1.3 | 28.9 | 43.7 | 20.4 | 30.6 | 11.6 | 0.0 | 8.0 | 21.3 |
| Queue Length 95th (m) | m2.4 | m192.5 | #74.3 | 40.0 | 48.2 | 21.4 | 16.5 | 16.4 | 37.3 |
| Internal Link Dist (m) | | 369.5 | | 273.9 | | 124.0 | | | 136.4 |
| Turn Bay Length (m) | 20.0 | | 120.0 | | 95.0 | | 5.0 | 20.0 | |
| Base Capacity (vph) | 570 | 2640 | 303 | 3050 | 254 | 451 | 455 | 320 | 444 |
| 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 | 0.12 | 0.74 | 0.72 | 0.27 | 0.53 | 0.13 | 0.36 | 0.12 | 0.32 |

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 84 (70%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.80

Intersection Signal Delay: 17.5

Intersection LOS: B

Intersection Capacity Utilization 90.7%

ICU Level of Service E

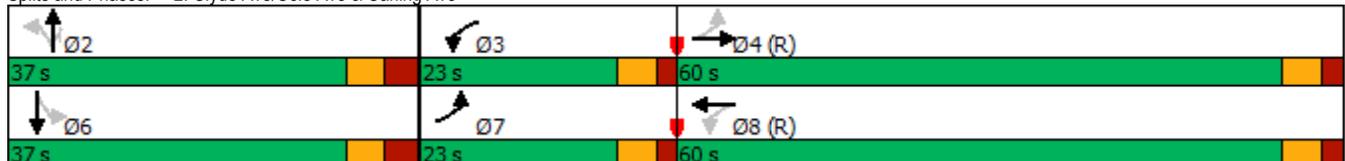
Analysis Period (min) 15

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: Clyde Ave/Cole Ave & Carling Ave



Lanes, Volumes, Timings
3: Broadview Ave & Carling Ave

12/06/2022

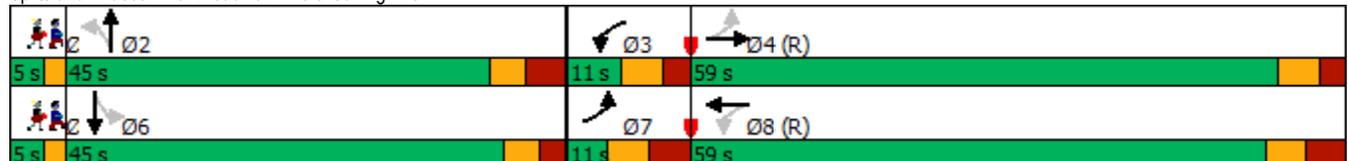


| Lane Group | EBL | EBT | WBL | WBT | NBL | NBT | SBL | SBT | Ø1 | Ø5 |
|------------------------|-------|--------|-------|-------|-------|-------|-------|-------|------|------|
| Lane Configurations | | | | | | | | | | |
| Traffic Volume (vph) | 197 | 1647 | 99 | 690 | 112 | 24 | 160 | 20 | | |
| Future Volume (vph) | 197 | 1647 | 99 | 690 | 112 | 24 | 160 | 20 | | |
| Lane Group Flow (vph) | 219 | 1946 | 110 | 899 | 124 | 107 | 178 | 172 | | |
| Turn Type | pm+pt | NA | pm+pt | NA | Perm | NA | Perm | NA | | |
| Protected Phases | 7 | 4 | 3 | 8 | | 2 | | 6 | 1 | 5 |
| Permitted Phases | 4 | | 8 | | 2 | | 6 | | | |
| Detector Phase | 7 | 4 | 3 | 8 | 2 | 2 | 6 | 6 | | |
| Switch Phase | | | | | | | | | | |
| Minimum Initial (s) | 5.0 | 10.0 | 5.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 3.0 | 3.0 |
| Minimum Split (s) | 12.4 | 23.2 | 11.2 | 24.4 | 37.0 | 37.0 | 35.8 | 35.8 | 5.0 | 5.0 |
| Total Split (s) | 11.0 | 59.0 | 11.0 | 59.0 | 45.0 | 45.0 | 45.0 | 45.0 | 5.0 | 5.0 |
| Total Split (%) | 9.2% | 49.2% | 9.2% | 49.2% | 37.5% | 37.5% | 37.5% | 37.5% | 4% | 4% |
| Yellow Time (s) | 3.7 | 3.7 | 3.7 | 3.7 | 3.3 | 3.3 | 3.3 | 3.3 | 2.0 | 2.0 |
| All-Red Time (s) | 3.7 | 2.5 | 2.5 | 3.7 | 3.7 | 3.7 | 2.5 | 2.5 | 0.0 | 0.0 |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | |
| Total Lost Time (s) | 7.4 | 6.2 | 6.2 | 7.4 | 7.0 | 7.0 | 5.8 | 5.8 | | |
| Lead/Lag | Lead | Lag | Lead | Lag | Lag | Lag | Lag | Lag | Lead | Lead |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Recall Mode | None | C-Max | None | C-Max | Max | Max | Max | Max | Min | Min |
| Act Effct Green (s) | 55.2 | 52.8 | 57.6 | 51.6 | 38.0 | 38.0 | 39.2 | 39.2 | | |
| Actuated g/C Ratio | 0.46 | 0.44 | 0.48 | 0.43 | 0.32 | 0.32 | 0.33 | 0.33 | | |
| v/c Ratio | 0.90 | 0.92 | 0.86 | 0.46 | 0.40 | 0.20 | 0.46 | 0.31 | | |
| Control Delay | 63.1 | 40.2 | 74.2 | 23.0 | 36.9 | 11.0 | 36.9 | 8.1 | | |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | |
| Total Delay | 63.1 | 40.2 | 74.2 | 23.0 | 36.9 | 11.0 | 36.9 | 8.1 | | |
| LOS | E | D | E | C | D | B | D | A | | |
| Approach Delay | | 42.5 | | 28.6 | | 24.9 | | 22.8 | | |
| Approach LOS | | D | | C | | C | | C | | |
| Queue Length 50th (m) | 27.3 | 154.5 | 13.2 | 57.1 | 22.8 | 4.4 | 33.1 | 3.5 | | |
| Queue Length 95th (m) | #62.5 | #178.3 | #40.6 | 83.9 | 40.9 | 17.2 | 54.8 | 19.3 | | |
| Internal Link Dist (m) | | 239.1 | | 369.5 | | 434.9 | | 268.8 | | |
| Turn Bay Length (m) | 70.0 | | 50.0 | | 20.0 | | 45.0 | | | |
| Base Capacity (vph) | 244 | 2107 | 128 | 1955 | 310 | 534 | 384 | 551 | | |
| 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 | 0.90 | 0.92 | 0.86 | 0.46 | 0.40 | 0.20 | 0.46 | 0.31 | | |

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 48 (40%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green
 Natural Cycle: 100
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.92
 Intersection Signal Delay: 35.8
 Intersection LOS: D
 Intersection Capacity Utilization 97.4%
 ICU Level of Service F
 Analysis Period (min) 15
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 3: Broadview Ave & Carling Ave



Lanes, Volumes, Timings
4: Clyde Ave & Doheny St/Existing Site Access

12/06/2022

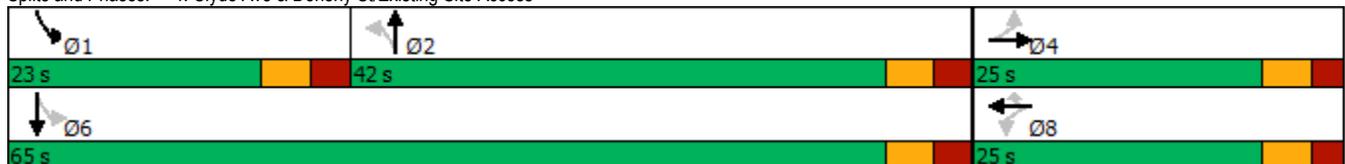


| Lane Group | EBL | EBT | WBL | WBT | WBR | NBL | NBT | SBL | SBT |
|------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Lane Configurations | | | | | | | | | |
| Traffic Volume (vph) | 34 | 2 | 8 | 3 | 5 | 91 | 298 | 38 | 315 |
| Future Volume (vph) | 34 | 2 | 8 | 3 | 5 | 91 | 298 | 38 | 315 |
| Lane Group Flow (vph) | 0 | 107 | 0 | 12 | 6 | 101 | 341 | 42 | 439 |
| Turn Type | Perm | NA | Perm | NA | Perm | Perm | NA | pm+pt | NA |
| Protected Phases | | 4 | | 8 | | | 2 | 1 | 6 |
| Permitted Phases | 4 | | 8 | | 8 | 2 | | 6 | |
| 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 | 10.0 | 10.0 | 5.0 | 10.0 |
| Minimum Split (s) | 24.6 | 24.6 | 24.6 | 24.6 | 24.6 | 29.0 | 29.0 | 11.0 | 29.0 |
| Total Split (s) | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 | 42.0 | 42.0 | 23.0 | 65.0 |
| Total Split (%) | 27.8% | 27.8% | 27.8% | 27.8% | 27.8% | 46.7% | 46.7% | 25.6% | 72.2% |
| Yellow Time (s) | 3.3 | 3.3 | 3.3 | 3.3 | 3.3 | 3.3 | 3.3 | 3.3 | 3.3 |
| All-Red Time (s) | 2.3 | 2.3 | 2.3 | 2.3 | 2.3 | 2.7 | 2.7 | 2.7 | 2.7 |
| Lost Time Adjust (s) | | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | | 5.6 | | 5.6 | 5.6 | 6.0 | 6.0 | 6.0 | 6.0 |
| Lead/Lag | | | | | | Lag | Lag | Lead | |
| Lead-Lag Optimize? | | | | | | Yes | Yes | Yes | |
| Recall Mode | None | None | None | None | None | Max | Max | None | Max |
| Act Effct Green (s) | | 11.8 | | 11.8 | 11.8 | 58.5 | 58.5 | 64.9 | 66.2 |
| Actuated g/C Ratio | | 0.14 | | 0.14 | 0.14 | 0.69 | 0.69 | 0.76 | 0.78 |
| v/c Ratio | | 0.42 | | 0.06 | 0.02 | 0.16 | 0.30 | 0.06 | 0.34 |
| Control Delay | | 19.8 | | 30.6 | 0.2 | 9.7 | 9.5 | 4.2 | 4.9 |
| Queue Delay | | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.3 |
| Total Delay | | 19.8 | | 30.6 | 0.2 | 9.7 | 9.5 | 4.2 | 5.2 |
| LOS | | B | | C | A | A | A | A | A |
| Approach Delay | | 19.8 | | 20.5 | | | 9.6 | | 5.1 |
| Approach LOS | | B | | C | | | A | | A |
| Queue Length 50th (m) | | 5.6 | | 1.7 | 0.0 | 6.6 | 24.9 | 1.4 | 17.8 |
| Queue Length 95th (m) | | 19.2 | | 6.0 | 0.0 | 18.6 | 53.9 | 5.5 | 44.5 |
| Internal Link Dist (m) | | 281.3 | | 151.2 | | | 265.7 | | 124.0 |
| Turn Bay Length (m) | | | | | 40.0 | 45.0 | | | |
| Base Capacity (vph) | | 373 | | 326 | 423 | 623 | 1146 | 830 | 1306 |
| Starvation Cap Reductn | | 0 | | 0 | 0 | 0 | 0 | 0 | 346 |
| Spillback Cap Reductn | | 0 | | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | | 0 | | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | | 0.29 | | 0.04 | 0.01 | 0.16 | 0.30 | 0.05 | 0.46 |

Intersection Summary

| | |
|---|------------------------|
| Cycle Length: 90 | |
| Actuated Cycle Length: 85 | |
| Natural Cycle: 65 | |
| Control Type: Actuated-Uncoordinated | |
| Maximum v/c Ratio: 0.42 | |
| Intersection Signal Delay: 8.7 | Intersection LOS: A |
| Intersection Capacity Utilization 59.0% | ICU Level of Service B |
| Analysis Period (min) 15 | |

Splits and Phases: 4: Clyde Ave & Doheny St/Existing Site Access



Lanes, Volumes, Timings
5: Saigon Ct & Carling Ave WB

12/06/2022



| Lane Group | WBL | WBT | NBL | NBT | SBT |
|------------------------|-------|-------|-------|-------|-------|
| Lane Configurations | | | | | |
| Traffic Volume (vph) | 29 | 952 | 22 | 52 | 26 |
| Future Volume (vph) | 29 | 952 | 22 | 52 | 26 |
| Lane Group Flow (vph) | 32 | 1122 | 0 | 82 | 39 |
| Turn Type | Perm | NA | Perm | NA | NA |
| Protected Phases | | 8 | | 2 | 6 |
| Permitted Phases | 8 | | 2 | | |
| Detector Phase | 8 | 8 | 2 | 2 | 6 |
| Switch Phase | | | | | |
| Minimum Initial (s) | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 |
| Minimum Split (s) | 29.7 | 29.7 | 26.7 | 26.7 | 26.7 |
| Total Split (s) | 85.0 | 85.0 | 35.0 | 35.0 | 35.0 |
| Total Split (%) | 70.8% | 70.8% | 29.2% | 29.2% | 29.2% |
| Yellow Time (s) | 3.7 | 3.7 | 3.3 | 3.3 | 3.3 |
| All-Red Time (s) | 2.0 | 2.0 | 2.4 | 2.4 | 2.4 |
| Lost Time Adjust (s) | 0.0 | 0.0 | | 0.0 | 0.0 |
| Total Lost Time (s) | 5.7 | 5.7 | | 5.7 | 5.7 |
| Lead/Lag | | | | | |
| Lead-Lag Optimize? | | | | | |
| Recall Mode | C-Max | C-Max | None | None | None |
| Act Effct Green (s) | 100.8 | 100.8 | | 12.1 | 12.1 |
| Actuated g/C Ratio | 0.84 | 0.84 | | 0.10 | 0.10 |
| v/c Ratio | 0.02 | 0.28 | | 0.52 | 0.21 |
| Control Delay | 2.8 | 3.0 | | 57.2 | 41.3 |
| Queue Delay | 0.0 | 0.0 | | 0.0 | 0.0 |
| Total Delay | 2.8 | 3.0 | | 57.3 | 41.3 |
| LOS | A | A | | E | D |
| Approach Delay | | 2.9 | | 57.3 | 41.3 |
| Approach LOS | | A | | E | D |
| Queue Length 50th (m) | 1.2 | 18.8 | | 16.0 | 6.4 |
| Queue Length 95th (m) | 3.6 | 28.7 | | 29.3 | 16.5 |
| Internal Link Dist (m) | | 298.8 | | 45.3 | 50.2 |
| Turn Bay Length (m) | | | | | |
| Base Capacity (vph) | 1423 | 3937 | | 386 | 428 |
| Starvation Cap Reductn | 0 | 0 | | 16 | 0 |
| Spillback Cap Reductn | 0 | 0 | | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | | 0 | 0 |
| Reduced v/c Ratio | 0.02 | 0.28 | | 0.22 | 0.09 |

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 53 (44%), Referenced to phase 8:WBTL, Start of Green
 Natural Cycle: 60
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.52
 Intersection Signal Delay: 7.6
 Intersection Capacity Utilization 41.2%
 Analysis Period (min) 15
 Intersection LOS: A
 ICU Level of Service A

Splits and Phases: 5: Saigon Ct & Carling Ave WB



Lanes, Volumes, Timings
6: Carling Ave EB & Saigon Ct

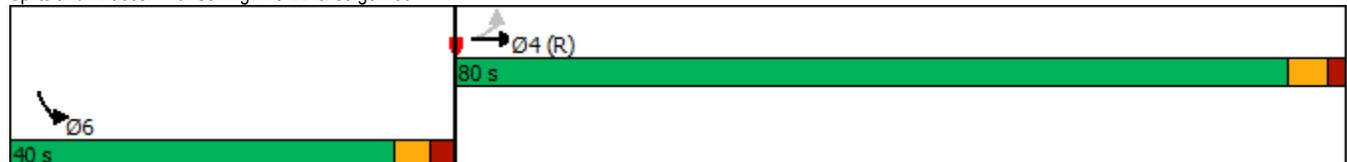
12/06/2022



| Lane Group | EBT | SBL |
|------------------------|-------|-------|
| Lane Configurations | ↕↕↕ | ↔↔ |
| Traffic Volume (vph) | 1801 | 42 |
| Future Volume (vph) | 1801 | 42 |
| Lane Group Flow (vph) | 2118 | 47 |
| Turn Type | NA | Prot |
| Protected Phases | 4 | 6 |
| Permitted Phases | | |
| Detector Phase | 4 | 6 |
| Switch Phase | | |
| Minimum Initial (s) | 10.0 | 5.0 |
| Minimum Split (s) | 15.4 | 22.6 |
| Total Split (s) | 80.0 | 40.0 |
| Total Split (%) | 66.7% | 33.3% |
| Yellow Time (s) | 3.7 | 3.3 |
| All-Red Time (s) | 1.7 | 2.3 |
| Lost Time Adjust (s) | 0.0 | 0.0 |
| Total Lost Time (s) | 5.4 | 5.6 |
| Lead/Lag | | |
| Lead-Lag Optimize? | | |
| Recall Mode | C-Max | None |
| Act Effct Green (s) | 105.2 | 7.1 |
| Actuated g/C Ratio | 0.88 | 0.06 |
| v/c Ratio | 0.50 | 0.24 |
| Control Delay | 1.3 | 56.4 |
| Queue Delay | 0.0 | 0.0 |
| Total Delay | 1.3 | 56.4 |
| LOS | A | E |
| Approach Delay | 1.3 | 56.4 |
| Approach LOS | A | E |
| Queue Length 50th (m) | 11.0 | 5.7 |
| Queue Length 95th (m) | 14.6 | 12.2 |
| Internal Link Dist (m) | 110.2 | 45.3 |
| Turn Bay Length (m) | | |
| Base Capacity (vph) | 4256 | 942 |
| Starvation Cap Reductn | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 |
| Storage Cap Reductn | 0 | 0 |
| Reduced v/c Ratio | 0.50 | 0.05 |

Intersection Summary
 Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 1 (1%), Referenced to phase 4:EBTL, Start of Green
 Natural Cycle: 60
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.50
 Intersection Signal Delay: 2.5
 Intersection Capacity Utilization 52.3%
 Analysis Period (min) 15
 Intersection LOS: A
 ICU Level of Service A

Splits and Phases: 6: Carling Ave EB & Saigon Ct



Lanes, Volumes, Timings
 7: Clyde Ave & Laperriere Ave

12/06/2022



| Lane Group | WBL | NBT | SBT |
|---|------|------------------------|------|
| Lane Configurations | | | |
| Traffic Volume (vph) | 128 | 212 | 189 |
| Future Volume (vph) | 128 | 212 | 189 |
| Lane Group Flow (vph) | 403 | 427 | 420 |
| Sign Control | Stop | Stop | Stop |
| Intersection Summary | | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization 77.6% | | ICU Level of Service D | |
| Analysis Period (min) 15 | | | |

HCM Unsignalized Intersection Capacity Analysis
 7: Clyde Ave & Laperriere Ave

12/06/2022



| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|-----------------------------------|-------|-------|-------|----------------------|------|------|
| Lane Configurations | | | | | | |
| Sign Control | Stop | | Stop | | | Stop |
| Traffic Volume (vph) | 128 | 235 | 212 | 172 | 189 | 189 |
| Future Volume (vph) | 128 | 235 | 212 | 172 | 189 | 189 |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Hourly flow rate (vph) | 142 | 261 | 236 | 191 | 210 | 210 |
| Direction, Lane # | WB 1 | NB 1 | SB 1 | | | |
| Volume Total (vph) | 403 | 427 | 420 | | | |
| Volume Left (vph) | 142 | 0 | 210 | | | |
| Volume Right (vph) | 261 | 191 | 0 | | | |
| Hadj (s) | -0.27 | -0.11 | 0.19 | | | |
| Departure Headway (s) | 6.0 | 5.9 | 6.2 | | | |
| Degree Utilization, x | 0.67 | 0.70 | 0.72 | | | |
| Capacity (veh/h) | 563 | 586 | 555 | | | |
| Control Delay (s) | 20.4 | 21.4 | 23.4 | | | |
| Approach Delay (s) | 20.4 | 21.4 | 23.4 | | | |
| Approach LOS | C | C | C | | | |
| Intersection Summary | | | | | | |
| Delay | | | 21.8 | | | |
| Level of Service | | | C | | | |
| Intersection Capacity Utilization | | | 77.6% | ICU Level of Service | D | |
| Analysis Period (min) | | | 15 | | | |

Lanes, Volumes, Timings
 8: Clyde Ave & Woodward Dr

12/06/2022



| Lane Group | EBL | EBR | NBT | SBT | SBR |
|---|------|-----|------------------------|------|-----|
| Lane Configurations | | | | | |
| Traffic Volume (vph) | 346 | 8 | 38 | 47 | 270 |
| Future Volume (vph) | 346 | 8 | 38 | 47 | 270 |
| Lane Group Flow (vph) | 384 | 9 | 55 | 52 | 300 |
| Sign Control | Free | | Stop | Stop | |
| Intersection Summary | | | | | |
| Control Type: Unsignalized | | | | | |
| Intersection Capacity Utilization 36.4% | | | ICU Level of Service A | | |
| Analysis Period (min) 15 | | | | | |

HCM Unsignalized Intersection Capacity Analysis
 8: Clyde Ave & Woodward Dr

12/06/2022



| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|-----------------------------------|-------------|-------------|-------------|----------------------|------|------|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 346 | 8 | 12 | 38 | 47 | 270 |
| Future Volume (Veh/h) | 346 | 8 | 12 | 38 | 47 | 270 |
| Sign Control | Free | | | Stop | Stop | |
| Grade | 0% | | | 0% | 0% | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Hourly flow rate (vph) | 384 | 9 | 13 | 42 | 52 | 300 |
| Pedestrians | | | | | | |
| Lane Width (m) | | | | | | |
| Walking Speed (m/s) | | | | | | |
| Percent Blockage | | | | | | |
| Right turn flare (veh) | 3 | | | | | |
| Median type | None | | | | | |
| Median storage (veh) | | | | | | |
| Upstream signal (m) | | | | | | |
| pX, platoon unblocked | | | | | | |
| vC, conflicting volume | 0 | | 794 | 768 | 768 | 0 |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | 0 | | 794 | 768 | 768 | 0 |
| tC, single (s) | 4.1 | | 7.1 | 6.5 | 6.5 | 6.2 |
| tC, 2 stage (s) | | | | | | |
| tF (s) | 2.2 | | 3.5 | 4.0 | 4.0 | 3.3 |
| p0 queue free % | 76 | | 92 | 83 | 79 | 72 |
| cM capacity (veh/h) | 1623 | | 154 | 253 | 253 | 1085 |
| Direction, Lane # | EB 1 | EB 2 | NB 1 | SB 1 | | |
| Volume Total | 384 | 9 | 55 | 352 | | |
| Volume Left | 384 | 0 | 13 | 0 | | |
| Volume Right | 0 | 9 | 0 | 300 | | |
| cSH | 1623 | 1700 | 220 | 1273 | | |
| Volume to Capacity | 0.24 | 0.01 | 0.25 | 0.28 | | |
| Queue Length 95th (m) | 7.0 | 0.0 | 7.3 | 8.6 | | |
| Control Delay (s) | 7.9 | 0.0 | 26.8 | 11.5 | | |
| Lane LOS | A | | D | B | | |
| Approach Delay (s) | 7.7 | | 26.8 | 11.5 | | |
| Approach LOS | | | D | B | | |
| Intersection Summary | | | | | | |
| Average Delay | | | 10.7 | | | |
| Intersection Capacity Utilization | | | 36.4% | ICU Level of Service | A | |
| Analysis Period (min) | | | 15 | | | |

Lanes, Volumes, Timings
1: Churchill Ave & Carling Ave

12/06/2022

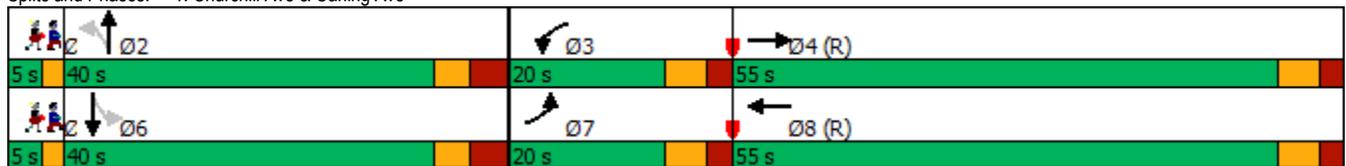


| Lane Group | EBL | EBT | WBL | WBT | NBL | NBT | SBL | SBT | Ø1 | Ø5 |
|------------------------|--------|-------|-------|--------|-------|-------|-------|-------|------|------|
| Lane Configurations | | | | | | | | | | |
| Traffic Volume (vph) | 245 | 892 | 37 | 1782 | 96 | 33 | 182 | 7 | | |
| Future Volume (vph) | 245 | 892 | 37 | 1782 | 96 | 33 | 182 | 7 | | |
| Lane Group Flow (vph) | 272 | 1011 | 41 | 2222 | 107 | 66 | 202 | 307 | | |
| Turn Type | Prot | NA | Prot | NA | Perm | NA | Perm | NA | | |
| Protected Phases | 7 | 4 | 3 | 8 | | 2 | | 6 | 1 | 5 |
| Permitted Phases | | | | | 2 | | 6 | | | |
| Detector Phase | 7 | 4 | 3 | 8 | 2 | 2 | 6 | 6 | | |
| Switch Phase | | | | | | | | | | |
| Minimum Initial (s) | 5.0 | 10.0 | 5.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 3.0 | 3.0 |
| Minimum Split (s) | 11.1 | 34.1 | 11.1 | 34.1 | 39.8 | 39.8 | 39.8 | 39.8 | 5.0 | 5.0 |
| Total Split (s) | 20.0 | 55.0 | 20.0 | 55.0 | 40.0 | 40.0 | 40.0 | 40.0 | 5.0 | 5.0 |
| Total Split (%) | 16.7% | 45.8% | 16.7% | 45.8% | 33.3% | 33.3% | 33.3% | 33.3% | 4% | 4% |
| Yellow Time (s) | 3.7 | 3.7 | 3.7 | 3.7 | 3.3 | 3.3 | 3.3 | 3.3 | 2.0 | 2.0 |
| All-Red Time (s) | 2.4 | 2.4 | 2.4 | 2.4 | 3.5 | 3.5 | 3.5 | 3.5 | 0.0 | 0.0 |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | |
| Total Lost Time (s) | 6.1 | 6.1 | 6.1 | 6.1 | 6.8 | 6.8 | 6.8 | 6.8 | | |
| Lead/Lag | Lead | Lag | Lead | Lag | Lag | Lag | Lag | Lag | Lead | Lead |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Recall Mode | None | C-Max | None | C-Max | Max | Max | Max | Max | None | None |
| Act Effct Green (s) | 13.9 | 56.8 | 8.3 | 48.9 | 38.2 | 38.2 | 38.2 | 38.2 | | |
| Actuated g/C Ratio | 0.12 | 0.47 | 0.07 | 0.41 | 0.32 | 0.32 | 0.32 | 0.32 | | |
| v/c Ratio | 1.39 | 0.44 | 0.35 | 1.14 | 0.45 | 0.12 | 0.50 | 0.47 | | |
| Control Delay | 246.2 | 14.7 | 71.9 | 97.9 | 40.1 | 18.5 | 38.5 | 7.4 | | |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | |
| Total Delay | 246.2 | 14.7 | 71.9 | 97.9 | 40.1 | 18.5 | 38.5 | 7.4 | | |
| LOS | F | B | E | F | D | B | D | A | | |
| Approach Delay | | 63.7 | | 97.4 | | 31.9 | | 19.8 | | |
| Approach LOS | | E | | F | | C | | B | | |
| Queue Length 50th (m) | ~88.0 | 25.6 | 8.5 | ~223.3 | 20.0 | 6.1 | 38.5 | 4.2 | | |
| Queue Length 95th (m) | #142.2 | 39.5 | m17.5 | #252.4 | 38.0 | 16.3 | 62.2 | 26.0 | | |
| Internal Link Dist (m) | | 273.9 | | 176.6 | | 177.0 | | 412.2 | | |
| Turn Bay Length (m) | 65.0 | | 65.0 | | 20.0 | | 20.0 | | | |
| Base Capacity (vph) | 196 | 2296 | 196 | 1954 | 236 | 544 | 401 | 658 | | |
| 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 | 1.39 | 0.44 | 0.21 | 1.14 | 0.45 | 0.12 | 0.50 | 0.47 | | |

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 92 (77%), Referenced to phase 4:EBT and 8:WBT, Start of Green
 Natural Cycle: 150
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.39
 Intersection Signal Delay: 75.1
 Intersection Capacity Utilization 115.6%
 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.
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: Churchill Ave & Carling Ave



Lanes, Volumes, Timings
2: Clyde Ave/Cole Ave & Carling Ave

12/06/2022



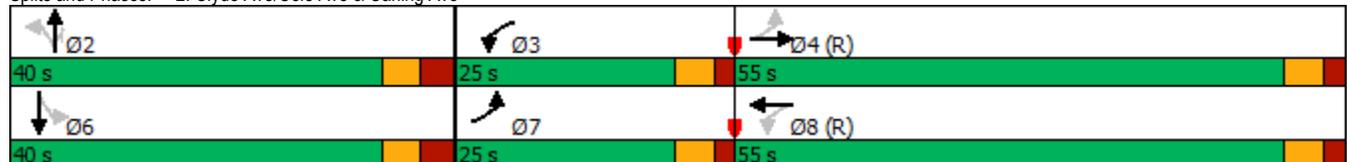
| Lane Group | EBL | EBT | WBL | WBT | NBL | NBT | NBR | SBL | SBT |
|------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Lane Configurations | | | | | | | | | |
| Traffic Volume (vph) | 74 | 890 | 216 | 1866 | 126 | 87 | 155 | 22 | 54 |
| Future Volume (vph) | 74 | 890 | 216 | 1866 | 126 | 87 | 155 | 22 | 54 |
| Lane Group Flow (vph) | 82 | 1135 | 240 | 2124 | 140 | 97 | 172 | 24 | 129 |
| Turn Type | pm+pt | NA | pm+pt | NA | Perm | NA | Perm | Perm | NA |
| Protected Phases | 7 | 4 | 3 | 8 | | 2 | | | 6 |
| Permitted Phases | 4 | | 8 | | 2 | | 2 | 6 | |
| Detector Phase | 7 | 4 | 3 | 8 | 2 | 2 | 2 | 6 | 6 |
| Switch Phase | | | | | | | | | |
| Minimum Initial (s) | 5.0 | 10.0 | 5.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 |
| Minimum Split (s) | 10.4 | 30.8 | 10.4 | 30.8 | 36.6 | 36.6 | 36.6 | 36.6 | 36.6 |
| Total Split (s) | 25.0 | 55.0 | 25.0 | 55.0 | 40.0 | 40.0 | 40.0 | 40.0 | 40.0 |
| Total Split (%) | 20.8% | 45.8% | 20.8% | 45.8% | 33.3% | 33.3% | 33.3% | 33.3% | 33.3% |
| Yellow Time (s) | 3.7 | 3.7 | 3.7 | 3.7 | 3.3 | 3.3 | 3.3 | 3.3 | 3.3 |
| All-Red Time (s) | 1.7 | 2.1 | 1.7 | 2.1 | 3.3 | 3.3 | 3.3 | 3.3 | 3.3 |
| 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) | 5.4 | 5.8 | 5.4 | 5.8 | 6.6 | 6.6 | 6.6 | 6.6 | 6.6 |
| Lead/Lag | Lead | Lag | Lead | Lag | | | | | |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | | | | | |
| Recall Mode | None | C-Max | None | C-Max | None | None | None | None | None |
| Act Effct Green (s) | 75.1 | 67.0 | 86.4 | 75.4 | 21.3 | 21.3 | 21.3 | 21.3 | 21.3 |
| Actuated g/C Ratio | 0.63 | 0.56 | 0.72 | 0.63 | 0.18 | 0.18 | 0.18 | 0.18 | 0.18 |
| v/c Ratio | 0.49 | 0.43 | 0.60 | 0.70 | 0.69 | 0.31 | 0.48 | 0.11 | 0.39 |
| Control Delay | 44.2 | 6.8 | 24.5 | 17.5 | 62.6 | 43.0 | 17.6 | 38.5 | 28.4 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 44.2 | 6.8 | 24.5 | 17.5 | 62.6 | 43.0 | 17.6 | 38.5 | 28.4 |
| LOS | D | A | C | B | E | D | B | D | C |
| Approach Delay | | 9.3 | | 18.2 | | 39.0 | | | 30.0 |
| Approach LOS | | A | | B | | D | | | C |
| Queue Length 50th (m) | 10.7 | 15.8 | 33.7 | 77.6 | 31.9 | 20.5 | 10.3 | 4.9 | 17.0 |
| Queue Length 95th (m) | 27.4 | 19.3 | m33.3 | m75.7 | 49.0 | 32.7 | 28.1 | 11.4 | 31.8 |
| Internal Link Dist (m) | | 369.5 | | 273.9 | | 124.0 | | | 136.4 |
| Turn Bay Length (m) | 20.0 | | 120.0 | | 95.0 | | 5.0 | 20.0 | |
| Base Capacity (vph) | 334 | 2668 | 466 | 3043 | 316 | 496 | 496 | 339 | 486 |
| 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 | 0.25 | 0.43 | 0.52 | 0.70 | 0.44 | 0.20 | 0.35 | 0.07 | 0.27 |

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 93 (78%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green
 Natural Cycle: 90
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.70
 Intersection Signal Delay: 18.1
 Intersection Capacity Utilization 76.9%
 Analysis Period (min) 15
 m Volume for 95th percentile queue is metered by upstream signal.

Intersection LOS: B
 ICU Level of Service D

Splits and Phases: 2: Clyde Ave/Cole Ave & Carling Ave



Lanes, Volumes, Timings
3: Broadview Ave & Carling Ave

12/06/2022



| Lane Group | EBL | EBT | WBL | WBT | NBL | NBT | SBL | SBT | Ø1 | Ø5 |
|------------------------|-------|-------|-------|--------|-------|-------|-------|-------|------|------|
| Lane Configurations | | | | | | | | | | |
| Traffic Volume (vph) | 94 | 1017 | 67 | 1938 | 181 | 35 | 67 | 23 | | |
| Future Volume (vph) | 94 | 1017 | 67 | 1938 | 181 | 35 | 67 | 23 | | |
| Lane Group Flow (vph) | 104 | 1164 | 74 | 2227 | 201 | 76 | 74 | 193 | | |
| Turn Type | pm+pt | NA | pm+pt | NA | Perm | NA | Perm | NA | | |
| Protected Phases | 7 | 4 | 3 | 8 | | 2 | | 6 | 1 | 5 |
| Permitted Phases | 4 | | 8 | | 2 | | 6 | | | |
| Detector Phase | 7 | 4 | 3 | 8 | 2 | 2 | 6 | 6 | | |
| Switch Phase | | | | | | | | | | |
| Minimum Initial (s) | 5.0 | 10.0 | 5.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 3.0 | 3.0 |
| Minimum Split (s) | 12.4 | 23.2 | 11.2 | 24.4 | 37.0 | 37.0 | 35.8 | 35.8 | 5.0 | 5.0 |
| Total Split (s) | 11.0 | 59.0 | 11.0 | 59.0 | 45.0 | 45.0 | 45.0 | 45.0 | 5.0 | 5.0 |
| Total Split (%) | 9.2% | 49.2% | 9.2% | 49.2% | 37.5% | 37.5% | 37.5% | 37.5% | 4% | 4% |
| Yellow Time (s) | 3.7 | 3.7 | 3.7 | 3.7 | 3.3 | 3.3 | 3.3 | 3.3 | 2.0 | 2.0 |
| All-Red Time (s) | 3.7 | 2.5 | 2.5 | 3.7 | 3.7 | 3.7 | 2.5 | 2.5 | 0.0 | 0.0 |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | |
| Total Lost Time (s) | 7.4 | 6.2 | 6.2 | 7.4 | 7.0 | 7.0 | 5.8 | 5.8 | | |
| Lead/Lag | Lead | Lag | Lead | Lag | Lag | Lag | Lag | Lag | Lead | Lead |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Recall Mode | None | C-Max | None | C-Max | Max | Max | Max | Max | Min | Min |
| Act Effct Green (s) | 56.7 | 55.0 | 57.6 | 51.6 | 38.0 | 38.0 | 39.2 | 39.2 | | |
| Actuated g/C Ratio | 0.47 | 0.46 | 0.48 | 0.43 | 0.32 | 0.32 | 0.33 | 0.33 | | |
| v/c Ratio | 0.95 | 0.52 | 0.37 | 1.07 | 0.64 | 0.14 | 0.18 | 0.34 | | |
| Control Delay | 99.9 | 24.6 | 25.9 | 81.3 | 46.2 | 17.3 | 30.5 | 13.2 | | |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | |
| Total Delay | 99.9 | 24.6 | 25.9 | 81.3 | 46.2 | 17.3 | 30.5 | 13.2 | | |
| LOS | F | C | C | F | D | B | C | B | | |
| Approach Delay | | 30.8 | | 79.5 | | 38.2 | | 18.0 | | |
| Approach LOS | | C | | E | | D | | B | | |
| Queue Length 50th (m) | 12.1 | 72.1 | 11.3 | ~219.4 | 40.5 | 6.4 | 12.4 | 11.4 | | |
| Queue Length 95th (m) | #38.7 | 86.0 | m16.3 | #237.0 | 67.8 | 17.6 | 24.3 | 29.8 | | |
| Internal Link Dist (m) | | 239.1 | | 369.5 | | 434.9 | | 268.8 | | |
| Turn Bay Length (m) | 70.0 | | 50.0 | | 20.0 | | 45.0 | | | |
| Base Capacity (vph) | 109 | 2221 | 201 | 2079 | 313 | 541 | 405 | 568 | | |
| 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 | 0.95 | 0.52 | 0.37 | 1.07 | 0.64 | 0.14 | 0.18 | 0.34 | | |

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 77 (64%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green

Natural Cycle: 110

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.07

Intersection Signal Delay: 57.7

Intersection LOS: E

Intersection Capacity Utilization 105.3%

ICU Level of Service G

Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.

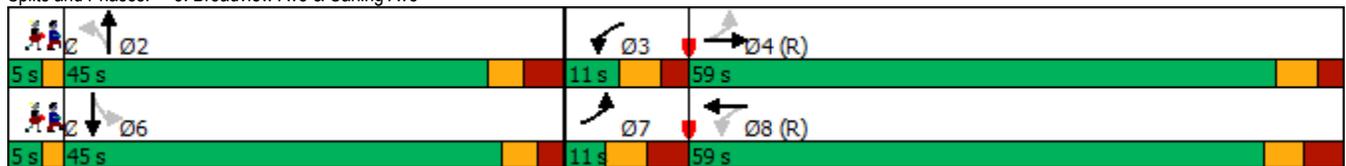
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

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

Splits and Phases: 3: Broadview Ave & Carling Ave



Existing PM

Synchro 11 Report

Lanes, Volumes, Timings
 4: Clyde Ave & Doheny St/Existing Site Access

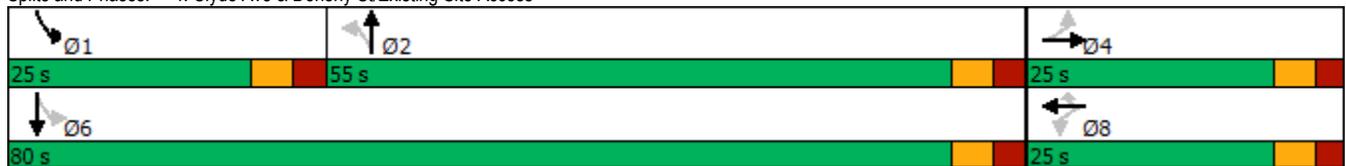
12/06/2022



| Lane Group | EBL | EBT | WBL | WBT | WBR | NBL | NBT | SBL | SBT |
|------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Lane Configurations | | | | | | | | | |
| Traffic Volume (vph) | 24 | 5 | 27 | 9 | 20 | 32 | 303 | 79 | 273 |
| Future Volume (vph) | 24 | 5 | 27 | 9 | 20 | 32 | 303 | 79 | 273 |
| Lane Group Flow (vph) | 0 | 91 | 0 | 40 | 22 | 36 | 359 | 88 | 364 |
| Turn Type | Perm | NA | Perm | NA | Perm | Perm | NA | pm+pt | NA |
| Protected Phases | | 4 | | 8 | | | 2 | 1 | 6 |
| Permitted Phases | 4 | | 8 | | 8 | 2 | | 6 | |
| 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 | 10.0 | 10.0 | 5.0 | 10.0 |
| Minimum Split (s) | 24.6 | 24.6 | 24.6 | 24.6 | 24.6 | 29.0 | 29.0 | 11.0 | 29.0 |
| Total Split (s) | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 | 55.0 | 55.0 | 25.0 | 80.0 |
| Total Split (%) | 23.8% | 23.8% | 23.8% | 23.8% | 23.8% | 52.4% | 52.4% | 23.8% | 76.2% |
| Yellow Time (s) | 3.3 | 3.3 | 3.3 | 3.3 | 3.3 | 3.3 | 3.3 | 3.3 | 3.3 |
| All-Red Time (s) | 2.3 | 2.3 | 2.3 | 2.3 | 2.3 | 2.7 | 2.7 | 2.7 | 2.7 |
| Lost Time Adjust (s) | | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | | 5.6 | | 5.6 | 5.6 | 6.0 | 6.0 | 6.0 | 6.0 |
| Lead/Lag | | | | | | Lag | Lag | Lead | |
| Lead-Lag Optimize? | | | | | | Yes | Yes | Yes | |
| Recall Mode | None | None | None | None | None | Max | Max | None | Max |
| Act Effct Green (s) | | 11.7 | | 11.7 | 11.7 | 68.0 | 68.0 | 77.2 | 78.4 |
| Actuated g/C Ratio | | 0.12 | | 0.12 | 0.12 | 0.70 | 0.70 | 0.79 | 0.81 |
| v/c Ratio | | 0.41 | | 0.26 | 0.08 | 0.05 | 0.30 | 0.12 | 0.27 |
| Control Delay | | 22.9 | | 42.9 | 0.7 | 8.4 | 9.1 | 3.7 | 3.9 |
| Queue Delay | | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | | 22.9 | | 42.9 | 0.7 | 8.4 | 9.1 | 3.7 | 3.9 |
| LOS | | C | | D | A | A | A | A | A |
| Approach Delay | | 22.9 | | 27.9 | | | 9.1 | | 3.9 |
| Approach LOS | | C | | C | | | A | | A |
| Queue Length 50th (m) | | 5.7 | | 6.9 | 0.0 | 2.2 | 26.7 | 3.1 | 14.2 |
| Queue Length 95th (m) | | 19.5 | | 16.5 | 0.0 | 7.7 | 55.9 | 9.3 | 34.2 |
| Internal Link Dist (m) | | 281.3 | | 151.2 | | | 265.7 | | 124.0 |
| Turn Bay Length (m) | | | | | 40.0 | 45.0 | | | |
| Base Capacity (vph) | | 334 | | 257 | 370 | 674 | 1200 | 843 | 1356 |
| 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 | | 0.27 | | 0.16 | 0.06 | 0.05 | 0.30 | 0.10 | 0.27 |

| Intersection Summary | |
|---|------------------------|
| Cycle Length: 105 | |
| Actuated Cycle Length: 97.3 | |
| Natural Cycle: 65 | |
| Control Type: Actuated-Uncoordinated | |
| Maximum v/c Ratio: 0.41 | |
| Intersection Signal Delay: 9.1 | Intersection LOS: A |
| Intersection Capacity Utilization 53.9% | ICU Level of Service A |
| Analysis Period (min) 15 | |

Splits and Phases: 4: Clyde Ave & Doheny St/Existing Site Access



Lanes, Volumes, Timings
5: Saigon Ct & Carling Ave WB

12/06/2022



| Lane Group | WBL | WBT | NBL | NBT | SBT |
|------------------------|-------|-------|-------|-------|-------|
| Lane Configurations | | | | | |
| Traffic Volume (vph) | 32 | 1927 | 37 | 9 | 87 |
| Future Volume (vph) | 32 | 1927 | 37 | 9 | 87 |
| Lane Group Flow (vph) | 36 | 2154 | 0 | 51 | 114 |
| Turn Type | Perm | NA | Perm | NA | NA |
| Protected Phases | | 8 | | 2 | 6 |
| Permitted Phases | 8 | | 2 | | |
| Detector Phase | 8 | 8 | 2 | 2 | 6 |
| Switch Phase | | | | | |
| Minimum Initial (s) | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 |
| Minimum Split (s) | 29.7 | 29.7 | 26.7 | 26.7 | 26.7 |
| Total Split (s) | 90.0 | 90.0 | 30.0 | 30.0 | 30.0 |
| Total Split (%) | 75.0% | 75.0% | 25.0% | 25.0% | 25.0% |
| Yellow Time (s) | 3.7 | 3.7 | 3.3 | 3.3 | 3.3 |
| All-Red Time (s) | 2.0 | 2.0 | 2.4 | 2.4 | 2.4 |
| Lost Time Adjust (s) | 0.0 | 0.0 | | 0.0 | 0.0 |
| Total Lost Time (s) | 5.7 | 5.7 | | 5.7 | 5.7 |
| Lead/Lag | | | | | |
| Lead-Lag Optimize? | | | | | |
| Recall Mode | C-Max | C-Max | None | None | None |
| Act Effct Green (s) | 94.8 | 94.8 | | 13.8 | 13.8 |
| Actuated g/C Ratio | 0.79 | 0.79 | | 0.12 | 0.12 |
| v/c Ratio | 0.03 | 0.56 | | 0.41 | 0.55 |
| Control Delay | 3.5 | 5.8 | | 41.4 | 56.4 |
| Queue Delay | 0.0 | 0.0 | | 0.0 | 0.0 |
| Total Delay | 3.5 | 5.8 | | 41.4 | 56.4 |
| LOS | A | A | | D | E |
| Approach Delay | | 5.8 | | 41.4 | 56.4 |
| Approach LOS | | A | | D | E |
| Queue Length 50th (m) | 1.4 | 54.1 | | 9.1 | 24.4 |
| Queue Length 95th (m) | 4.8 | 90.0 | | 20.9 | 40.0 |
| Internal Link Dist (m) | | 298.8 | | 45.3 | 50.2 |
| Turn Bay Length (m) | | | | | |
| Base Capacity (vph) | 1332 | 3842 | | 220 | 358 |
| 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 | 0.03 | 0.56 | | 0.23 | 0.32 |

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 62 (52%), Referenced to phase 8:WBTL, Start of Green
 Natural Cycle: 60
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.56
 Intersection Signal Delay: 9.0
 Intersection Capacity Utilization 60.0%
 Analysis Period (min) 15
 Intersection LOS: A
 ICU Level of Service B

Splits and Phases: 5: Saigon Ct & Carling Ave WB



Lanes, Volumes, Timings
6: Carling Ave EB & Saigon Ct

12/06/2022

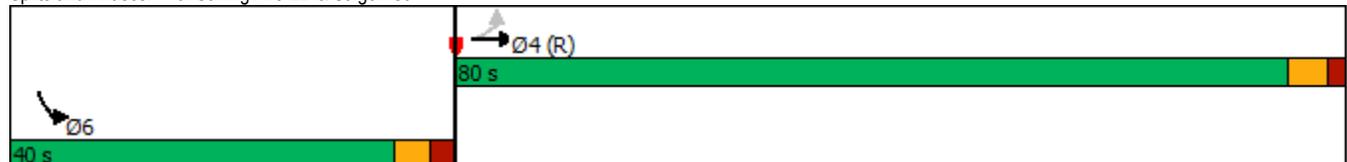


| Lane Group | EBT | SBL |
|------------------------|-------|-------|
| Lane Configurations | ↑↑↑ | ↑↑ |
| Traffic Volume (vph) | 1135 | 119 |
| Future Volume (vph) | 1135 | 119 |
| Lane Group Flow (vph) | 1311 | 132 |
| Turn Type | NA | Prot |
| Protected Phases | 4 | 6 |
| Permitted Phases | | |
| Detector Phase | 4 | 6 |
| Switch Phase | | |
| Minimum Initial (s) | 10.0 | 5.0 |
| Minimum Split (s) | 15.4 | 22.6 |
| Total Split (s) | 80.0 | 40.0 |
| Total Split (%) | 66.7% | 33.3% |
| Yellow Time (s) | 3.7 | 3.3 |
| All-Red Time (s) | 1.7 | 2.3 |
| Lost Time Adjust (s) | 0.0 | 0.0 |
| Total Lost Time (s) | 5.4 | 5.6 |
| Lead/Lag | | |
| Lead-Lag Optimize? | | |
| Recall Mode | C-Max | None |
| Act Effct Green (s) | 98.8 | 10.2 |
| Actuated g/C Ratio | 0.82 | 0.08 |
| v/c Ratio | 0.33 | 0.47 |
| Control Delay | 1.3 | 38.6 |
| Queue Delay | 0.0 | 0.0 |
| Total Delay | 1.3 | 38.6 |
| LOS | A | D |
| Approach Delay | 1.3 | 38.6 |
| Approach LOS | A | D |
| Queue Length 50th (m) | 6.8 | 16.8 |
| Queue Length 95th (m) | 13.5 | 27.0 |
| Internal Link Dist (m) | 110.2 | 45.3 |
| Turn Bay Length (m) | | |
| Base Capacity (vph) | 4002 | 942 |
| Starvation Cap Reductn | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 |
| Storage Cap Reductn | 0 | 0 |
| Reduced v/c Ratio | 0.33 | 0.14 |

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 105 (88%), Referenced to phase 4:EBTL, Start of Green
 Natural Cycle: 45
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.47
 Intersection Signal Delay: 4.7
 Intersection Capacity Utilization 37.4%
 Analysis Period (min) 15
 Intersection LOS: A
 ICU Level of Service A

Splits and Phases: 6: Carling Ave EB & Saigon Ct



Lanes, Volumes, Timings
 7: Clyde Ave & Laperriere Ave

12/06/2022



| Lane Group | WBL | NBT | SBT |
|---|------|------------------------|------|
| Lane Configurations | | | |
| Traffic Volume (vph) | 249 | 193 | 246 |
| Future Volume (vph) | 249 | 193 | 246 |
| Lane Group Flow (vph) | 487 | 395 | 432 |
| Sign Control | Stop | Stop | Stop |
| Intersection Summary | | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization 80.6% | | ICU Level of Service D | |
| Analysis Period (min) 15 | | | |

HCM Unsignalized Intersection Capacity Analysis
 7: Clyde Ave & Laperriere Ave

12/06/2022



| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|-----------------------------------|-------|-------|-------|----------------------|------|------|
| Lane Configurations | | | | | | |
| Sign Control | Stop | | Stop | | | Stop |
| Traffic Volume (vph) | 249 | 189 | 193 | 163 | 143 | 246 |
| Future Volume (vph) | 249 | 189 | 193 | 163 | 143 | 246 |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Hourly flow rate (vph) | 277 | 210 | 214 | 181 | 159 | 273 |
| Direction, Lane # | WB 1 | NB 1 | SB 1 | | | |
| Volume Total (vph) | 487 | 395 | 432 | | | |
| Volume Left (vph) | 277 | 0 | 159 | | | |
| Volume Right (vph) | 210 | 181 | 0 | | | |
| Hadj (s) | -0.09 | -0.16 | 0.16 | | | |
| Departure Headway (s) | 6.3 | 6.3 | 6.6 | | | |
| Degree Utilization, x | 0.85 | 0.70 | 0.79 | | | |
| Capacity (veh/h) | 556 | 545 | 529 | | | |
| Control Delay (s) | 35.3 | 22.5 | 29.6 | | | |
| Approach Delay (s) | 35.3 | 22.5 | 29.6 | | | |
| Approach LOS | E | C | D | | | |
| Intersection Summary | | | | | | |
| Delay | | | 29.6 | | | |
| Level of Service | | | D | | | |
| Intersection Capacity Utilization | | | 80.6% | ICU Level of Service | D | |
| Analysis Period (min) | | | 15 | | | |

Lanes, Volumes, Timings
 8: Clyde Ave & Woodward Dr

12/06/2022



| Lane Group | EBL | EBR | NBT | SBT | SBR |
|---|------|-----|------------------------|------|-----|
| Lane Configurations | | | | | |
| Traffic Volume (vph) | 304 | 17 | 52 | 18 | 479 |
| Future Volume (vph) | 304 | 17 | 52 | 18 | 479 |
| Lane Group Flow (vph) | 338 | 19 | 81 | 20 | 532 |
| Sign Control | Free | | Stop | Stop | |
| Intersection Summary | | | | | |
| Control Type: Unsignalized | | | | | |
| Intersection Capacity Utilization 42.1% | | | ICU Level of Service A | | |
| Analysis Period (min) 15 | | | | | |

HCM Unsignalized Intersection Capacity Analysis
 8: Clyde Ave & Woodward Dr

12/06/2022



| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|-----------------------------------|-------------|-------------|-------------|----------------------|------|------|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 304 | 17 | 21 | 52 | 18 | 479 |
| Future Volume (Veh/h) | 304 | 17 | 21 | 52 | 18 | 479 |
| Sign Control | Free | | | Stop | Stop | |
| Grade | 0% | | | 0% | 0% | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Hourly flow rate (vph) | 338 | 19 | 23 | 58 | 20 | 532 |
| Pedestrians | | | | | | |
| Lane Width (m) | | | | | | |
| Walking Speed (m/s) | | | | | | |
| Percent Blockage | | | | | | |
| Right turn flare (veh) | 3 | | | | | |
| Median type | None | | | | | |
| Median storage (veh) | | | | | | |
| Upstream signal (m) | | | | | | |
| pX, platoon unblocked | | | | | | |
| vC, conflicting volume | 0 | | 686 | 676 | 676 | 0 |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | 0 | | 686 | 676 | 676 | 0 |
| tC, single (s) | 4.1 | | 7.1 | 6.5 | 6.5 | 6.2 |
| tC, 2 stage (s) | | | | | | |
| tF (s) | 2.2 | | 3.5 | 4.0 | 4.0 | 3.3 |
| p0 queue free % | 79 | | 84 | 80 | 93 | 51 |
| cM capacity (veh/h) | 1623 | | 147 | 297 | 297 | 1085 |
| Direction, Lane # | EB 1 | EB 2 | NB 1 | SB 1 | | |
| Volume Total | 338 | 19 | 81 | 552 | | |
| Volume Left | 338 | 0 | 23 | 0 | | |
| Volume Right | 0 | 19 | 0 | 532 | | |
| cSH | 1623 | 1700 | 230 | 1126 | | |
| Volume to Capacity | 0.21 | 0.01 | 0.35 | 0.49 | | |
| Queue Length 95th (m) | 6.0 | 0.0 | 11.4 | 21.1 | | |
| Control Delay (s) | 7.8 | 0.0 | 28.9 | 11.7 | | |
| Lane LOS | A | | D | B | | |
| Approach Delay (s) | 7.4 | | 28.9 | 11.7 | | |
| Approach LOS | | | D | B | | |
| Intersection Summary | | | | | | |
| Average Delay | | | 11.6 | | | |
| Intersection Capacity Utilization | | | 42.1% | ICU Level of Service | A | |
| Analysis Period (min) | | | 15 | | | |

Total Future Background 2026

Lanes, Volumes, Timings
1: Churchill Ave & Carling Ave

12/06/2022

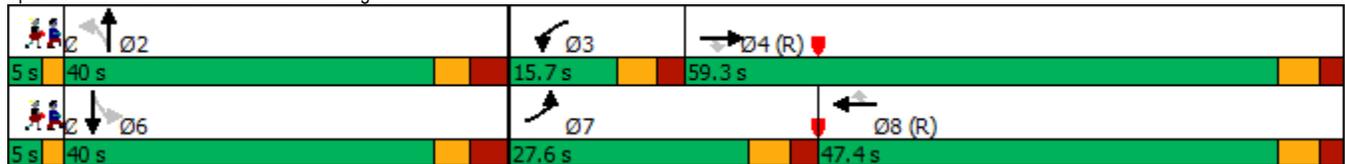


| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | SBL | SBT | Ø1 | Ø5 |
|------------------------|-------|---------|-------|-------|-------|-------|-------|-------|--------|-------|------|------|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 175 | 1599 | 104 | 135 | 748 | 154 | 29 | 17 | 347 | 35 | | |
| Future Volume (vph) | 175 | 1599 | 104 | 135 | 748 | 154 | 29 | 17 | 347 | 35 | | |
| Lane Group Flow (vph) | 175 | 1599 | 104 | 135 | 748 | 154 | 29 | 118 | 347 | 282 | | |
| Turn Type | Prot | NA | Perm | Prot | NA | Perm | Perm | NA | Perm | NA | | |
| Protected Phases | 7 | 4 | | 3 | 8 | | | 2 | | 6 | 1 | 5 |
| Permitted Phases | | | 4 | | | 8 | 2 | | 6 | | | |
| Detector Phase | 7 | 4 | 4 | 3 | 8 | 8 | 2 | 2 | 6 | 6 | | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 5.0 | 10.0 | 10.0 | 5.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 3.0 | 3.0 |
| Minimum Split (s) | 11.1 | 34.1 | 34.1 | 11.1 | 34.1 | 34.1 | 39.8 | 39.8 | 39.8 | 39.8 | 5.0 | 5.0 |
| Total Split (s) | 27.6 | 59.3 | 59.3 | 15.7 | 47.4 | 47.4 | 40.0 | 40.0 | 40.0 | 40.0 | 5.0 | 5.0 |
| Total Split (%) | 23.0% | 49.4% | 49.4% | 13.1% | 39.5% | 39.5% | 33.3% | 33.3% | 33.3% | 33.3% | 4% | 4% |
| Yellow Time (s) | 3.7 | 3.7 | 3.7 | 3.7 | 3.7 | 3.7 | 3.3 | 3.3 | 3.3 | 3.3 | 2.0 | 2.0 |
| All-Red Time (s) | 2.4 | 2.4 | 2.4 | 2.4 | 2.4 | 2.4 | 3.5 | 3.5 | 3.5 | 3.5 | 0.0 | 0.0 |
| 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) | 6.1 | 6.1 | 6.1 | 6.1 | 6.1 | 6.1 | 6.8 | 6.8 | 6.8 | 6.8 | | |
| Lead/Lag | Lead | Lag | Lag | Lead | Lag | Lag | Lag | Lag | Lag | Lag | Lead | Lead |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Recall Mode | None | C-Max | C-Max | None | C-Max | C-Max | Max | Max | Max | Max | None | None |
| Act Effct Green (s) | 17.1 | 53.2 | 53.2 | 9.6 | 45.7 | 45.7 | 38.2 | 38.2 | 38.2 | 38.2 | | |
| Actuated g/C Ratio | 0.14 | 0.44 | 0.44 | 0.08 | 0.38 | 0.38 | 0.32 | 0.32 | 0.32 | 0.32 | | |
| v/c Ratio | 0.73 | 1.06 | 0.15 | 1.00 | 0.59 | 0.25 | 0.11 | 0.21 | 0.92 | 0.45 | | |
| Control Delay | 59.5 | 70.3 | 12.0 | 133.9 | 30.1 | 5.1 | 30.6 | 8.8 | 71.0 | 8.2 | | |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | |
| Total Delay | 59.5 | 70.3 | 12.0 | 133.9 | 30.1 | 5.1 | 30.6 | 8.8 | 71.0 | 8.2 | | |
| LOS | E | E | B | F | C | A | C | A | E | A | | |
| Approach Delay | | 66.0 | | | 39.9 | | | 13.1 | | 42.9 | | |
| Approach LOS | | E | | | D | | | B | | D | | |
| Queue Length 50th (m) | 44.1 | ~212.5 | 5.9 | 27.0 | 74.4 | 3.5 | 4.8 | 2.8 | 78.7 | 5.7 | | |
| Queue Length 95th (m) | m45.6 | m#211.1 | m6.9 | #70.6 | 99.7 | 16.3 | 12.3 | 15.9 | #135.1 | 27.1 | | |
| Internal Link Dist (m) | | 273.9 | | | 176.6 | | | 177.0 | | 412.2 | | |
| Turn Bay Length (m) | 65.0 | | 30.0 | 65.0 | | 40.0 | 20.0 | | 20.0 | | | |
| Base Capacity (vph) | 303 | 1502 | 699 | 135 | 1266 | 613 | 256 | 550 | 376 | 630 | | |
| 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 | 0.58 | 1.06 | 0.15 | 1.00 | 0.59 | 0.25 | 0.11 | 0.21 | 0.92 | 0.45 | | |

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 92 (77%), Referenced to phase 4:EBT and 8:WBT, Start of Green
 Natural Cycle: 130
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.06
 Intersection Signal Delay: 52.6
 Intersection LOS: D
 Intersection Capacity Utilization 97.9%
 ICU Level of Service F
 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.
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: Churchill Ave & Carling Ave



Lanes, Volumes, Timings
2: Clyde Ave/Cole Ave & Carling Ave

12/06/2022

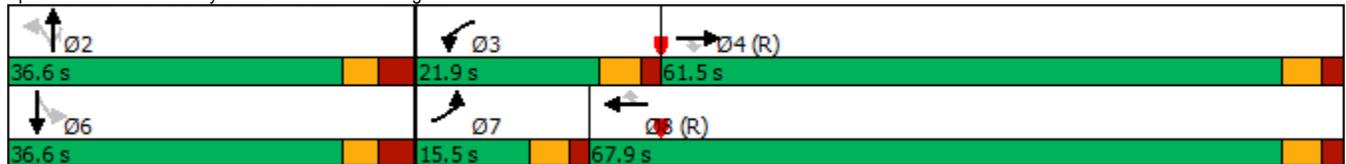


| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT |
|------------------------|-------|---------|-------|--------|-------|-------|-------|-------|-------|-------|-------|
| Lane Configurations | | | | | | | | | | | |
| Traffic Volume (vph) | 61 | 1704 | 127 | 234 | 767 | 52 | 121 | 51 | 147 | 35 | 63 |
| Future Volume (vph) | 61 | 1704 | 127 | 234 | 767 | 52 | 121 | 51 | 147 | 35 | 63 |
| Lane Group Flow (vph) | 61 | 1704 | 127 | 234 | 767 | 52 | 121 | 51 | 147 | 35 | 129 |
| Turn Type | Prot | NA | Perm | Prot | NA | Perm | Perm | NA | Perm | Perm | NA |
| Protected Phases | 7 | 4 | | 3 | 8 | | | 2 | | | 6 |
| Permitted Phases | | | 4 | | | 8 | 2 | | 2 | 6 | |
| Detector Phase | 7 | 4 | 4 | 3 | 8 | 8 | 2 | 2 | 2 | 6 | 6 |
| Switch Phase | | | | | | | | | | | |
| Minimum Initial (s) | 5.0 | 10.0 | 10.0 | 5.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 |
| Minimum Split (s) | 10.4 | 30.8 | 30.8 | 10.4 | 30.8 | 30.8 | 36.6 | 36.6 | 36.6 | 36.6 | 36.6 |
| Total Split (s) | 15.5 | 61.5 | 61.5 | 21.9 | 67.9 | 67.9 | 36.6 | 36.6 | 36.6 | 36.6 | 36.6 |
| Total Split (%) | 12.9% | 51.3% | 51.3% | 18.3% | 56.6% | 56.6% | 30.5% | 30.5% | 30.5% | 30.5% | 30.5% |
| Yellow Time (s) | 3.7 | 3.7 | 3.7 | 3.7 | 3.7 | 3.7 | 3.3 | 3.3 | 3.3 | 3.3 | 3.3 |
| All-Red Time (s) | 1.7 | 2.1 | 2.1 | 1.7 | 2.1 | 2.1 | 3.3 | 3.3 | 3.3 | 3.3 | 3.3 |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | 5.4 | 5.8 | 5.8 | 5.4 | 5.8 | 5.8 | 6.6 | 6.6 | 6.6 | 6.6 | 6.6 |
| Lead/Lag | Lead | Lag | Lag | Lead | Lag | Lag | | | | | |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | Yes | Yes | | | | | |
| Recall Mode | None | C-Max | C-Max | None | C-Max | C-Max | None | None | None | None | None |
| Act Effct Green (s) | 9.0 | 59.5 | 59.5 | 23.7 | 76.5 | 76.5 | 19.0 | 19.0 | 19.0 | 19.0 | 19.0 |
| Actuated g/C Ratio | 0.08 | 0.50 | 0.50 | 0.20 | 0.64 | 0.64 | 0.16 | 0.16 | 0.16 | 0.16 | 0.16 |
| v/c Ratio | 0.48 | 1.01 | 0.16 | 0.73 | 0.36 | 0.05 | 0.72 | 0.18 | 0.44 | 0.17 | 0.44 |
| Control Delay | 66.4 | 29.8 | 0.2 | 71.6 | 5.7 | 0.2 | 70.2 | 42.0 | 10.4 | 42.2 | 33.3 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 66.4 | 29.8 | 0.2 | 71.6 | 5.7 | 0.2 | 70.2 | 42.0 | 10.4 | 42.2 | 33.3 |
| LOS | E | C | A | E | A | A | E | D | B | D | C |
| Approach Delay | | 29.0 | | | 20.1 | | | 38.1 | | | 35.2 |
| Approach LOS | | C | | | C | | | D | | | D |
| Queue Length 50th (m) | 15.4 | ~224.3 | 0.1 | 57.3 | 16.0 | 0.1 | 27.6 | 10.6 | 0.0 | 7.3 | 18.6 |
| Queue Length 95th (m) | m16.9 | m#234.7 | m0.0 | #112.6 | 26.5 | m0.4 | 43.2 | 19.6 | 15.7 | 14.9 | 33.2 |
| Internal Link Dist (m) | | 369.5 | | | 273.9 | | | 124.0 | | | 136.4 |
| Turn Bay Length (m) | 20.0 | | 105.0 | 120.0 | | 30.0 | 95.0 | | 5.0 | 20.0 | |
| Base Capacity (vph) | 145 | 1681 | 802 | 321 | 2118 | 963 | 264 | 446 | 439 | 318 | 438 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 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 |
| Reduced v/c Ratio | 0.42 | 1.01 | 0.16 | 0.73 | 0.36 | 0.05 | 0.46 | 0.11 | 0.33 | 0.11 | 0.29 |

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 93 (78%), Referenced to phase 4:EBT and 8:WBT, Start of Green
 Natural Cycle: 140
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.01
 Intersection Signal Delay: 27.4
 Intersection Capacity Utilization 106.3%
 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.
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: Clyde Ave/Cole Ave & Carling Ave



Lanes, Volumes, Timings
3: Broadview Ave & Carling Ave

12/06/2022



| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | SBL | SBT | Ø1 | Ø5 |
|------------------------|-------|--------|-------|-------|-------|-------|-------|-------|-------|-------|------|------|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 197 | 1722 | 104 | 99 | 747 | 119 | 112 | 24 | 160 | 20 | | |
| Future Volume (vph) | 197 | 1722 | 104 | 99 | 747 | 119 | 112 | 24 | 160 | 20 | | |
| Lane Group Flow (vph) | 197 | 1722 | 104 | 99 | 747 | 119 | 112 | 96 | 160 | 155 | | |
| Turn Type | pm+pt | NA | Perm | pm+pt | NA | Perm | Perm | NA | Perm | NA | | |
| Protected Phases | 7 | 4 | | 3 | 8 | | | 2 | | 6 | 1 | 5 |
| Permitted Phases | 4 | | 4 | 8 | | 8 | 2 | | 6 | | | |
| Detector Phase | 7 | 4 | 4 | 3 | 8 | 8 | 2 | 2 | 6 | 6 | | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 5.0 | 10.0 | 10.0 | 5.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 3.0 | 3.0 |
| Minimum Split (s) | 12.4 | 23.2 | 23.2 | 11.2 | 24.4 | 24.4 | 37.0 | 37.0 | 35.8 | 35.8 | 5.0 | 5.0 |
| Total Split (s) | 21.0 | 66.8 | 66.8 | 11.2 | 57.0 | 57.0 | 37.0 | 37.0 | 37.0 | 37.0 | 5.0 | 5.0 |
| Total Split (%) | 17.5% | 55.7% | 55.7% | 9.3% | 47.5% | 47.5% | 30.8% | 30.8% | 30.8% | 30.8% | 4% | 4% |
| Yellow Time (s) | 3.7 | 3.7 | 3.7 | 3.7 | 3.7 | 3.7 | 3.3 | 3.3 | 3.3 | 3.3 | 2.0 | 2.0 |
| All-Red Time (s) | 3.7 | 2.5 | 2.5 | 2.5 | 3.7 | 3.7 | 3.7 | 3.7 | 2.5 | 2.5 | 0.0 | 0.0 |
| 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) | 7.4 | 6.2 | 6.2 | 6.2 | 7.4 | 7.4 | 7.0 | 7.0 | 5.8 | 5.8 | | |
| Lead/Lag | Lead | Lag | Lag | Lead | Lag | Lag | Lag | Lag | Lag | Lag | Lead | Lead |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Recall Mode | None | C-Max | C-Max | None | C-Max | C-Max | Max | Max | Max | Max | Min | Min |
| Act Effct Green (s) | 69.9 | 60.6 | 60.6 | 57.8 | 51.6 | 51.6 | 30.0 | 30.0 | 31.2 | 31.2 | | |
| Actuated g/C Ratio | 0.58 | 0.50 | 0.50 | 0.48 | 0.43 | 0.43 | 0.25 | 0.25 | 0.26 | 0.26 | | |
| v/c Ratio | 0.52 | 1.01 | 0.15 | 0.76 | 0.53 | 0.18 | 0.46 | 0.22 | 0.52 | 0.34 | | |
| Control Delay | 16.6 | 53.3 | 3.1 | 59.7 | 43.2 | 10.5 | 45.3 | 13.7 | 45.0 | 10.3 | | |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | |
| Total Delay | 16.6 | 53.3 | 3.1 | 59.7 | 43.2 | 10.5 | 45.3 | 13.7 | 45.0 | 10.3 | | |
| LOS | B | D | A | E | D | B | D | B | D | B | | |
| Approach Delay | | 47.2 | | | 40.8 | | | 30.7 | | 27.9 | | |
| Approach LOS | | D | | | D | | | C | | C | | |
| Queue Length 50th (m) | 20.4 | ~210.2 | 0.0 | 15.9 | 81.7 | 5.6 | 22.4 | 4.3 | 32.4 | 3.6 | | |
| Queue Length 95th (m) | 32.2 | #265.6 | 7.7 | #37.0 | 96.0 | 15.9 | 40.8 | 17.8 | 54.5 | 20.2 | | |
| Internal Link Dist (m) | | 239.1 | | | 369.5 | | | 434.9 | | 268.8 | | |
| Turn Bay Length (m) | 70.0 | | 30.0 | 50.0 | | 30.0 | 20.0 | | 45.0 | | | |
| Base Capacity (vph) | 404 | 1711 | 683 | 131 | 1402 | 651 | 244 | 432 | 309 | 458 | | |
| 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 | 0.49 | 1.01 | 0.15 | 0.76 | 0.53 | 0.18 | 0.46 | 0.22 | 0.52 | 0.34 | | |

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 77 (64%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green

Natural Cycle: 120

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.01

Intersection Signal Delay: 42.7

Intersection LOS: D

Intersection Capacity Utilization 111.4%

ICU Level of Service H

Analysis Period (min) 15

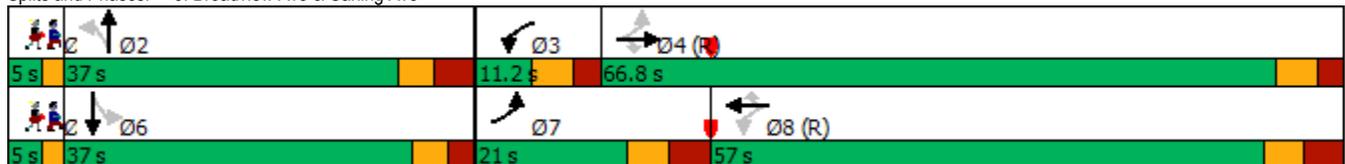
~ Volume exceeds capacity, queue is theoretically infinite.

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: 3: Broadview Ave & Carling Ave



Lanes, Volumes, Timings
 4: Clyde Ave & Doheny St/Existing Site Access

12/06/2022



| Lane Group | EBL | EBT | WBL | WBT | WBR | NBL | NBT | SBL | SBT |
|------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Lane Configurations | | | | | | | | | |
| Traffic Volume (vph) | 34 | 2 | 8 | 3 | 5 | 91 | 298 | 38 | 315 |
| Future Volume (vph) | 34 | 2 | 8 | 3 | 5 | 91 | 298 | 38 | 315 |
| Lane Group Flow (vph) | 0 | 96 | 0 | 11 | 5 | 91 | 307 | 38 | 395 |
| Turn Type | Perm | NA | Perm | NA | Perm | Perm | NA | pm+pt | NA |
| Protected Phases | | 4 | | 8 | | | 2 | 1 | 6 |
| Permitted Phases | 4 | | 8 | | 8 | 2 | | 6 | |
| 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 | 10.0 | 10.0 | 5.0 | 10.0 |
| Minimum Split (s) | 24.6 | 24.6 | 24.6 | 24.6 | 24.6 | 29.0 | 29.0 | 11.0 | 29.0 |
| Total Split (s) | 30.0 | 30.0 | 30.0 | 30.0 | 30.0 | 47.0 | 47.0 | 13.0 | 60.0 |
| Total Split (%) | 33.3% | 33.3% | 33.3% | 33.3% | 33.3% | 52.2% | 52.2% | 14.4% | 66.7% |
| Yellow Time (s) | 3.3 | 3.3 | 3.3 | 3.3 | 3.3 | 3.3 | 3.3 | 3.3 | 3.3 |
| All-Red Time (s) | 2.3 | 2.3 | 2.3 | 2.3 | 2.3 | 2.7 | 2.7 | 2.7 | 2.7 |
| Lost Time Adjust (s) | | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | | 5.6 | | 5.6 | 5.6 | 6.0 | 6.0 | 6.0 | 6.0 |
| Lead/Lag | | | | | | Lag | Lag | Lead | |
| Lead-Lag Optimize? | | | | | | Yes | Yes | Yes | |
| Recall Mode | None | None | None | None | None | Max | Max | None | Max |
| Act Effct Green (s) | | 11.8 | | 11.8 | 11.8 | 53.9 | 53.9 | 60.2 | 61.5 |
| Actuated g/C Ratio | | 0.15 | | 0.15 | 0.15 | 0.67 | 0.67 | 0.75 | 0.77 |
| v/c Ratio | | 0.37 | | 0.05 | 0.02 | 0.14 | 0.27 | 0.05 | 0.31 |
| Control Delay | | 18.0 | | 27.8 | 0.0 | 10.1 | 9.8 | 4.4 | 5.0 |
| Queue Delay | | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | | 18.0 | | 27.8 | 0.0 | 10.1 | 9.8 | 4.4 | 5.0 |
| LOS | | B | | C | A | B | A | A | A |
| Approach Delay | | 18.0 | | 19.1 | | | 9.9 | | 5.0 |
| Approach LOS | | B | | B | | | A | | A |
| Queue Length 50th (m) | | 4.7 | | 1.4 | 0.0 | 5.9 | 21.7 | 1.3 | 15.7 |
| Queue Length 95th (m) | | 16.6 | | 5.4 | 0.0 | 17.0 | 48.1 | 5.2 | 39.9 |
| Internal Link Dist (m) | | 281.3 | | 151.2 | | | 265.7 | | 124.0 |
| Turn Bay Length (m) | | | | | 40.0 | 45.0 | | | |
| Base Capacity (vph) | | 471 | | 459 | 527 | 632 | 1117 | 746 | 1284 |
| 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 | | 0.20 | | 0.02 | 0.01 | 0.14 | 0.27 | 0.05 | 0.31 |

| Intersection Summary | |
|---|------------------------|
| Cycle Length: 90 | |
| Actuated Cycle Length: 80.3 | |
| Natural Cycle: 65 | |
| Control Type: Actuated-Uncoordinated | |
| Maximum v/c Ratio: 0.37 | |
| Intersection Signal Delay: 8.6 | Intersection LOS: A |
| Intersection Capacity Utilization 59.0% | ICU Level of Service B |
| Analysis Period (min) 15 | |

Splits and Phases: 4: Clyde Ave & Doheny St/Existing Site Access



Lanes, Volumes, Timings
5: Saigon Ct & Carling Ave WB

12/06/2022



| Lane Group | WBL | WBT | WBR | NBL | NBT | SBT |
|------------------------|-------|-------|-------|-------|-------|-------|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 29 | 1029 | 58 | 22 | 52 | 26 |
| Future Volume (vph) | 29 | 1029 | 58 | 22 | 52 | 26 |
| Lane Group Flow (vph) | 29 | 1029 | 58 | 0 | 74 | 35 |
| Turn Type | Perm | NA | Perm | Perm | NA | NA |
| Protected Phases | | 8 | | | 2 | 6 |
| Permitted Phases | 8 | | 8 | 2 | | |
| Detector Phase | 8 | 8 | 8 | 2 | 2 | 6 |
| Switch Phase | | | | | | |
| Minimum Initial (s) | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 |
| Minimum Split (s) | 29.7 | 29.7 | 29.7 | 26.7 | 26.7 | 26.7 |
| Total Split (s) | 86.0 | 86.0 | 86.0 | 34.0 | 34.0 | 34.0 |
| Total Split (%) | 71.7% | 71.7% | 71.7% | 28.3% | 28.3% | 28.3% |
| Yellow Time (s) | 3.7 | 3.7 | 3.7 | 3.3 | 3.3 | 3.3 |
| All-Red Time (s) | 2.0 | 2.0 | 2.0 | 2.4 | 2.4 | 2.4 |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 |
| Total Lost Time (s) | 5.7 | 5.7 | 5.7 | | 5.7 | 5.7 |
| Lead/Lag | | | | | | |
| Lead-Lag Optimize? | | | | | | |
| Recall Mode | C-Max | C-Max | C-Max | None | None | None |
| Act Effct Green (s) | 101.2 | 101.2 | 101.2 | | 11.7 | 11.7 |
| Actuated g/C Ratio | 0.84 | 0.84 | 0.84 | | 0.10 | 0.10 |
| v/c Ratio | 0.02 | 0.37 | 0.05 | | 0.48 | 0.20 |
| Control Delay | 2.6 | 3.4 | 0.8 | | 49.2 | 41.7 |
| Queue Delay | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 |
| Total Delay | 2.6 | 3.4 | 0.8 | | 49.3 | 41.7 |
| LOS | A | A | A | | D | D |
| Approach Delay | | 3.2 | | | 49.3 | 41.7 |
| Approach LOS | | A | | | D | D |
| Queue Length 50th (m) | 1.0 | 26.9 | 0.0 | | 15.7 | 5.8 |
| Queue Length 95th (m) | 3.2 | 42.3 | 2.5 | | m21.9 | 15.2 |
| Internal Link Dist (m) | | 298.8 | | | 45.3 | 50.2 |
| Turn Bay Length (m) | 50.0 | | 40.0 | | | |
| Base Capacity (vph) | 1429 | 2776 | 1237 | | 373 | 412 |
| Starvation Cap Reductn | 0 | 0 | 0 | | 14 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | | 0 | 0 |
| Reduced v/c Ratio | 0.02 | 0.37 | 0.05 | | 0.21 | 0.08 |

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 62 (52%), Referenced to phase 8:WBTL, Start of Green
 Natural Cycle: 60
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.48
 Intersection Signal Delay: 7.1
 Intersection Capacity Utilization 50.4%
 Analysis Period (min) 15
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 5: Saigon Ct & Carling Ave WB



Lanes, Volumes, Timings
6: Carling Ave EB & Saigon Ct

12/06/2022



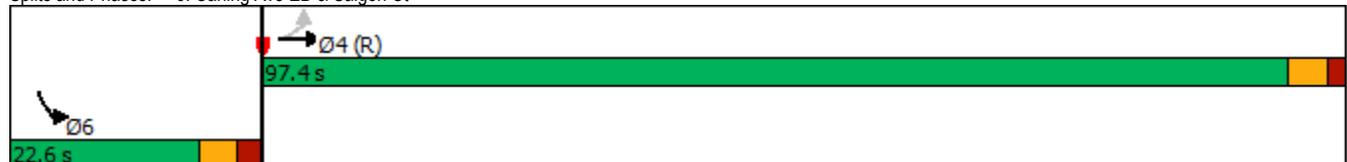
| Lane Group | EBT | SBL |
|------------------------|-------|-------|
| Lane Configurations | ↕↕ | ↕↕ |
| Traffic Volume (vph) | 2011 | 42 |
| Future Volume (vph) | 2011 | 42 |
| Lane Group Flow (vph) | 2116 | 42 |
| Turn Type | NA | Prot |
| Protected Phases | 4 | 6 |
| Permitted Phases | | |
| Detector Phase | 4 | 6 |
| Switch Phase | | |
| Minimum Initial (s) | 10.0 | 5.0 |
| Minimum Split (s) | 15.4 | 22.6 |
| Total Split (s) | 97.4 | 22.6 |
| Total Split (%) | 81.2% | 18.8% |
| Yellow Time (s) | 3.7 | 3.3 |
| All-Red Time (s) | 1.7 | 2.3 |
| Lost Time Adjust (s) | 0.0 | 0.0 |
| Total Lost Time (s) | 5.4 | 5.6 |
| Lead/Lag | | |
| Lead-Lag Optimize? | | |
| Recall Mode | C-Max | None |
| Act Effct Green (s) | 105.3 | 7.0 |
| Actuated g/C Ratio | 0.88 | 0.06 |
| v/c Ratio | 0.71 | 0.22 |
| Control Delay | 3.6 | 53.2 |
| Queue Delay | 0.0 | 0.0 |
| Total Delay | 3.6 | 53.2 |
| LOS | A | D |
| Approach Delay | 3.6 | 53.2 |
| Approach LOS | A | D |
| Queue Length 50th (m) | 22.6 | 5.2 |
| Queue Length 95th (m) | m13.7 | 11.1 |
| Internal Link Dist (m) | 110.2 | 45.3 |
| Turn Bay Length (m) | | |
| Base Capacity (vph) | 2969 | 465 |
| Starvation Cap Reductn | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 |
| Storage Cap Reductn | 0 | 0 |
| Reduced v/c Ratio | 0.71 | 0.09 |

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 105 (88%), Referenced to phase 4:EBTL, Start of Green
 Natural Cycle: 80
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.71
 Intersection Signal Delay: 4.5
 Intersection Capacity Utilization 75.2%
 Analysis Period (min) 15
 m Volume for 95th percentile queue is metered by upstream signal.

Intersection LOS: A
 ICU Level of Service D

Splits and Phases: 6: Carling Ave EB & Saigon Ct



Lanes, Volumes, Timings
 7: Clyde Ave & Laperriere Ave

12/06/2022



| Lane Group | WBL | NBT | SBT |
|---|------|------------------------|------|
| Lane Configurations | | | |
| Traffic Volume (vph) | 128 | 212 | 189 |
| Future Volume (vph) | 128 | 212 | 189 |
| Lane Group Flow (vph) | 363 | 384 | 378 |
| Sign Control | Stop | Stop | Stop |
| Intersection Summary | | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization 77.6% | | ICU Level of Service D | |
| Analysis Period (min) 15 | | | |

HCM Unsignalized Intersection Capacity Analysis
 7: Clyde Ave & Laperriere Ave

12/06/2022



| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|-----------------------------------|-------|-------|-------|----------------------|------|------|
| Lane Configurations | W | | T | | | T |
| Sign Control | Stop | | Stop | | | Stop |
| Traffic Volume (vph) | 128 | 235 | 212 | 172 | 189 | 189 |
| Future Volume (vph) | 128 | 235 | 212 | 172 | 189 | 189 |
| Peak Hour Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Hourly flow rate (vph) | 128 | 235 | 212 | 172 | 189 | 189 |
| Direction, Lane # | WB 1 | NB 1 | SB 1 | | | |
| Volume Total (vph) | 363 | 384 | 378 | | | |
| Volume Left (vph) | 128 | 0 | 189 | | | |
| Volume Right (vph) | 235 | 172 | 0 | | | |
| Hadj (s) | -0.27 | -0.11 | 0.19 | | | |
| Departure Headway (s) | 5.7 | 5.6 | 5.8 | | | |
| Degree Utilization, x | 0.57 | 0.59 | 0.61 | | | |
| Capacity (veh/h) | 584 | 614 | 581 | | | |
| Control Delay (s) | 16.1 | 16.3 | 17.7 | | | |
| Approach Delay (s) | 16.1 | 16.3 | 17.7 | | | |
| Approach LOS | C | C | C | | | |
| Intersection Summary | | | | | | |
| Delay | | | 16.7 | | | |
| Level of Service | | | C | | | |
| Intersection Capacity Utilization | | | 77.6% | ICU Level of Service | | D |
| Analysis Period (min) | | | 15 | | | |

Lanes, Volumes, Timings
 8: Clyde Ave & Woodward Dr

12/06/2022



| Lane Group | EBL | EBR | NBT | SBT | SBR |
|---|------|-----|------------------------|------|-----|
| Lane Configurations | | | | | |
| Traffic Volume (vph) | 346 | 8 | 38 | 47 | 270 |
| Future Volume (vph) | 346 | 8 | 38 | 47 | 270 |
| Lane Group Flow (vph) | 346 | 8 | 50 | 47 | 270 |
| Sign Control | Free | | Stop | Stop | |
| Intersection Summary | | | | | |
| Control Type: Unsignalized | | | | | |
| Intersection Capacity Utilization 36.4% | | | ICU Level of Service A | | |
| Analysis Period (min) 15 | | | | | |

HCM Unsignalized Intersection Capacity Analysis
8: Clyde Ave & Woodward Dr

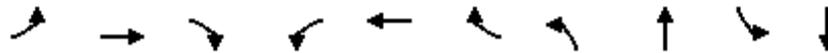
12/06/2022



| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|-----------------------------------|-------------|-------------|-------------|----------------------|------|------|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 346 | 8 | 12 | 38 | 47 | 270 |
| Future Volume (Veh/h) | 346 | 8 | 12 | 38 | 47 | 270 |
| Sign Control | Free | | | Stop | Stop | |
| Grade | 0% | | | 0% | 0% | |
| Peak Hour Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Hourly flow rate (vph) | 346 | 8 | 12 | 38 | 47 | 270 |
| Pedestrians | | | | | | |
| Lane Width (m) | | | | | | |
| Walking Speed (m/s) | | | | | | |
| Percent Blockage | | | | | | |
| Right turn flare (veh) | 3 | | | | | |
| Median type | None | | | | | |
| Median storage (veh) | | | | | | |
| Upstream signal (m) | | | | | | |
| pX, platoon unblocked | | | | | | |
| vC, conflicting volume | 0 | | 716 | 692 | 692 | 0 |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | 0 | | 716 | 692 | 692 | 0 |
| tC, single (s) | 4.1 | | 7.1 | 6.5 | 6.5 | 6.2 |
| tC, 2 stage (s) | | | | | | |
| tF (s) | 2.2 | | 3.5 | 4.0 | 4.0 | 3.3 |
| p0 queue free % | 79 | | 94 | 87 | 84 | 75 |
| cM capacity (veh/h) | 1623 | | 191 | 289 | 289 | 1085 |
| Direction, Lane # | EB 1 | EB 2 | NB 1 | SB 1 | | |
| Volume Total | 346 | 8 | 50 | 317 | | |
| Volume Left | 346 | 0 | 12 | 0 | | |
| Volume Right | 0 | 8 | 0 | 270 | | |
| cSH | 1623 | 1700 | 257 | 1274 | | |
| Volume to Capacity | 0.21 | 0.00 | 0.19 | 0.25 | | |
| Queue Length 95th (m) | 6.1 | 0.0 | 5.4 | 7.5 | | |
| Control Delay (s) | 7.8 | 0.0 | 22.3 | 11.0 | | |
| Lane LOS | A | | C | B | | |
| Approach Delay (s) | 7.6 | | 22.3 | 11.0 | | |
| Approach LOS | | | C | B | | |
| Intersection Summary | | | | | | |
| Average Delay | | | 10.1 | | | |
| Intersection Capacity Utilization | | | 36.4% | ICU Level of Service | A | |
| Analysis Period (min) | | | 15 | | | |

Lanes, Volumes, Timings
1: Churchill Ave & Carling Ave

12/06/2022

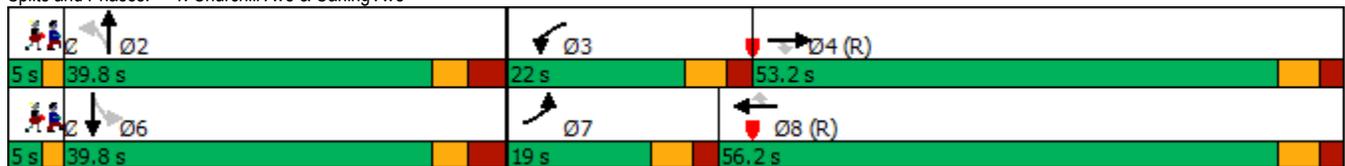


| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | SBL | SBT | Ø1 | Ø5 |
|------------------------|--------|-------|-------|-------|--------|-------|-------|-------|-------|-------|------|------|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 252 | 946 | 33 | 114 | 1898 | 218 | 105 | 40 | 187 | 18 | | |
| Future Volume (vph) | 252 | 946 | 33 | 114 | 1898 | 218 | 105 | 40 | 187 | 18 | | |
| Lane Group Flow (vph) | 252 | 946 | 33 | 114 | 1898 | 218 | 105 | 113 | 187 | 304 | | |
| Turn Type | Prot | NA | Perm | Prot | NA | Perm | Perm | NA | Perm | NA | | |
| Protected Phases | 7 | 4 | | 3 | 8 | | | 2 | | 6 | 1 | 5 |
| Permitted Phases | | | 4 | | | 8 | 2 | | 6 | | | |
| Detector Phase | 7 | 4 | 4 | 3 | 8 | 8 | 2 | 2 | 6 | 6 | | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 5.0 | 10.0 | 10.0 | 5.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 3.0 | 3.0 |
| Minimum Split (s) | 11.1 | 34.1 | 34.1 | 11.1 | 34.1 | 34.1 | 39.8 | 39.8 | 39.8 | 39.8 | 5.0 | 5.0 |
| Total Split (s) | 19.0 | 53.2 | 53.2 | 22.0 | 56.2 | 56.2 | 39.8 | 39.8 | 39.8 | 39.8 | 5.0 | 5.0 |
| Total Split (%) | 15.8% | 44.3% | 44.3% | 18.3% | 46.8% | 46.8% | 33.2% | 33.2% | 33.2% | 33.2% | 4% | 4% |
| Yellow Time (s) | 3.7 | 3.7 | 3.7 | 3.7 | 3.7 | 3.7 | 3.3 | 3.3 | 3.3 | 3.3 | 2.0 | 2.0 |
| All-Red Time (s) | 2.4 | 2.4 | 2.4 | 2.4 | 2.4 | 2.4 | 3.5 | 3.5 | 3.5 | 3.5 | 0.0 | 0.0 |
| 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) | 6.1 | 6.1 | 6.1 | 6.1 | 6.1 | 6.1 | 6.8 | 6.8 | 6.8 | 6.8 | | |
| Lead/Lag | Lead | Lag | Lag | Lead | Lag | Lag | Lag | Lag | Lag | Lag | Lead | Lead |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Recall Mode | None | C-Max | C-Max | None | C-Max | C-Max | Max | Max | Max | Max | None | None |
| Act Effct Green (s) | 12.9 | 50.2 | 50.2 | 12.8 | 50.1 | 50.1 | 38.0 | 38.0 | 38.0 | 38.0 | | |
| Actuated g/C Ratio | 0.11 | 0.42 | 0.42 | 0.11 | 0.42 | 0.42 | 0.32 | 0.32 | 0.32 | 0.32 | | |
| v/c Ratio | 1.38 | 0.67 | 0.05 | 0.63 | 1.34 | 0.33 | 0.44 | 0.20 | 0.49 | 0.46 | | |
| Control Delay | 245.6 | 24.1 | 0.5 | 72.8 | 184.7 | 8.9 | 39.8 | 13.2 | 38.4 | 7.5 | | |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | |
| Total Delay | 245.6 | 24.1 | 0.5 | 72.8 | 184.7 | 8.9 | 39.8 | 13.2 | 38.4 | 7.5 | | |
| LOS | F | C | A | E | F | A | D | B | D | A | | |
| Approach Delay | | 68.8 | | | 161.8 | | | 26.0 | | 19.3 | | |
| Approach LOS | | E | | | F | | | C | | B | | |
| Queue Length 50th (m) | ~81.6 | 70.6 | 0.0 | 25.2 | ~309.3 | 8.2 | 19.6 | 6.6 | 35.5 | 4.4 | | |
| Queue Length 95th (m) | #134.1 | 65.7 | m0.5 | m35.6 | #349.1 | m16.6 | 37.2 | 19.9 | 58.2 | 26.0 | | |
| Internal Link Dist (m) | | 273.9 | | | 176.6 | | | 177.0 | | 412.2 | | |
| Turn Bay Length (m) | 65.0 | | 30.0 | 65.0 | | 40.0 | 20.0 | | 20.0 | | | |
| Base Capacity (vph) | 182 | 1418 | 660 | 224 | 1415 | 664 | 237 | 552 | 382 | 657 | | |
| 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 | 1.38 | 0.67 | 0.05 | 0.51 | 1.34 | 0.33 | 0.44 | 0.20 | 0.49 | 0.46 | | |

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 92 (77%), Referenced to phase 4:EBT and 8:WBT, Start of Green
 Natural Cycle: 150
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.38
 Intersection Signal Delay: 110.5
 Intersection LOS: F
 Intersection Capacity Utilization 130.1%
 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.
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: Churchill Ave & Carling Ave



Lanes, Volumes, Timings
2: Clyde Ave/Cole Ave & Carling Ave

12/06/2022



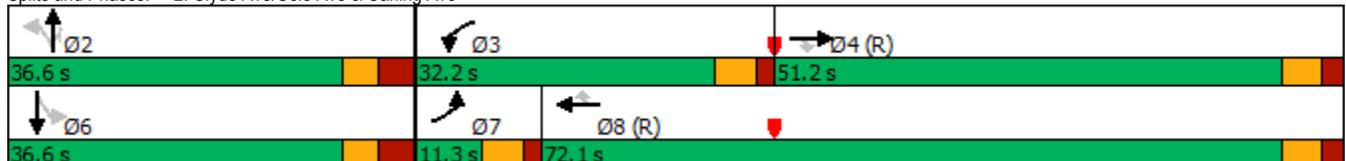
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT |
|------------------------|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Lane Configurations | | | | | | | | | | | |
| Traffic Volume (vph) | 77 | 948 | 131 | 234 | 1955 | 58 | 126 | 87 | 155 | 22 | 54 |
| Future Volume (vph) | 77 | 948 | 131 | 234 | 1955 | 58 | 126 | 87 | 155 | 22 | 54 |
| Lane Group Flow (vph) | 77 | 948 | 131 | 234 | 1955 | 58 | 126 | 87 | 155 | 22 | 116 |
| Turn Type | Prot | NA | Perm | Prot | NA | Perm | Perm | NA | Perm | Perm | NA |
| Protected Phases | 7 | 4 | | 3 | 8 | | | 2 | | | 6 |
| Permitted Phases | | | 4 | | | 8 | 2 | | 2 | 6 | |
| Detector Phase | 7 | 4 | 4 | 3 | 8 | 8 | 2 | 2 | 2 | 6 | 6 |
| Switch Phase | | | | | | | | | | | |
| Minimum Initial (s) | 5.0 | 10.0 | 10.0 | 5.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 |
| Minimum Split (s) | 10.4 | 30.8 | 30.8 | 10.4 | 30.8 | 30.8 | 36.6 | 36.6 | 36.6 | 36.6 | 36.6 |
| Total Split (s) | 11.3 | 51.2 | 51.2 | 32.2 | 72.1 | 72.1 | 36.6 | 36.6 | 36.6 | 36.6 | 36.6 |
| Total Split (%) | 9.4% | 42.7% | 42.7% | 26.8% | 60.1% | 60.1% | 30.5% | 30.5% | 30.5% | 30.5% | 30.5% |
| Yellow Time (s) | 3.7 | 3.7 | 3.7 | 3.7 | 3.7 | 3.7 | 3.3 | 3.3 | 3.3 | 3.3 | 3.3 |
| All-Red Time (s) | 1.7 | 2.1 | 2.1 | 1.7 | 2.1 | 2.1 | 3.3 | 3.3 | 3.3 | 3.3 | 3.3 |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | 5.4 | 5.8 | 5.8 | 5.4 | 5.8 | 5.8 | 6.6 | 6.6 | 6.6 | 6.6 | 6.6 |
| Lead/Lag | Lead | Lag | Lag | Lead | Lag | Lag | | | | | |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | Yes | Yes | | | | | |
| Recall Mode | None | C-Max | C-Max | None | C-Max | C-Max | None | None | None | None | None |
| Act Effct Green (s) | 9.0 | 60.5 | 60.5 | 21.2 | 72.7 | 72.7 | 20.5 | 20.5 | 20.5 | 20.5 | 20.5 |
| Actuated g/C Ratio | 0.08 | 0.50 | 0.50 | 0.18 | 0.61 | 0.61 | 0.17 | 0.17 | 0.17 | 0.17 | 0.17 |
| v/c Ratio | 0.61 | 0.56 | 0.16 | 0.78 | 0.95 | 0.07 | 0.62 | 0.29 | 0.44 | 0.10 | 0.37 |
| Control Delay | 70.0 | 12.5 | 0.9 | 50.1 | 29.4 | 4.3 | 57.5 | 43.0 | 14.4 | 38.6 | 27.6 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 70.0 | 12.5 | 0.9 | 50.1 | 29.4 | 4.3 | 57.5 | 43.0 | 14.4 | 38.6 | 27.6 |
| LOS | E | B | A | D | C | A | E | D | B | D | C |
| Approach Delay | | 15.0 | | | 30.9 | | | 35.9 | | | 29.4 |
| Approach LOS | | B | | | C | | | D | | | C |
| Queue Length 50th (m) | 18.3 | 30.4 | 0.0 | 58.4 | 139.8 | 1.1 | 28.6 | 18.6 | 6.4 | 4.6 | 14.9 |
| Queue Length 95th (m) | m#42.7 | 37.2 | 2.5 | m50.0 | m93.6 | m0.9 | 43.7 | 29.9 | 22.7 | 10.8 | 28.7 |
| Internal Link Dist (m) | | 369.5 | | | 273.9 | | | 124.0 | | | 136.4 |
| Turn Bay Length (m) | 20.0 | | 105.0 | 120.0 | | 30.0 | 95.0 | | 5.0 | 20.0 | |
| Base Capacity (vph) | 127 | 1707 | 806 | 378 | 2053 | 891 | 298 | 446 | 459 | 307 | 440 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 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 |
| Reduced v/c Ratio | 0.61 | 0.56 | 0.16 | 0.62 | 0.95 | 0.07 | 0.42 | 0.20 | 0.34 | 0.07 | 0.26 |

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 93 (78%), Referenced to phase 4:EBT and 8:WBT, Start of Green
 Natural Cycle: 130
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.95
 Intersection Signal Delay: 26.7
 Intersection Capacity Utilization 94.9%
 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.

Intersection LOS: C
 ICU Level of Service F

Splits and Phases: 2: Clyde Ave/Cole Ave & Carling Ave



Lanes, Volumes, Timings
3: Broadview Ave & Carling Ave

12/06/2022



| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | SBL | SBT | Ø1 | Ø5 |
|------------------------|-------|-------|-------|-------|---------|-------|-------|-------|-------|-------|------|------|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 94 | 1083 | 31 | 67 | 2030 | 67 | 181 | 35 | 67 | 23 | | |
| Future Volume (vph) | 94 | 1083 | 31 | 67 | 2030 | 67 | 181 | 35 | 67 | 23 | | |
| Lane Group Flow (vph) | 94 | 1083 | 31 | 67 | 2030 | 67 | 181 | 68 | 67 | 173 | | |
| Turn Type | pm+pt | NA | Perm | pm+pt | NA | Perm | Perm | NA | Perm | NA | | |
| Protected Phases | 7 | 4 | | 3 | 8 | | | 2 | | 6 | 1 | 5 |
| Permitted Phases | 4 | | 4 | 8 | | 8 | 2 | | 6 | | | |
| Detector Phase | 7 | 4 | 4 | 3 | 8 | 8 | 2 | 2 | 6 | 6 | | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 5.0 | 10.0 | 10.0 | 5.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 3.0 | 3.0 |
| Minimum Split (s) | 12.4 | 23.2 | 23.2 | 11.2 | 24.4 | 24.4 | 37.0 | 37.0 | 35.8 | 35.8 | 5.0 | 5.0 |
| Total Split (s) | 12.4 | 65.6 | 65.6 | 12.4 | 65.6 | 65.6 | 37.0 | 37.0 | 37.0 | 37.0 | 5.0 | 5.0 |
| Total Split (%) | 10.3% | 54.7% | 54.7% | 10.3% | 54.7% | 54.7% | 30.8% | 30.8% | 30.8% | 30.8% | 4% | 4% |
| Yellow Time (s) | 3.7 | 3.7 | 3.7 | 3.7 | 3.7 | 3.7 | 3.3 | 3.3 | 3.3 | 3.3 | 2.0 | 2.0 |
| All-Red Time (s) | 3.7 | 2.5 | 2.5 | 2.5 | 3.7 | 3.7 | 3.7 | 3.7 | 2.5 | 2.5 | 0.0 | 0.0 |
| 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) | 7.4 | 6.2 | 6.2 | 6.2 | 7.4 | 7.4 | 7.0 | 7.0 | 5.8 | 5.8 | | |
| Lead/Lag | Lead | Lag | Lag | Lead | Lag | Lag | Lag | Lag | Lag | Lag | Lead | Lead |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Recall Mode | None | C-Max | C-Max | None | C-Max | C-Max | Max | Max | Max | Max | Min | Min |
| Act Effct Green (s) | 64.7 | 61.9 | 61.9 | 65.5 | 58.2 | 58.2 | 30.0 | 30.0 | 31.2 | 31.2 | | |
| Actuated g/C Ratio | 0.54 | 0.52 | 0.52 | 0.55 | 0.48 | 0.48 | 0.25 | 0.25 | 0.26 | 0.26 | | |
| v/c Ratio | 0.73 | 0.62 | 0.04 | 0.28 | 1.23 | 0.09 | 0.74 | 0.16 | 0.21 | 0.36 | | |
| Control Delay | 50.1 | 23.3 | 0.1 | 15.2 | 138.0 | 1.9 | 60.4 | 21.3 | 36.8 | 12.2 | | |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | |
| Total Delay | 50.1 | 23.3 | 0.1 | 15.2 | 138.0 | 1.9 | 60.4 | 21.3 | 36.8 | 12.2 | | |
| LOS | D | C | A | B | F | A | E | C | D | B | | |
| Approach Delay | | 24.8 | | | 130.0 | | | 49.8 | | 19.1 | | |
| Approach LOS | | C | | | F | | | D | | B | | |
| Queue Length 50th (m) | 9.2 | 96.5 | 0.0 | 7.1 | ~308.3 | 0.0 | 39.3 | 6.3 | 12.4 | 7.0 | | |
| Queue Length 95th (m) | #34.3 | 119.0 | 0.0 | m8.0 | m#336.1 | m0.2 | #72.9 | 17.9 | 24.7 | 25.3 | | |
| Internal Link Dist (m) | | 239.1 | | | 369.5 | | | 434.9 | | 268.8 | | |
| Turn Bay Length (m) | 70.0 | | 30.0 | 50.0 | | 30.0 | 20.0 | | 45.0 | | | |
| Base Capacity (vph) | 129 | 1748 | 781 | 240 | 1644 | 715 | 246 | 432 | 325 | 485 | | |
| 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 | 0.73 | 0.62 | 0.04 | 0.28 | 1.23 | 0.09 | 0.74 | 0.16 | 0.21 | 0.36 | | |

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 77 (64%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green

Natural Cycle: 150

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.23

Intersection Signal Delay: 85.0

Intersection LOS: F

Intersection Capacity Utilization 123.3%

ICU Level of Service H

Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.

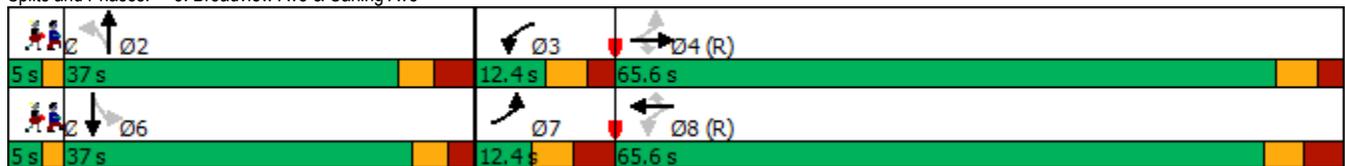
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

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

Splits and Phases: 3: Broadview Ave & Carling Ave



Lanes, Volumes, Timings

4: Clyde Ave & Doheny St/Existing Site Access

12/06/2022



| Lane Group | EBL | EBT | WBL | WBT | WBR | NBL | NBT | SBL | SBT |
|------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Lane Configurations | | | | | | | | | |
| Traffic Volume (vph) | 24 | 5 | 27 | 9 | 20 | 32 | 303 | 79 | 273 |
| Future Volume (vph) | 24 | 5 | 27 | 9 | 20 | 32 | 303 | 79 | 273 |
| Lane Group Flow (vph) | 0 | 81 | 0 | 36 | 20 | 32 | 323 | 79 | 328 |
| Turn Type | Perm | NA | Perm | NA | Perm | Perm | NA | pm+pt | NA |
| Protected Phases | | 4 | | 8 | | | 2 | 1 | 6 |
| Permitted Phases | 4 | | 8 | | 8 | 2 | | 6 | |
| 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 | 10.0 | 10.0 | 5.0 | 10.0 |
| Minimum Split (s) | 24.6 | 24.6 | 24.6 | 24.6 | 24.6 | 29.0 | 29.0 | 11.0 | 29.0 |
| Total Split (s) | 32.0 | 32.0 | 32.0 | 32.0 | 32.0 | 55.0 | 55.0 | 18.0 | 73.0 |
| Total Split (%) | 30.5% | 30.5% | 30.5% | 30.5% | 30.5% | 52.4% | 52.4% | 17.1% | 69.5% |
| Yellow Time (s) | 3.3 | 3.3 | 3.3 | 3.3 | 3.3 | 3.3 | 3.3 | 3.3 | 3.3 |
| All-Red Time (s) | 2.3 | 2.3 | 2.3 | 2.3 | 2.3 | 2.7 | 2.7 | 2.7 | 2.7 |
| Lost Time Adjust (s) | | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | | 5.6 | | 5.6 | 5.6 | 6.0 | 6.0 | 6.0 | 6.0 |
| Lead/Lag | | | | | | Lag | Lag | Lead | |
| Lead-Lag Optimize? | | | | | | Yes | Yes | Yes | |
| Recall Mode | None | None | None | None | None | Max | Max | None | Max |
| Act Effct Green (s) | | 11.7 | | 11.7 | 11.7 | 61.1 | 61.1 | 70.2 | 71.4 |
| Actuated g/C Ratio | | 0.13 | | 0.13 | 0.13 | 0.68 | 0.68 | 0.78 | 0.79 |
| v/c Ratio | | 0.35 | | 0.20 | 0.07 | 0.05 | 0.28 | 0.11 | 0.25 |
| Control Delay | | 20.5 | | 37.4 | 0.5 | 8.9 | 9.5 | 3.9 | 4.1 |
| Queue Delay | | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | | 20.5 | | 37.4 | 0.5 | 8.9 | 9.5 | 3.9 | 4.1 |
| LOS | | C | | D | A | A | A | A | A |
| Approach Delay | | 20.5 | | 24.2 | | | 9.4 | | 4.1 |
| Approach LOS | | C | | C | | | A | | A |
| Queue Length 50th (m) | | 4.5 | | 5.7 | 0.0 | 2.0 | 23.3 | 2.7 | 12.5 |
| Queue Length 95th (m) | | 16.8 | | 14.1 | 0.0 | 7.2 | 50.1 | 8.6 | 31.1 |
| Internal Link Dist (m) | | 281.3 | | 151.2 | | | 265.7 | | 124.0 |
| Turn Bay Length (m) | | | | | 40.0 | 45.0 | | | |
| Base Capacity (vph) | | 459 | | 408 | 499 | 675 | 1163 | 798 | 1330 |
| 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 | | 0.18 | | 0.09 | 0.04 | 0.05 | 0.28 | 0.10 | 0.25 |

Intersection Summary

Cycle Length: 105

Actuated Cycle Length: 90.3

Natural Cycle: 65

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.35

Intersection Signal Delay: 8.9

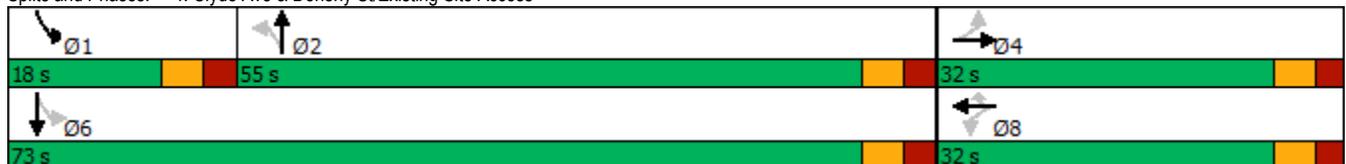
Intersection LOS: A

Intersection Capacity Utilization 53.9%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 4: Clyde Ave & Doheny St/Existing Site Access



Lanes, Volumes, Timings
5: Saigon Ct & Carling Ave WB

12/06/2022



| Lane Group | WBL | WBT | WBR | NBL | NBT | SBT |
|------------------------|-------|-------|-------|-------|-------|-------|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 32 | 2126 | 12 | 37 | 9 | 87 |
| Future Volume (vph) | 32 | 2126 | 12 | 37 | 9 | 87 |
| Lane Group Flow (vph) | 32 | 2126 | 12 | 0 | 46 | 102 |
| Turn Type | Perm | NA | Perm | Perm | NA | NA |
| Protected Phases | | 8 | | | 2 | 6 |
| Permitted Phases | 8 | | 8 | 2 | | |
| Detector Phase | 8 | 8 | 8 | 2 | 2 | 6 |
| Switch Phase | | | | | | |
| Minimum Initial (s) | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 |
| Minimum Split (s) | 29.7 | 29.7 | 29.7 | 26.7 | 26.7 | 26.7 |
| Total Split (s) | 93.3 | 93.3 | 93.3 | 26.7 | 26.7 | 26.7 |
| Total Split (%) | 77.8% | 77.8% | 77.8% | 22.3% | 22.3% | 22.3% |
| Yellow Time (s) | 3.7 | 3.7 | 3.7 | 3.3 | 3.3 | 3.3 |
| All-Red Time (s) | 2.0 | 2.0 | 2.0 | 2.4 | 2.4 | 2.4 |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 |
| Total Lost Time (s) | 5.7 | 5.7 | 5.7 | | 5.7 | 5.7 |
| Lead/Lag | | | | | | |
| Lead-Lag Optimize? | | | | | | |
| Recall Mode | C-Max | C-Max | C-Max | None | None | None |
| Act Effct Green (s) | 95.2 | 95.2 | 95.2 | | 13.4 | 13.4 |
| Actuated g/C Ratio | 0.79 | 0.79 | 0.79 | | 0.11 | 0.11 |
| v/c Ratio | 0.02 | 0.79 | 0.01 | | 0.35 | 0.51 |
| Control Delay | 3.4 | 10.6 | 0.7 | | 40.3 | 55.4 |
| Queue Delay | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 |
| Total Delay | 3.4 | 10.6 | 0.7 | | 40.3 | 55.4 |
| LOS | A | B | A | | D | E |
| Approach Delay | | 10.4 | | | 40.3 | 55.4 |
| Approach LOS | | B | | | D | E |
| Queue Length 50th (m) | 1.2 | 110.4 | 0.0 | | 9.4 | 21.9 |
| Queue Length 95th (m) | 4.4 | 206.4 | 0.8 | | 20.5 | 36.6 |
| Internal Link Dist (m) | | 298.8 | | | 45.3 | 50.2 |
| Turn Bay Length (m) | 50.0 | | 40.0 | | | |
| Base Capacity (vph) | 1338 | 2689 | 1161 | | 204 | 309 |
| 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 | 0.02 | 0.79 | 0.01 | | 0.23 | 0.33 |

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 62 (52%), Referenced to phase 8:WBTL, Start of Green
 Natural Cycle: 90
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.79
 Intersection Signal Delay: 13.0
 Intersection Capacity Utilization 82.5%
 Analysis Period (min) 15
 Intersection LOS: B
 ICU Level of Service E

Splits and Phases: 5: Saigon Ct & Carling Ave WB



Lanes, Volumes, Timings
6: Carling Ave EB & Saigon Ct

12/06/2022

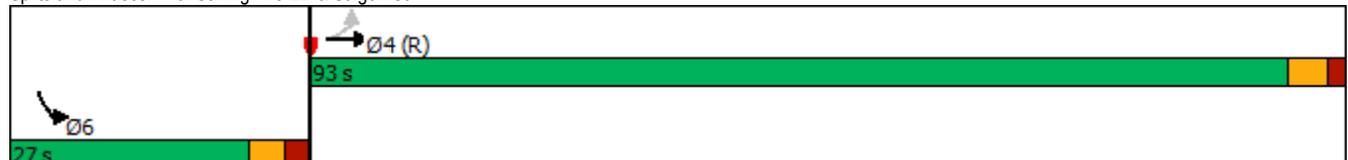


| Lane Group | EBT | SBL |
|------------------------|-------|-------|
| Lane Configurations | | |
| Traffic Volume (vph) | 1250 | 119 |
| Future Volume (vph) | 1250 | 119 |
| Lane Group Flow (vph) | 1295 | 119 |
| Turn Type | NA | Prot |
| Protected Phases | 4 | 6 |
| Permitted Phases | | |
| Detector Phase | 4 | 6 |
| Switch Phase | | |
| Minimum Initial (s) | 10.0 | 5.0 |
| Minimum Split (s) | 15.4 | 22.6 |
| Total Split (s) | 93.0 | 27.0 |
| Total Split (%) | 77.5% | 22.5% |
| Yellow Time (s) | 3.7 | 3.3 |
| All-Red Time (s) | 1.7 | 2.3 |
| Lost Time Adjust (s) | 0.0 | 0.0 |
| Total Lost Time (s) | 5.4 | 5.6 |
| Lead/Lag | | |
| Lead-Lag Optimize? | | |
| Recall Mode | C-Max | None |
| Act Effct Green (s) | 99.3 | 9.7 |
| Actuated g/C Ratio | 0.83 | 0.08 |
| v/c Ratio | 0.46 | 0.45 |
| Control Delay | 1.0 | 45.0 |
| Queue Delay | 0.0 | 0.0 |
| Total Delay | 1.0 | 45.0 |
| LOS | A | D |
| Approach Delay | 1.0 | 45.0 |
| Approach LOS | A | D |
| Queue Length 50th (m) | 5.0 | 15.1 |
| Queue Length 95th (m) | 5.9 | 24.7 |
| Internal Link Dist (m) | 110.2 | 45.3 |
| Turn Bay Length (m) | | |
| Base Capacity (vph) | 2799 | 586 |
| Starvation Cap Reductn | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 |
| Storage Cap Reductn | 0 | 0 |
| Reduced v/c Ratio | 0.46 | 0.20 |

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 105 (88%), Referenced to phase 4:EBTL, Start of Green
 Natural Cycle: 55
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.46
 Intersection Signal Delay: 4.7
 Intersection Capacity Utilization 51.2%
 Analysis Period (min) 15
 Intersection LOS: A
 ICU Level of Service A

Splits and Phases: 6: Carling Ave EB & Saigon Ct



Lanes, Volumes, Timings
 7: Clyde Ave & Laperriere Ave

12/06/2022



| Lane Group | WBL | NBT | SBT |
|---|------|------------------------|------|
| Lane Configurations | | | |
| Traffic Volume (vph) | 249 | 193 | 246 |
| Future Volume (vph) | 249 | 193 | 246 |
| Lane Group Flow (vph) | 438 | 356 | 389 |
| Sign Control | Stop | Stop | Stop |
| Intersection Summary | | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization 80.6% | | ICU Level of Service D | |
| Analysis Period (min) 15 | | | |

HCM Unsignalized Intersection Capacity Analysis
 7: Clyde Ave & Laperriere Ave

12/06/2022



| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|-----------------------------------|-------|-------|-------|----------------------|------|------|
| Lane Configurations | | | | | | |
| Sign Control | Stop | | Stop | | | Stop |
| Traffic Volume (vph) | 249 | 189 | 193 | 163 | 143 | 246 |
| Future Volume (vph) | 249 | 189 | 193 | 163 | 143 | 246 |
| Peak Hour Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Hourly flow rate (vph) | 249 | 189 | 193 | 163 | 143 | 246 |
| Direction, Lane # | WB 1 | NB 1 | SB 1 | | | |
| Volume Total (vph) | 438 | 356 | 389 | | | |
| Volume Left (vph) | 249 | 0 | 143 | | | |
| Volume Right (vph) | 189 | 163 | 0 | | | |
| Hadj (s) | -0.09 | -0.16 | 0.16 | | | |
| Departure Headway (s) | 5.9 | 5.9 | 6.1 | | | |
| Degree Utilization, x | 0.72 | 0.58 | 0.66 | | | |
| Capacity (veh/h) | 576 | 577 | 554 | | | |
| Control Delay (s) | 22.7 | 16.7 | 20.2 | | | |
| Approach Delay (s) | 22.7 | 16.7 | 20.2 | | | |
| Approach LOS | C | C | C | | | |
| Intersection Summary | | | | | | |
| Delay | | | 20.1 | | | |
| Level of Service | | | C | | | |
| Intersection Capacity Utilization | | | 80.6% | ICU Level of Service | D | |
| Analysis Period (min) | | | 15 | | | |

Lanes, Volumes, Timings
 8: Clyde Ave & Woodward Dr

12/06/2022



| Lane Group | EBL | EBR | NBT | SBT | SBR |
|---|------|-----|------------------------|------|-----|
| Lane Configurations | | | | | |
| Traffic Volume (vph) | 304 | 17 | 52 | 18 | 479 |
| Future Volume (vph) | 304 | 17 | 52 | 18 | 479 |
| Lane Group Flow (vph) | 304 | 17 | 73 | 18 | 479 |
| Sign Control | Free | | Stop | Stop | |
| Intersection Summary | | | | | |
| Control Type: Unsignalized | | | | | |
| Intersection Capacity Utilization 42.1% | | | ICU Level of Service A | | |
| Analysis Period (min) 15 | | | | | |

HCM Unsignalized Intersection Capacity Analysis
 8: Clyde Ave & Woodward Dr

12/06/2022



| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|-----------------------------------|-------------|-------------|-------------|-------------|----------------------|------|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 304 | 17 | 21 | 52 | 18 | 479 |
| Future Volume (Veh/h) | 304 | 17 | 21 | 52 | 18 | 479 |
| Sign Control | Free | | | Stop | Stop | |
| Grade | 0% | | | 0% | 0% | |
| Peak Hour Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Hourly flow rate (vph) | 304 | 17 | 21 | 52 | 18 | 479 |
| Pedestrians | | | | | | |
| Lane Width (m) | | | | | | |
| Walking Speed (m/s) | | | | | | |
| Percent Blockage | | | | | | |
| Right turn flare (veh) | | | | | | 3 |
| Median type | None | | | | | |
| Median storage (veh) | | | | | | |
| Upstream signal (m) | | | | | | |
| pX, platoon unblocked | | | | | | |
| vC, conflicting volume | 0 | | 617 | 608 | 608 | 0 |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | 0 | | 617 | 608 | 608 | 0 |
| tC, single (s) | 4.1 | | 7.1 | 6.5 | 6.5 | 6.2 |
| tC, 2 stage (s) | | | | | | |
| tF (s) | 2.2 | | 3.5 | 4.0 | 4.0 | 3.3 |
| p0 queue free % | 81 | | 89 | 84 | 95 | 56 |
| cM capacity (veh/h) | 1623 | | 185 | 333 | 333 | 1085 |
| Direction, Lane # | EB 1 | EB 2 | NB 1 | SB 1 | | |
| Volume Total | 304 | 17 | 73 | 497 | | |
| Volume Left | 304 | 0 | 21 | 0 | | |
| Volume Right | 0 | 17 | 0 | 479 | | |
| cSH | 1623 | 1700 | 271 | 1126 | | |
| Volume to Capacity | 0.19 | 0.01 | 0.27 | 0.44 | | |
| Queue Length 95th (m) | 5.2 | 0.0 | 8.1 | 17.5 | | |
| Control Delay (s) | 7.7 | 0.0 | 23.1 | 11.1 | | |
| Lane LOS | A | | C | B | | |
| Approach Delay (s) | 7.3 | | 23.1 | 11.1 | | |
| Approach LOS | | | C | B | | |
| Intersection Summary | | | | | | |
| Average Delay | | | 10.7 | | | |
| Intersection Capacity Utilization | | | 42.1% | | ICU Level of Service | A |
| Analysis Period (min) | | | 15 | | | |

Total Future Background 2031

Lanes, Volumes, Timings
2: Clyde Ave/Cole Ave & Carling Ave

12/06/2022



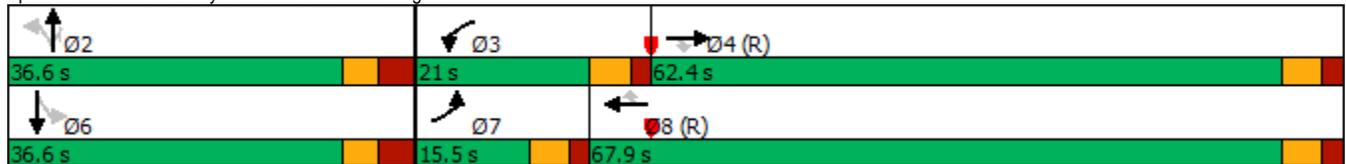
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT |
|------------------------|-------|---------|-------|--------|-------|-------|-------|-------|-------|-------|-------|
| Lane Configurations | | | | | | | | | | | |
| Traffic Volume (vph) | 61 | 1786 | 127 | 234 | 803 | 52 | 121 | 51 | 147 | 35 | 63 |
| Future Volume (vph) | 61 | 1786 | 127 | 234 | 803 | 52 | 121 | 51 | 147 | 35 | 63 |
| Lane Group Flow (vph) | 61 | 1786 | 127 | 234 | 803 | 52 | 121 | 51 | 147 | 35 | 129 |
| Turn Type | Prot | NA | Perm | Prot | NA | Perm | Perm | NA | Perm | Perm | NA |
| Protected Phases | 7 | 4 | | 3 | 8 | | | 2 | | | 6 |
| Permitted Phases | | | 4 | | | 8 | 2 | | 2 | 6 | |
| Detector Phase | 7 | 4 | 4 | 3 | 8 | 8 | 2 | 2 | 2 | 6 | 6 |
| Switch Phase | | | | | | | | | | | |
| Minimum Initial (s) | 5.0 | 10.0 | 10.0 | 5.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 |
| Minimum Split (s) | 10.4 | 30.8 | 30.8 | 10.4 | 30.8 | 30.8 | 36.6 | 36.6 | 36.6 | 36.6 | 36.6 |
| Total Split (s) | 15.5 | 62.4 | 62.4 | 21.0 | 67.9 | 67.9 | 36.6 | 36.6 | 36.6 | 36.6 | 36.6 |
| Total Split (%) | 12.9% | 52.0% | 52.0% | 17.5% | 56.6% | 56.6% | 30.5% | 30.5% | 30.5% | 30.5% | 30.5% |
| Yellow Time (s) | 3.7 | 3.7 | 3.7 | 3.7 | 3.7 | 3.7 | 3.3 | 3.3 | 3.3 | 3.3 | 3.3 |
| All-Red Time (s) | 1.7 | 2.1 | 2.1 | 1.7 | 2.1 | 2.1 | 3.3 | 3.3 | 3.3 | 3.3 | 3.3 |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | 5.4 | 5.8 | 5.8 | 5.4 | 5.8 | 5.8 | 6.6 | 6.6 | 6.6 | 6.6 | 6.6 |
| Lead/Lag | Lead | Lag | Lag | Lead | Lag | Lag | | | | | |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | Yes | Yes | | | | | |
| Recall Mode | None | C-Max | C-Max | None | C-Max | C-Max | None | None | None | None | None |
| Act Effct Green (s) | 9.0 | 58.8 | 58.8 | 24.4 | 76.5 | 76.5 | 19.0 | 19.0 | 19.0 | 19.0 | 19.0 |
| Actuated g/C Ratio | 0.08 | 0.49 | 0.49 | 0.20 | 0.64 | 0.64 | 0.16 | 0.16 | 0.16 | 0.16 | 0.16 |
| v/c Ratio | 0.48 | 1.08 | 0.16 | 0.71 | 0.38 | 0.05 | 0.72 | 0.18 | 0.44 | 0.17 | 0.44 |
| Control Delay | 66.3 | 50.5 | 0.2 | 70.4 | 5.4 | 0.2 | 70.2 | 42.0 | 10.4 | 42.2 | 33.3 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 66.3 | 50.5 | 0.2 | 70.4 | 5.4 | 0.2 | 70.2 | 42.0 | 10.4 | 42.2 | 33.3 |
| LOS | E | D | A | E | A | A | E | D | B | D | C |
| Approach Delay | | 47.8 | | | 19.2 | | | 38.1 | | | 35.2 |
| Approach LOS | | D | | | B | | | D | | | D |
| Queue Length 50th (m) | 15.4 | ~247.5 | 0.1 | 57.4 | 15.7 | 0.1 | 27.6 | 10.6 | 0.0 | 7.3 | 18.6 |
| Queue Length 95th (m) | m16.1 | m#233.6 | m0.0 | #115.7 | 26.1 | m0.1 | 43.2 | 19.6 | 15.7 | 14.9 | 33.2 |
| Internal Link Dist (m) | | 369.5 | | | 273.9 | | | 124.0 | | | 136.4 |
| Turn Bay Length (m) | 20.0 | | 105.0 | 120.0 | | 30.0 | 95.0 | | 5.0 | 20.0 | |
| Base Capacity (vph) | 145 | 1661 | 795 | 331 | 2118 | 963 | 264 | 446 | 439 | 318 | 438 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 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 |
| Reduced v/c Ratio | 0.42 | 1.08 | 0.16 | 0.71 | 0.38 | 0.05 | 0.46 | 0.11 | 0.33 | 0.11 | 0.29 |

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 93 (78%), Referenced to phase 4:EBT and 8:WBT, Start of Green
 Natural Cycle: 150
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.08
 Intersection Signal Delay: 37.5
 Intersection Capacity Utilization 108.7%
 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.
 m Volume for 95th percentile queue is metered by upstream signal.

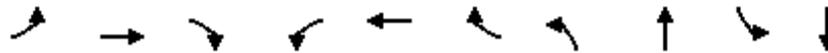
Intersection LOS: D
 ICU Level of Service G

Splits and Phases: 2: Clyde Ave/Cole Ave & Carling Ave



Lanes, Volumes, Timings
3: Broadview Ave & Carling Ave

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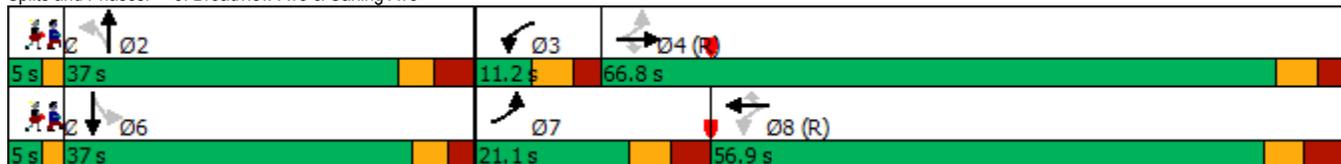


| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | SBL | SBT | Ø1 | Ø5 |
|------------------------|-------|--------|-------|-------|-------|-------|-------|-------|-------|-------|------|------|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 197 | 1804 | 104 | 99 | 781 | 119 | 112 | 24 | 160 | 20 | | |
| Future Volume (vph) | 197 | 1804 | 104 | 99 | 781 | 119 | 112 | 24 | 160 | 20 | | |
| Lane Group Flow (vph) | 197 | 1804 | 104 | 99 | 781 | 119 | 112 | 96 | 160 | 155 | | |
| Turn Type | pm+pt | NA | Perm | pm+pt | NA | Perm | Perm | NA | Perm | NA | | |
| Protected Phases | 7 | 4 | | 3 | 8 | | | 2 | | 6 | 1 | 5 |
| Permitted Phases | 4 | | 4 | 8 | | 8 | 2 | | 6 | | | |
| Detector Phase | 7 | 4 | 4 | 3 | 8 | 8 | 2 | 2 | 6 | 6 | | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 5.0 | 10.0 | 10.0 | 5.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 3.0 | 3.0 |
| Minimum Split (s) | 12.4 | 23.2 | 23.2 | 11.2 | 24.4 | 24.4 | 37.0 | 37.0 | 35.8 | 35.8 | 5.0 | 5.0 |
| Total Split (s) | 21.1 | 66.8 | 66.8 | 11.2 | 56.9 | 56.9 | 37.0 | 37.0 | 37.0 | 37.0 | 5.0 | 5.0 |
| Total Split (%) | 17.6% | 55.7% | 55.7% | 9.3% | 47.4% | 47.4% | 30.8% | 30.8% | 30.8% | 30.8% | 4% | 4% |
| Yellow Time (s) | 3.7 | 3.7 | 3.7 | 3.7 | 3.7 | 3.7 | 3.3 | 3.3 | 3.3 | 3.3 | 2.0 | 2.0 |
| All-Red Time (s) | 3.7 | 2.5 | 2.5 | 2.5 | 3.7 | 3.7 | 3.7 | 3.7 | 2.5 | 2.5 | 0.0 | 0.0 |
| 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) | 7.4 | 6.2 | 6.2 | 6.2 | 7.4 | 7.4 | 7.0 | 7.0 | 5.8 | 5.8 | | |
| Lead/Lag | Lead | Lag | Lag | Lead | Lag | Lag | Lag | Lag | Lag | Lag | Lead | Lead |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Recall Mode | None | C-Max | C-Max | None | C-Max | C-Max | Max | Max | Max | Max | Min | Min |
| Act Effct Green (s) | 69.9 | 60.6 | 60.6 | 57.8 | 51.6 | 51.6 | 30.0 | 30.0 | 31.2 | 31.2 | | |
| Actuated g/C Ratio | 0.58 | 0.50 | 0.50 | 0.48 | 0.43 | 0.43 | 0.25 | 0.25 | 0.26 | 0.26 | | |
| v/c Ratio | 0.54 | 1.05 | 0.15 | 0.76 | 0.56 | 0.18 | 0.46 | 0.22 | 0.52 | 0.34 | | |
| Control Delay | 17.2 | 67.5 | 3.1 | 59.8 | 44.1 | 10.6 | 45.3 | 13.7 | 45.0 | 10.3 | | |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | |
| Total Delay | 17.2 | 67.5 | 3.1 | 59.8 | 44.1 | 10.6 | 45.3 | 13.7 | 45.0 | 10.3 | | |
| LOS | B | E | A | E | D | B | D | B | D | B | | |
| Approach Delay | | 59.6 | | | 41.7 | | | 30.7 | | 27.9 | | |
| Approach LOS | | E | | | D | | | C | | C | | |
| Queue Length 50th (m) | 20.4 | ~244.4 | 0.0 | 16.4 | 86.4 | 5.7 | 22.4 | 4.3 | 32.4 | 3.6 | | |
| Queue Length 95th (m) | 32.2 | #286.7 | 7.7 | #38.3 | 100.8 | 16.6 | 40.8 | 17.8 | 54.5 | 20.2 | | |
| Internal Link Dist (m) | | 239.1 | | | 369.5 | | | 434.9 | | 268.8 | | |
| Turn Bay Length (m) | 70.0 | | 30.0 | 50.0 | | 30.0 | 20.0 | | 45.0 | | | |
| Base Capacity (vph) | 393 | 1711 | 683 | 131 | 1402 | 651 | 244 | 432 | 309 | 458 | | |
| 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 | 1.05 | 0.15 | 0.76 | 0.56 | 0.18 | 0.46 | 0.22 | 0.52 | 0.34 | | |

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 77 (64%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green
 Natural Cycle: 120
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.05
 Intersection Signal Delay: 50.2
 Intersection LOS: D
 Intersection Capacity Utilization 113.8%
 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: 3: Broadview Ave & Carling Ave



Lanes, Volumes, Timings
 4: Clyde Ave & Doheny St/Existing Site Access

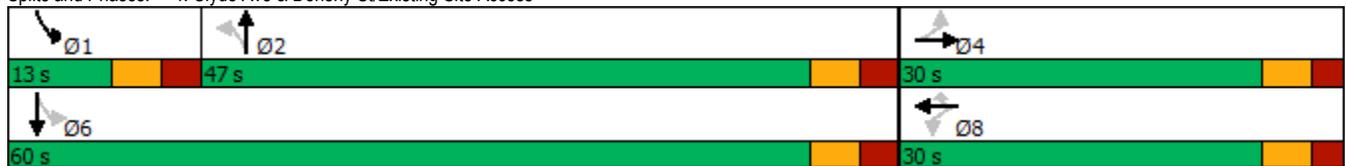
12/06/2022



| Lane Group | EBL | EBT | WBL | WBT | WBR | NBL | NBT | SBL | SBT |
|------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Lane Configurations | | | | | | | | | |
| Traffic Volume (vph) | 34 | 2 | 8 | 3 | 5 | 91 | 298 | 38 | 315 |
| Future Volume (vph) | 34 | 2 | 8 | 3 | 5 | 91 | 298 | 38 | 315 |
| Lane Group Flow (vph) | 0 | 96 | 0 | 11 | 5 | 91 | 307 | 38 | 395 |
| Turn Type | Perm | NA | Perm | NA | Perm | Perm | NA | pm+pt | NA |
| Protected Phases | | 4 | | 8 | | | 2 | 1 | 6 |
| Permitted Phases | 4 | | 8 | | 8 | 2 | | 6 | |
| 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 | 10.0 | 10.0 | 5.0 | 10.0 |
| Minimum Split (s) | 24.6 | 24.6 | 24.6 | 24.6 | 24.6 | 29.0 | 29.0 | 11.0 | 29.0 |
| Total Split (s) | 30.0 | 30.0 | 30.0 | 30.0 | 30.0 | 47.0 | 47.0 | 13.0 | 60.0 |
| Total Split (%) | 33.3% | 33.3% | 33.3% | 33.3% | 33.3% | 52.2% | 52.2% | 14.4% | 66.7% |
| Yellow Time (s) | 3.3 | 3.3 | 3.3 | 3.3 | 3.3 | 3.3 | 3.3 | 3.3 | 3.3 |
| All-Red Time (s) | 2.3 | 2.3 | 2.3 | 2.3 | 2.3 | 2.7 | 2.7 | 2.7 | 2.7 |
| Lost Time Adjust (s) | | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | | 5.6 | | 5.6 | 5.6 | 6.0 | 6.0 | 6.0 | 6.0 |
| Lead/Lag | | | | | | Lag | Lag | Lead | |
| Lead-Lag Optimize? | | | | | | Yes | Yes | Yes | |
| Recall Mode | None | None | None | None | None | Max | Max | None | Max |
| Act Effct Green (s) | | 11.8 | | 11.8 | 11.8 | 53.9 | 53.9 | 60.2 | 61.5 |
| Actuated g/C Ratio | | 0.15 | | 0.15 | 0.15 | 0.67 | 0.67 | 0.75 | 0.77 |
| v/c Ratio | | 0.37 | | 0.05 | 0.02 | 0.14 | 0.27 | 0.05 | 0.31 |
| Control Delay | | 18.0 | | 27.8 | 0.0 | 10.1 | 9.8 | 4.4 | 5.0 |
| Queue Delay | | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | | 18.0 | | 27.8 | 0.0 | 10.1 | 9.8 | 4.4 | 5.0 |
| LOS | | B | | C | A | B | A | A | A |
| Approach Delay | | 18.0 | | 19.1 | | | 9.9 | | 5.0 |
| Approach LOS | | B | | B | | | A | | A |
| Queue Length 50th (m) | | 4.7 | | 1.4 | 0.0 | 5.9 | 21.7 | 1.3 | 15.7 |
| Queue Length 95th (m) | | 16.6 | | 5.4 | 0.0 | 17.0 | 48.1 | 5.2 | 39.9 |
| Internal Link Dist (m) | | 281.3 | | 151.2 | | | 265.7 | | 124.0 |
| Turn Bay Length (m) | | | | | 40.0 | 45.0 | | | |
| Base Capacity (vph) | | 471 | | 459 | 527 | 632 | 1117 | 746 | 1284 |
| 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 | | 0.20 | | 0.02 | 0.01 | 0.14 | 0.27 | 0.05 | 0.31 |

| Intersection Summary | |
|---|------------------------|
| Cycle Length: 90 | |
| Actuated Cycle Length: 80.3 | |
| Natural Cycle: 65 | |
| Control Type: Actuated-Uncoordinated | |
| Maximum v/c Ratio: 0.37 | |
| Intersection Signal Delay: 8.6 | Intersection LOS: A |
| Intersection Capacity Utilization 59.0% | ICU Level of Service B |
| Analysis Period (min) 15 | |

Splits and Phases: 4: Clyde Ave & Doheny St/Existing Site Access



Lanes, Volumes, Timings
5: Saigon Ct & Carling Ave WB

12/06/2022



| Lane Group | WBL | WBT | WBR | NBL | NBT | SBT |
|------------------------|-------|-------|-------|-------|-------|-------|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 29 | 1077 | 58 | 22 | 52 | 26 |
| Future Volume (vph) | 29 | 1077 | 58 | 22 | 52 | 26 |
| Lane Group Flow (vph) | 29 | 1077 | 58 | 0 | 74 | 35 |
| Turn Type | Perm | NA | Perm | Perm | NA | NA |
| Protected Phases | | 8 | | | 2 | 6 |
| Permitted Phases | 8 | | 8 | 2 | | |
| Detector Phase | 8 | 8 | 8 | 2 | 2 | 6 |
| Switch Phase | | | | | | |
| Minimum Initial (s) | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 |
| Minimum Split (s) | 29.7 | 29.7 | 29.7 | 26.7 | 26.7 | 26.7 |
| Total Split (s) | 87.0 | 87.0 | 87.0 | 33.0 | 33.0 | 33.0 |
| Total Split (%) | 72.5% | 72.5% | 72.5% | 27.5% | 27.5% | 27.5% |
| Yellow Time (s) | 3.7 | 3.7 | 3.7 | 3.3 | 3.3 | 3.3 |
| All-Red Time (s) | 2.0 | 2.0 | 2.0 | 2.4 | 2.4 | 2.4 |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 |
| Total Lost Time (s) | 5.7 | 5.7 | 5.7 | | 5.7 | 5.7 |
| Lead/Lag | | | | | | |
| Lead-Lag Optimize? | | | | | | |
| Recall Mode | C-Max | C-Max | C-Max | None | None | None |
| Act Effct Green (s) | 101.2 | 101.2 | 101.2 | | 11.7 | 11.7 |
| Actuated g/C Ratio | 0.84 | 0.84 | 0.84 | | 0.10 | 0.10 |
| v/c Ratio | 0.02 | 0.39 | 0.05 | | 0.48 | 0.20 |
| Control Delay | 2.6 | 3.5 | 0.8 | | 49.8 | 41.7 |
| Queue Delay | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 |
| Total Delay | 2.6 | 3.5 | 0.8 | | 49.8 | 41.7 |
| LOS | A | A | A | | D | D |
| Approach Delay | | 3.3 | | | 49.8 | 41.7 |
| Approach LOS | | A | | | D | D |
| Queue Length 50th (m) | 1.0 | 28.7 | 0.0 | | 15.9 | 5.8 |
| Queue Length 95th (m) | 3.2 | 45.1 | 2.5 | | m21.1 | 15.2 |
| Internal Link Dist (m) | | 298.8 | | | 45.3 | 50.2 |
| Turn Bay Length (m) | 50.0 | | 40.0 | | | |
| Base Capacity (vph) | 1429 | 2776 | 1237 | | 360 | 398 |
| Starvation Cap Reductn | 0 | 0 | 0 | | 14 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | | 0 | 0 |
| Reduced v/c Ratio | 0.02 | 0.39 | 0.05 | | 0.21 | 0.09 |

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 62 (52%), Referenced to phase 8:WBTL, Start of Green
 Natural Cycle: 60
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.48
 Intersection Signal Delay: 7.1
 Intersection Capacity Utilization 51.8%
 Analysis Period (min) 15
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 5: Saigon Ct & Carling Ave WB



Lanes, Volumes, Timings
6: Carling Ave EB & Saigon Ct

12/06/2022

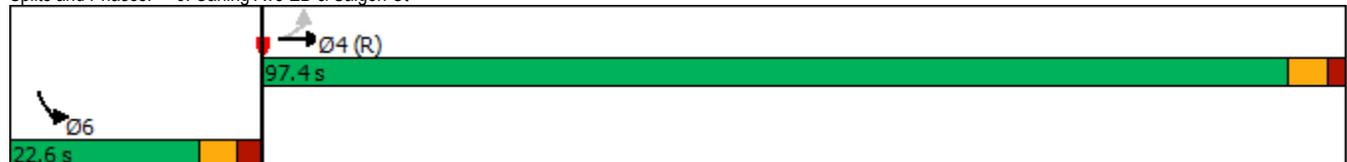


| Lane Group | EBT | SBL |
|------------------------|-------|-------|
| Lane Configurations | | |
| Traffic Volume (vph) | 2101 | 42 |
| Future Volume (vph) | 2101 | 42 |
| Lane Group Flow (vph) | 2206 | 42 |
| Turn Type | NA | Prot |
| Protected Phases | 4 | 6 |
| Permitted Phases | | |
| Detector Phase | 4 | 6 |
| Switch Phase | | |
| Minimum Initial (s) | 10.0 | 5.0 |
| Minimum Split (s) | 15.4 | 22.6 |
| Total Split (s) | 97.4 | 22.6 |
| Total Split (%) | 81.2% | 18.8% |
| Yellow Time (s) | 3.7 | 3.3 |
| All-Red Time (s) | 1.7 | 2.3 |
| Lost Time Adjust (s) | 0.0 | 0.0 |
| Total Lost Time (s) | 5.4 | 5.6 |
| Lead/Lag | | |
| Lead-Lag Optimize? | | |
| Recall Mode | C-Max | None |
| Act Effct Green (s) | 105.3 | 7.0 |
| Actuated g/C Ratio | 0.88 | 0.06 |
| v/c Ratio | 0.74 | 0.22 |
| Control Delay | 4.3 | 52.9 |
| Queue Delay | 0.0 | 0.0 |
| Total Delay | 4.3 | 52.9 |
| LOS | A | D |
| Approach Delay | 4.3 | 52.9 |
| Approach LOS | A | D |
| Queue Length 50th (m) | 30.5 | 5.2 |
| Queue Length 95th (m) | m15.9 | 11.1 |
| Internal Link Dist (m) | 110.2 | 45.3 |
| Turn Bay Length (m) | | |
| Base Capacity (vph) | 2969 | 465 |
| Starvation Cap Reductn | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 |
| Storage Cap Reductn | 0 | 0 |
| Reduced v/c Ratio | 0.74 | 0.09 |

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 105 (88%), Referenced to phase 4:EBTL, Start of Green
 Natural Cycle: 90
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.74
 Intersection Signal Delay: 5.2
 Intersection Capacity Utilization 77.9%
 Analysis Period (min) 15
 Intersection LOS: A
 ICU Level of Service D
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 6: Carling Ave EB & Saigon Ct



Lanes, Volumes, Timings
 7: Clyde Ave & Laperriere Ave

12/06/2022



| Lane Group | WBL | NBT | SBT |
|---|------|------------------------|------|
| Lane Configurations | | | |
| Traffic Volume (vph) | 128 | 212 | 189 |
| Future Volume (vph) | 128 | 212 | 189 |
| Lane Group Flow (vph) | 363 | 384 | 378 |
| Sign Control | Stop | Stop | Stop |
| Intersection Summary | | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization 77.6% | | ICU Level of Service D | |
| Analysis Period (min) 15 | | | |

HCM Unsignalized Intersection Capacity Analysis
 7: Clyde Ave & Laperriere Ave

12/06/2022



| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|-----------------------------------|-------|-------|-------|----------------------|------|------|
| Lane Configurations | | | | | | |
| Sign Control | Stop | | Stop | | | Stop |
| Traffic Volume (vph) | 128 | 235 | 212 | 172 | 189 | 189 |
| Future Volume (vph) | 128 | 235 | 212 | 172 | 189 | 189 |
| Peak Hour Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Hourly flow rate (vph) | 128 | 235 | 212 | 172 | 189 | 189 |
| Direction, Lane # | WB 1 | NB 1 | SB 1 | | | |
| Volume Total (vph) | 363 | 384 | 378 | | | |
| Volume Left (vph) | 128 | 0 | 189 | | | |
| Volume Right (vph) | 235 | 172 | 0 | | | |
| Hadj (s) | -0.27 | -0.11 | 0.19 | | | |
| Departure Headway (s) | 5.7 | 5.6 | 5.8 | | | |
| Degree Utilization, x | 0.57 | 0.59 | 0.61 | | | |
| Capacity (veh/h) | 584 | 614 | 581 | | | |
| Control Delay (s) | 16.1 | 16.3 | 17.7 | | | |
| Approach Delay (s) | 16.1 | 16.3 | 17.7 | | | |
| Approach LOS | C | C | C | | | |
| Intersection Summary | | | | | | |
| Delay | | | 16.7 | | | |
| Level of Service | | | C | | | |
| Intersection Capacity Utilization | | | 77.6% | ICU Level of Service | D | |
| Analysis Period (min) | | | 15 | | | |

Lanes, Volumes, Timings
 8: Clyde Ave & Woodward Dr

12/06/2022



| Lane Group | EBL | EBR | NBT | SBT | SBR |
|---|------|-----|------------------------|------|-----|
| Lane Configurations | | | | | |
| Traffic Volume (vph) | 346 | 8 | 38 | 47 | 270 |
| Future Volume (vph) | 346 | 8 | 38 | 47 | 270 |
| Lane Group Flow (vph) | 346 | 8 | 50 | 47 | 270 |
| Sign Control | Free | | Stop | Stop | |
| Intersection Summary | | | | | |
| Control Type: Unsignalized | | | | | |
| Intersection Capacity Utilization 36.4% | | | ICU Level of Service A | | |
| Analysis Period (min) 15 | | | | | |

HCM Unsignalized Intersection Capacity Analysis
 8: Clyde Ave & Woodward Dr

12/06/2022



| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|-----------------------------------|-------------|-------------|-------------|----------------------|------|------|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 346 | 8 | 12 | 38 | 47 | 270 |
| Future Volume (Veh/h) | 346 | 8 | 12 | 38 | 47 | 270 |
| Sign Control | Free | | | Stop | Stop | |
| Grade | 0% | | | 0% | 0% | |
| Peak Hour Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Hourly flow rate (vph) | 346 | 8 | 12 | 38 | 47 | 270 |
| Pedestrians | | | | | | |
| Lane Width (m) | | | | | | |
| Walking Speed (m/s) | | | | | | |
| Percent Blockage | | | | | | |
| Right turn flare (veh) | 3 | | | | | |
| Median type | None | | | | | |
| Median storage (veh) | | | | | | |
| Upstream signal (m) | | | | | | |
| pX, platoon unblocked | | | | | | |
| vC, conflicting volume | 0 | | 716 | 692 | 692 | 0 |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | 0 | | 716 | 692 | 692 | 0 |
| tC, single (s) | 4.1 | | 7.1 | 6.5 | 6.5 | 6.2 |
| tC, 2 stage (s) | | | | | | |
| tF (s) | 2.2 | | 3.5 | 4.0 | 4.0 | 3.3 |
| p0 queue free % | 79 | | 94 | 87 | 84 | 75 |
| cM capacity (veh/h) | 1623 | | 191 | 289 | 289 | 1085 |
| Direction, Lane # | EB 1 | EB 2 | NB 1 | SB 1 | | |
| Volume Total | 346 | 8 | 50 | 317 | | |
| Volume Left | 346 | 0 | 12 | 0 | | |
| Volume Right | 0 | 8 | 0 | 270 | | |
| cSH | 1623 | 1700 | 257 | 1274 | | |
| Volume to Capacity | 0.21 | 0.00 | 0.19 | 0.25 | | |
| Queue Length 95th (m) | 6.1 | 0.0 | 5.4 | 7.5 | | |
| Control Delay (s) | 7.8 | 0.0 | 22.3 | 11.0 | | |
| Lane LOS | A | | C | B | | |
| Approach Delay (s) | 7.6 | | 22.3 | 11.0 | | |
| Approach LOS | | | C | B | | |
| Intersection Summary | | | | | | |
| Average Delay | | | 10.1 | | | |
| Intersection Capacity Utilization | | | 36.4% | ICU Level of Service | A | |
| Analysis Period (min) | | | 15 | | | |

Lanes, Volumes, Timings
1: Churchill Ave & Carling Ave

12/06/2022



| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | SBL | SBT | Ø1 | Ø5 |
|------------------------|--------|-------|-------|-------|--------|-------|-------|-------|-------|-------|------|------|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 252 | 990 | 33 | 114 | 1987 | 218 | 105 | 40 | 187 | 18 | | |
| Future Volume (vph) | 252 | 990 | 33 | 114 | 1987 | 218 | 105 | 40 | 187 | 18 | | |
| Lane Group Flow (vph) | 252 | 990 | 33 | 114 | 1987 | 218 | 105 | 113 | 187 | 304 | | |
| Turn Type | Prot | NA | Perm | Prot | NA | Perm | Perm | NA | Perm | NA | | |
| Protected Phases | 7 | 4 | | 3 | 8 | | | 2 | | 6 | 1 | 5 |
| Permitted Phases | | | 4 | | | 8 | 2 | | 6 | | | |
| Detector Phase | 7 | 4 | 4 | 3 | 8 | 8 | 2 | 2 | 6 | 6 | | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 5.0 | 10.0 | 10.0 | 5.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 3.0 | 3.0 |
| Minimum Split (s) | 11.1 | 34.1 | 34.1 | 11.1 | 34.1 | 34.1 | 39.8 | 39.8 | 39.8 | 39.8 | 5.0 | 5.0 |
| Total Split (s) | 18.0 | 57.2 | 57.2 | 18.0 | 57.2 | 57.2 | 39.8 | 39.8 | 39.8 | 39.8 | 5.0 | 5.0 |
| Total Split (%) | 15.0% | 47.7% | 47.7% | 15.0% | 47.7% | 47.7% | 33.2% | 33.2% | 33.2% | 33.2% | 4% | 4% |
| Yellow Time (s) | 3.7 | 3.7 | 3.7 | 3.7 | 3.7 | 3.7 | 3.3 | 3.3 | 3.3 | 3.3 | 2.0 | 2.0 |
| All-Red Time (s) | 2.4 | 2.4 | 2.4 | 2.4 | 2.4 | 2.4 | 3.5 | 3.5 | 3.5 | 3.5 | 0.0 | 0.0 |
| 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) | 6.1 | 6.1 | 6.1 | 6.1 | 6.1 | 6.1 | 6.8 | 6.8 | 6.8 | 6.8 | | |
| Lead/Lag | Lead | Lag | Lag | Lead | Lag | Lag | Lag | Lag | Lag | Lag | Lead | Lead |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Recall Mode | None | C-Max | C-Max | None | C-Max | C-Max | Max | Max | Max | Max | None | None |
| Act Effct Green (s) | 11.9 | 51.8 | 51.8 | 11.2 | 51.1 | 51.1 | 38.0 | 38.0 | 38.0 | 38.0 | | |
| Actuated g/C Ratio | 0.10 | 0.43 | 0.43 | 0.09 | 0.43 | 0.43 | 0.32 | 0.32 | 0.32 | 0.32 | | |
| v/c Ratio | 1.50 | 0.68 | 0.05 | 0.73 | 1.38 | 0.32 | 0.44 | 0.20 | 0.49 | 0.48 | | |
| Control Delay | 293.0 | 21.9 | 0.5 | 79.4 | 199.5 | 8.0 | 39.8 | 13.2 | 38.4 | 9.8 | | |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | |
| Total Delay | 293.0 | 21.9 | 0.5 | 79.4 | 199.5 | 8.0 | 39.8 | 13.2 | 38.4 | 9.8 | | |
| LOS | F | C | A | E | F | A | D | B | D | A | | |
| Approach Delay | | 74.9 | | | 175.6 | | | 26.0 | | 20.7 | | |
| Approach LOS | | E | | | F | | | C | | C | | |
| Queue Length 50th (m) | ~85.1 | 44.8 | 0.0 | 25.0 | ~329.0 | 8.8 | 19.6 | 6.6 | 35.5 | 9.5 | | |
| Queue Length 95th (m) | #137.5 | 66.3 | m0.2 | m34.2 | #368.3 | m13.2 | 37.2 | 19.9 | 58.2 | 33.2 | | |
| Internal Link Dist (m) | | 273.9 | | | 176.6 | | | 177.0 | | 412.2 | | |
| Turn Bay Length (m) | 65.0 | | 30.0 | 65.0 | | 40.0 | 20.0 | | 20.0 | | | |
| Base Capacity (vph) | 168 | 1464 | 678 | 168 | 1443 | 676 | 237 | 552 | 382 | 636 | | |
| 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 | 1.50 | 0.68 | 0.05 | 0.68 | 1.38 | 0.32 | 0.44 | 0.20 | 0.49 | 0.48 | | |

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 92 (77%), Referenced to phase 4:EBT and 8:WBT, Start of Green
 Natural Cycle: 150
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.50
 Intersection Signal Delay: 120.5
 Intersection LOS: F
 Intersection Capacity Utilization 132.6%
 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.
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: Churchill Ave & Carling Ave



Lanes, Volumes, Timings
2: Clyde Ave/Cole Ave & Carling Ave

12/06/2022

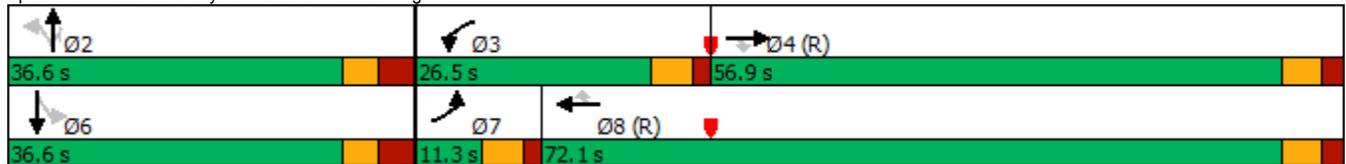


| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT |
|------------------------|--------|-------|-------|-------|--------|-------|-------|-------|-------|-------|-------|
| Lane Configurations | | | | | | | | | | | |
| Traffic Volume (vph) | 77 | 992 | 131 | 234 | 2048 | 58 | 126 | 87 | 155 | 22 | 54 |
| Future Volume (vph) | 77 | 992 | 131 | 234 | 2048 | 58 | 126 | 87 | 155 | 22 | 54 |
| Lane Group Flow (vph) | 77 | 992 | 131 | 234 | 2048 | 58 | 126 | 87 | 155 | 22 | 116 |
| Turn Type | Prot | NA | Perm | Prot | NA | Perm | Perm | NA | Perm | Perm | NA |
| Protected Phases | 7 | 4 | | 3 | 8 | | | 2 | | | 6 |
| Permitted Phases | | | 4 | | | 8 | 2 | | 2 | 6 | |
| Detector Phase | 7 | 4 | 4 | 3 | 8 | 8 | 2 | 2 | 2 | 6 | 6 |
| Switch Phase | | | | | | | | | | | |
| Minimum Initial (s) | 5.0 | 10.0 | 10.0 | 5.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 |
| Minimum Split (s) | 10.4 | 30.8 | 30.8 | 10.4 | 30.8 | 30.8 | 36.6 | 36.6 | 36.6 | 36.6 | 36.6 |
| Total Split (s) | 11.3 | 56.9 | 56.9 | 26.5 | 72.1 | 72.1 | 36.6 | 36.6 | 36.6 | 36.6 | 36.6 |
| Total Split (%) | 9.4% | 47.4% | 47.4% | 22.1% | 60.1% | 60.1% | 30.5% | 30.5% | 30.5% | 30.5% | 30.5% |
| Yellow Time (s) | 3.7 | 3.7 | 3.7 | 3.7 | 3.7 | 3.7 | 3.3 | 3.3 | 3.3 | 3.3 | 3.3 |
| All-Red Time (s) | 1.7 | 2.1 | 2.1 | 1.7 | 2.1 | 2.1 | 3.3 | 3.3 | 3.3 | 3.3 | 3.3 |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | 5.4 | 5.8 | 5.8 | 5.4 | 5.8 | 5.8 | 6.6 | 6.6 | 6.6 | 6.6 | 6.6 |
| Lead/Lag | Lead | Lag | Lag | Lead | Lag | Lag | | | | | |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | Yes | Yes | | | | | |
| Recall Mode | None | C-Max | C-Max | None | C-Max | C-Max | None | None | None | None | None |
| Act Effct Green (s) | 9.0 | 61.9 | 61.9 | 19.8 | 72.7 | 72.7 | 20.5 | 20.5 | 20.5 | 20.5 | 20.5 |
| Actuated g/C Ratio | 0.08 | 0.52 | 0.52 | 0.16 | 0.61 | 0.61 | 0.17 | 0.17 | 0.17 | 0.17 | 0.17 |
| v/c Ratio | 0.61 | 0.57 | 0.16 | 0.84 | 1.00 | 0.07 | 0.62 | 0.29 | 0.44 | 0.10 | 0.37 |
| Control Delay | 73.3 | 10.0 | 0.6 | 52.8 | 33.2 | 3.5 | 57.5 | 43.0 | 14.4 | 38.6 | 27.6 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 73.3 | 10.0 | 0.6 | 52.8 | 33.2 | 3.5 | 57.5 | 43.0 | 14.4 | 38.6 | 27.6 |
| LOS | E | B | A | D | C | A | E | D | B | D | C |
| Approach Delay | | 13.1 | | | 34.4 | | | 35.9 | | | 29.4 |
| Approach LOS | | B | | | C | | | D | | | C |
| Queue Length 50th (m) | 19.0 | 25.8 | 0.0 | 58.3 | ~146.0 | 0.9 | 28.6 | 18.6 | 6.4 | 4.6 | 14.9 |
| Queue Length 95th (m) | m#40.1 | 30.4 | m1.2 | m49.2 | m88.3 | m0.7 | 43.7 | 29.9 | 22.7 | 10.8 | 28.7 |
| Internal Link Dist (m) | | 369.5 | | | 273.9 | | | 124.0 | | | 136.4 |
| Turn Bay Length (m) | 20.0 | | 105.0 | 120.0 | | 30.0 | 95.0 | | 5.0 | 20.0 | |
| Base Capacity (vph) | 127 | 1749 | 822 | 301 | 2053 | 891 | 298 | 446 | 459 | 307 | 440 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 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 |
| Reduced v/c Ratio | 0.61 | 0.57 | 0.16 | 0.78 | 1.00 | 0.07 | 0.42 | 0.20 | 0.34 | 0.07 | 0.26 |

Intersection Summary

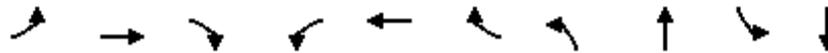
Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 93 (78%), Referenced to phase 4:EBT and 8:WBT, Start of Green
 Natural Cycle: 140
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.00
 Intersection Signal Delay: 28.1
 Intersection Capacity Utilization 97.7%
 Analysis Period (min) 15
 ~ 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.
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: Clyde Ave/Cole Ave & Carling Ave



Lanes, Volumes, Timings
3: Broadview Ave & Carling Ave

12/06/2022

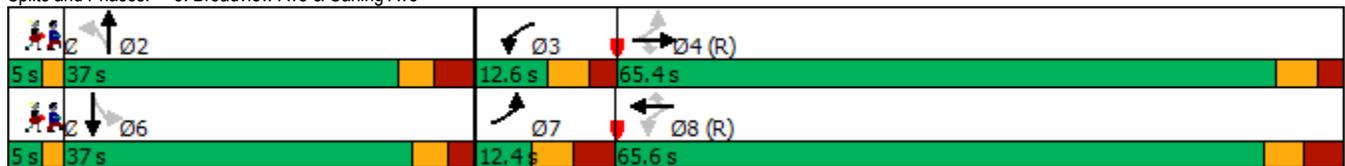


| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | SBL | SBT | Ø1 | Ø5 |
|------------------------|-------|-------|-------|-------|---------|-------|-------|-------|-------|-------|------|------|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 94 | 1134 | 31 | 67 | 2126 | 67 | 181 | 35 | 67 | 23 | | |
| Future Volume (vph) | 94 | 1134 | 31 | 67 | 2126 | 67 | 181 | 35 | 67 | 23 | | |
| Lane Group Flow (vph) | 94 | 1134 | 31 | 67 | 2126 | 67 | 181 | 68 | 67 | 173 | | |
| Turn Type | pm+pt | NA | Perm | pm+pt | NA | Perm | Perm | NA | Perm | NA | | |
| Protected Phases | 7 | 4 | | 3 | 8 | | | 2 | | 6 | 1 | 5 |
| Permitted Phases | 4 | | 4 | 8 | | 8 | 2 | | 6 | | | |
| Detector Phase | 7 | 4 | 4 | 3 | 8 | 8 | 2 | 2 | 6 | 6 | | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 5.0 | 10.0 | 10.0 | 5.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 3.0 | 3.0 |
| Minimum Split (s) | 12.4 | 23.2 | 23.2 | 11.2 | 24.4 | 24.4 | 37.0 | 37.0 | 35.8 | 35.8 | 5.0 | 5.0 |
| Total Split (s) | 12.4 | 65.4 | 65.4 | 12.6 | 65.6 | 65.6 | 37.0 | 37.0 | 37.0 | 37.0 | 5.0 | 5.0 |
| Total Split (%) | 10.3% | 54.5% | 54.5% | 10.5% | 54.7% | 54.7% | 30.8% | 30.8% | 30.8% | 30.8% | 4% | 4% |
| Yellow Time (s) | 3.7 | 3.7 | 3.7 | 3.7 | 3.7 | 3.7 | 3.3 | 3.3 | 3.3 | 3.3 | 2.0 | 2.0 |
| All-Red Time (s) | 3.7 | 2.5 | 2.5 | 2.5 | 3.7 | 3.7 | 3.7 | 3.7 | 2.5 | 2.5 | 0.0 | 0.0 |
| 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) | 7.4 | 6.2 | 6.2 | 6.2 | 7.4 | 7.4 | 7.0 | 7.0 | 5.8 | 5.8 | | |
| Lead/Lag | Lead | Lag | Lag | Lead | Lag | Lag | Lag | Lag | Lag | Lag | Lead | Lead |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Recall Mode | None | C-Max | C-Max | None | C-Max | C-Max | Max | Max | Max | Max | Min | Min |
| Act Effct Green (s) | 64.5 | 61.7 | 61.7 | 65.7 | 58.2 | 58.2 | 30.0 | 30.0 | 31.2 | 31.2 | | |
| Actuated g/C Ratio | 0.54 | 0.51 | 0.51 | 0.55 | 0.48 | 0.48 | 0.25 | 0.25 | 0.26 | 0.26 | | |
| v/c Ratio | 0.73 | 0.65 | 0.04 | 0.30 | 1.29 | 0.09 | 0.74 | 0.16 | 0.21 | 0.36 | | |
| Control Delay | 50.2 | 24.2 | 0.1 | 16.4 | 164.5 | 2.8 | 60.4 | 21.3 | 36.8 | 12.2 | | |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | |
| Total Delay | 50.2 | 24.2 | 0.1 | 16.4 | 164.5 | 2.8 | 60.4 | 21.3 | 36.8 | 12.2 | | |
| LOS | D | C | A | B | F | A | E | C | D | B | | |
| Approach Delay | | 25.5 | | | 155.3 | | | 49.8 | | 19.1 | | |
| Approach LOS | | C | | | F | | | D | | B | | |
| Queue Length 50th (m) | 9.2 | 103.7 | 0.0 | 7.7 | ~334.0 | 0.0 | 39.3 | 6.3 | 12.4 | 7.0 | | |
| Queue Length 95th (m) | #34.4 | 127.2 | 0.0 | m8.6 | m#338.0 | m0.0 | #72.9 | 17.9 | 24.7 | 25.3 | | |
| Internal Link Dist (m) | | 239.1 | | | 369.5 | | | 434.9 | | 268.8 | | |
| Turn Bay Length (m) | 70.0 | | 30.0 | 50.0 | | 30.0 | 20.0 | | 45.0 | | | |
| Base Capacity (vph) | 129 | 1743 | 779 | 227 | 1644 | 715 | 246 | 432 | 325 | 485 | | |
| 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 | 0.73 | 0.65 | 0.04 | 0.30 | 1.29 | 0.09 | 0.74 | 0.16 | 0.21 | 0.36 | | |

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 77 (64%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green
 Natural Cycle: 150
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.29
 Intersection Signal Delay: 99.8
 Intersection Capacity Utilization 126.1%
 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.
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 3: Broadview Ave & Carling Ave



Lanes, Volumes, Timings
 4: Clyde Ave & Doheny St/Existing Site Access

12/06/2022

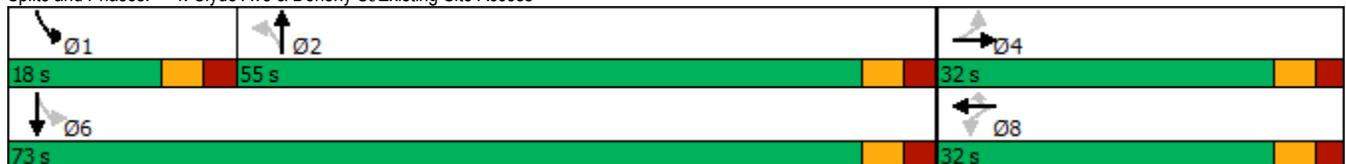


| Lane Group | EBL | EBT | WBL | WBT | WBR | NBL | NBT | SBL | SBT |
|------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Lane Configurations | | | | | | | | | |
| Traffic Volume (vph) | 24 | 5 | 27 | 9 | 20 | 32 | 303 | 79 | 273 |
| Future Volume (vph) | 24 | 5 | 27 | 9 | 20 | 32 | 303 | 79 | 273 |
| Lane Group Flow (vph) | 0 | 81 | 0 | 36 | 20 | 32 | 323 | 79 | 328 |
| Turn Type | Perm | NA | Perm | NA | Perm | Perm | NA | pm+pt | NA |
| Protected Phases | | 4 | | 8 | | | 2 | 1 | 6 |
| Permitted Phases | 4 | | 8 | | 8 | 2 | | 6 | |
| 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 | 10.0 | 10.0 | 5.0 | 10.0 |
| Minimum Split (s) | 24.6 | 24.6 | 24.6 | 24.6 | 24.6 | 29.0 | 29.0 | 11.0 | 29.0 |
| Total Split (s) | 32.0 | 32.0 | 32.0 | 32.0 | 32.0 | 55.0 | 55.0 | 18.0 | 73.0 |
| Total Split (%) | 30.5% | 30.5% | 30.5% | 30.5% | 30.5% | 52.4% | 52.4% | 17.1% | 69.5% |
| Yellow Time (s) | 3.3 | 3.3 | 3.3 | 3.3 | 3.3 | 3.3 | 3.3 | 3.3 | 3.3 |
| All-Red Time (s) | 2.3 | 2.3 | 2.3 | 2.3 | 2.3 | 2.7 | 2.7 | 2.7 | 2.7 |
| Lost Time Adjust (s) | | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | | 5.6 | | 5.6 | 5.6 | 6.0 | 6.0 | 6.0 | 6.0 |
| Lead/Lag | | | | | | Lag | Lag | Lead | |
| Lead-Lag Optimize? | | | | | | Yes | Yes | Yes | |
| Recall Mode | None | None | None | None | None | Max | Max | None | Max |
| Act Effct Green (s) | | 11.7 | | 11.7 | 11.7 | 61.1 | 61.1 | 70.2 | 71.4 |
| Actuated g/C Ratio | | 0.13 | | 0.13 | 0.13 | 0.68 | 0.68 | 0.78 | 0.79 |
| v/c Ratio | | 0.35 | | 0.20 | 0.07 | 0.05 | 0.28 | 0.11 | 0.25 |
| Control Delay | | 20.5 | | 37.4 | 0.5 | 8.9 | 9.5 | 3.9 | 4.1 |
| Queue Delay | | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | | 20.5 | | 37.4 | 0.5 | 8.9 | 9.5 | 3.9 | 4.1 |
| LOS | | C | | D | A | A | A | A | A |
| Approach Delay | | 20.5 | | 24.2 | | | 9.4 | | 4.1 |
| Approach LOS | | C | | C | | | A | | A |
| Queue Length 50th (m) | | 4.5 | | 5.7 | 0.0 | 2.0 | 23.3 | 2.7 | 12.5 |
| Queue Length 95th (m) | | 16.8 | | 14.1 | 0.0 | 7.2 | 50.1 | 8.6 | 31.1 |
| Internal Link Dist (m) | | 281.3 | | 151.2 | | | 265.7 | | 124.0 |
| Turn Bay Length (m) | | | | | 40.0 | 45.0 | | | |
| Base Capacity (vph) | | 459 | | 408 | 499 | 675 | 1163 | 798 | 1330 |
| 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 | | 0.18 | | 0.09 | 0.04 | 0.05 | 0.28 | 0.10 | 0.25 |

Intersection Summary

| | |
|---|------------------------|
| Cycle Length: 105 | |
| Actuated Cycle Length: 90.3 | |
| Natural Cycle: 65 | |
| Control Type: Actuated-Uncoordinated | |
| Maximum v/c Ratio: 0.35 | |
| Intersection Signal Delay: 8.9 | Intersection LOS: A |
| Intersection Capacity Utilization 53.9% | ICU Level of Service A |
| Analysis Period (min) 15 | |

Splits and Phases: 4: Clyde Ave & Doheny St/Existing Site Access



Lanes, Volumes, Timings
5: Saigon Ct & Carling Ave WB

12/06/2022



| Lane Group | WBL | WBT | WBR | NBL | NBT | SBT |
|------------------------|-------|-------|-------|-------|-------|-------|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 32 | 2222 | 12 | 37 | 9 | 87 |
| Future Volume (vph) | 32 | 2222 | 12 | 37 | 9 | 87 |
| Lane Group Flow (vph) | 32 | 2222 | 12 | 0 | 46 | 102 |
| Turn Type | Perm | NA | Perm | Perm | NA | NA |
| Protected Phases | | 8 | | | 2 | 6 |
| Permitted Phases | 8 | | 8 | 2 | | |
| Detector Phase | 8 | 8 | 8 | 2 | 2 | 6 |
| Switch Phase | | | | | | |
| Minimum Initial (s) | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 |
| Minimum Split (s) | 29.7 | 29.7 | 29.7 | 26.7 | 26.7 | 26.7 |
| Total Split (s) | 93.3 | 93.3 | 93.3 | 26.7 | 26.7 | 26.7 |
| Total Split (%) | 77.8% | 77.8% | 77.8% | 22.3% | 22.3% | 22.3% |
| Yellow Time (s) | 3.7 | 3.7 | 3.7 | 3.3 | 3.3 | 3.3 |
| All-Red Time (s) | 2.0 | 2.0 | 2.0 | 2.4 | 2.4 | 2.4 |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 |
| Total Lost Time (s) | 5.7 | 5.7 | 5.7 | | 5.7 | 5.7 |
| Lead/Lag | | | | | | |
| Lead-Lag Optimize? | | | | | | |
| Recall Mode | C-Max | C-Max | C-Max | None | None | None |
| Act Effct Green (s) | 95.2 | 95.2 | 95.2 | | 13.4 | 13.4 |
| Actuated g/C Ratio | 0.79 | 0.79 | 0.79 | | 0.11 | 0.11 |
| v/c Ratio | 0.02 | 0.83 | 0.01 | | 0.35 | 0.51 |
| Control Delay | 3.4 | 11.9 | 0.7 | | 40.6 | 55.4 |
| Queue Delay | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 |
| Total Delay | 3.4 | 11.9 | 0.7 | | 40.6 | 55.4 |
| LOS | A | B | A | | D | E |
| Approach Delay | | 11.8 | | | 40.6 | 55.4 |
| Approach LOS | | B | | | D | E |
| Queue Length 50th (m) | 1.2 | 125.0 | 0.0 | | 9.1 | 21.9 |
| Queue Length 95th (m) | 4.4 | 235.4 | 0.8 | | m20.2 | 36.6 |
| Internal Link Dist (m) | | 298.8 | | | 45.3 | 50.2 |
| Turn Bay Length (m) | 50.0 | | 40.0 | | | |
| Base Capacity (vph) | 1338 | 2689 | 1161 | | 204 | 309 |
| 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 | 0.02 | 0.83 | 0.01 | | 0.23 | 0.33 |

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 62 (52%), Referenced to phase 8:WBTL, Start of Green
 Natural Cycle: 90
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.83
 Intersection Signal Delay: 14.2
 Intersection Capacity Utilization 85.3%
 Analysis Period (min) 15
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 5: Saigon Ct & Carling Ave WB



Lanes, Volumes, Timings
6: Carling Ave EB & Saigon Ct

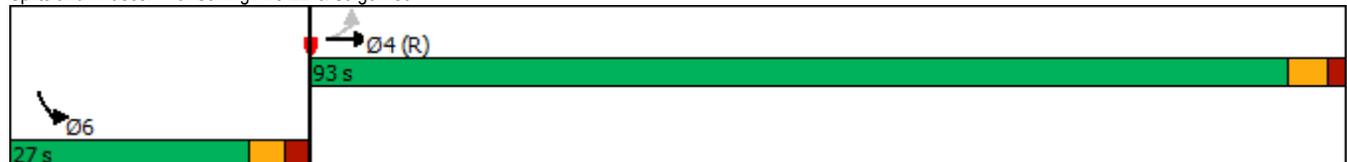
12/06/2022



| Lane Group | EBT | SBL |
|------------------------|-------|-------|
| Lane Configurations | ↑↑ | ↑↑ |
| Traffic Volume (vph) | 1307 | 119 |
| Future Volume (vph) | 1307 | 119 |
| Lane Group Flow (vph) | 1352 | 119 |
| Turn Type | NA | Prot |
| Protected Phases | 4 | 6 |
| Permitted Phases | | |
| Detector Phase | 4 | 6 |
| Switch Phase | | |
| Minimum Initial (s) | 10.0 | 5.0 |
| Minimum Split (s) | 15.4 | 22.6 |
| Total Split (s) | 93.0 | 27.0 |
| Total Split (%) | 77.5% | 22.5% |
| Yellow Time (s) | 3.7 | 3.3 |
| All-Red Time (s) | 1.7 | 2.3 |
| Lost Time Adjust (s) | 0.0 | 0.0 |
| Total Lost Time (s) | 5.4 | 5.6 |
| Lead/Lag | | |
| Lead-Lag Optimize? | | |
| Recall Mode | C-Max | None |
| Act Effct Green (s) | 99.3 | 9.7 |
| Actuated g/C Ratio | 0.83 | 0.08 |
| v/c Ratio | 0.48 | 0.45 |
| Control Delay | 1.2 | 45.0 |
| Queue Delay | 0.0 | 0.0 |
| Total Delay | 1.2 | 45.0 |
| LOS | A | D |
| Approach Delay | 1.2 | 45.0 |
| Approach LOS | A | D |
| Queue Length 50th (m) | 6.2 | 15.1 |
| Queue Length 95th (m) | 8.8 | 24.7 |
| Internal Link Dist (m) | 110.2 | 45.3 |
| Turn Bay Length (m) | | |
| Base Capacity (vph) | 2799 | 586 |
| Starvation Cap Reductn | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 |
| Storage Cap Reductn | 0 | 0 |
| Reduced v/c Ratio | 0.48 | 0.20 |

Intersection Summary
 Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 105 (88%), Referenced to phase 4:EBTL, Start of Green
 Natural Cycle: 60
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.48
 Intersection Signal Delay: 4.7
 Intersection Capacity Utilization 52.8%
 Analysis Period (min) 15
 Intersection LOS: A
 ICU Level of Service A

Splits and Phases: 6: Carling Ave EB & Saigon Ct



Lanes, Volumes, Timings
 7: Clyde Ave & Laperriere Ave

12/06/2022



| Lane Group | WBL | NBT | SBT |
|---|------|------------------------|------|
| Lane Configurations | | | |
| Traffic Volume (vph) | 249 | 193 | 246 |
| Future Volume (vph) | 249 | 193 | 246 |
| Lane Group Flow (vph) | 438 | 356 | 389 |
| Sign Control | Stop | Stop | Stop |
| Intersection Summary | | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization 80.6% | | ICU Level of Service D | |
| Analysis Period (min) 15 | | | |

HCM Unsignalized Intersection Capacity Analysis
 7: Clyde Ave & Laperriere Ave

12/06/2022



| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|-----------------------------------|-------|-------|-------|----------------------|------|------|
| Lane Configurations | | | | | | |
| Sign Control | Stop | | Stop | | | Stop |
| Traffic Volume (vph) | 249 | 189 | 193 | 163 | 143 | 246 |
| Future Volume (vph) | 249 | 189 | 193 | 163 | 143 | 246 |
| Peak Hour Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Hourly flow rate (vph) | 249 | 189 | 193 | 163 | 143 | 246 |
| Direction, Lane # | WB 1 | NB 1 | SB 1 | | | |
| Volume Total (vph) | 438 | 356 | 389 | | | |
| Volume Left (vph) | 249 | 0 | 143 | | | |
| Volume Right (vph) | 189 | 163 | 0 | | | |
| Hadj (s) | -0.09 | -0.16 | 0.16 | | | |
| Departure Headway (s) | 5.9 | 5.9 | 6.1 | | | |
| Degree Utilization, x | 0.72 | 0.58 | 0.66 | | | |
| Capacity (veh/h) | 576 | 577 | 554 | | | |
| Control Delay (s) | 22.7 | 16.7 | 20.2 | | | |
| Approach Delay (s) | 22.7 | 16.7 | 20.2 | | | |
| Approach LOS | C | C | C | | | |
| Intersection Summary | | | | | | |
| Delay | | | 20.1 | | | |
| Level of Service | | | C | | | |
| Intersection Capacity Utilization | | | 80.6% | ICU Level of Service | D | |
| Analysis Period (min) | | | 15 | | | |

Lanes, Volumes, Timings
 8: Clyde Ave & Woodward Dr

12/06/2022



| Lane Group | EBL | EBR | NBT | SBT | SBR |
|-----------------------|------|-----|------|------|-----|
| Lane Configurations | | | | | |
| Traffic Volume (vph) | 304 | 17 | 52 | 18 | 479 |
| Future Volume (vph) | 304 | 17 | 52 | 18 | 479 |
| Lane Group Flow (vph) | 304 | 17 | 73 | 18 | 479 |
| Sign Control | Free | | Stop | Stop | |

| Intersection Summary | |
|---|------------------------|
| Control Type: Unsignalized | |
| Intersection Capacity Utilization 42.1% | ICU Level of Service A |
| Analysis Period (min) 15 | |

HCM Unsignalized Intersection Capacity Analysis
 8: Clyde Ave & Woodward Dr

12/06/2022

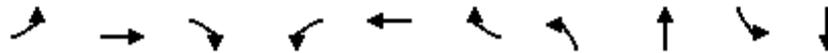


| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|-----------------------------------|-------------|-------------|-------------|----------------------|------|------|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 304 | 17 | 21 | 52 | 18 | 479 |
| Future Volume (Veh/h) | 304 | 17 | 21 | 52 | 18 | 479 |
| Sign Control | Free | | | Stop | Stop | |
| Grade | 0% | | | 0% | 0% | |
| Peak Hour Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Hourly flow rate (vph) | 304 | 17 | 21 | 52 | 18 | 479 |
| Pedestrians | | | | | | |
| Lane Width (m) | | | | | | |
| Walking Speed (m/s) | | | | | | |
| Percent Blockage | | | | | | |
| Right turn flare (veh) | 3 | | | | | |
| Median type | None | | | | | |
| Median storage (veh) | | | | | | |
| Upstream signal (m) | | | | | | |
| pX, platoon unblocked | | | | | | |
| vC, conflicting volume | 0 | | 617 | 608 | 608 | 0 |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | 0 | | 617 | 608 | 608 | 0 |
| tC, single (s) | 4.1 | | 7.1 | 6.5 | 6.5 | 6.2 |
| tC, 2 stage (s) | | | | | | |
| tF (s) | 2.2 | | 3.5 | 4.0 | 4.0 | 3.3 |
| p0 queue free % | 81 | | 89 | 84 | 95 | 56 |
| cM capacity (veh/h) | 1623 | | 185 | 333 | 333 | 1085 |
| Direction, Lane # | EB 1 | EB 2 | NB 1 | SB 1 | | |
| Volume Total | 304 | 17 | 73 | 497 | | |
| Volume Left | 304 | 0 | 21 | 0 | | |
| Volume Right | 0 | 17 | 0 | 479 | | |
| cSH | 1623 | 1700 | 271 | 1126 | | |
| Volume to Capacity | 0.19 | 0.01 | 0.27 | 0.44 | | |
| Queue Length 95th (m) | 5.2 | 0.0 | 8.1 | 17.5 | | |
| Control Delay (s) | 7.7 | 0.0 | 23.1 | 11.1 | | |
| Lane LOS | A | | C | B | | |
| Approach Delay (s) | 7.3 | | 23.1 | 11.1 | | |
| Approach LOS | | | C | B | | |
| Intersection Summary | | | | | | |
| Average Delay | | | 10.7 | | | |
| Intersection Capacity Utilization | | | 42.1% | ICU Level of Service | A | |
| Analysis Period (min) | | | 15 | | | |

Total Future Background 2036

Lanes, Volumes, Timings
1: Churchill Ave & Carling Ave

12/06/2022

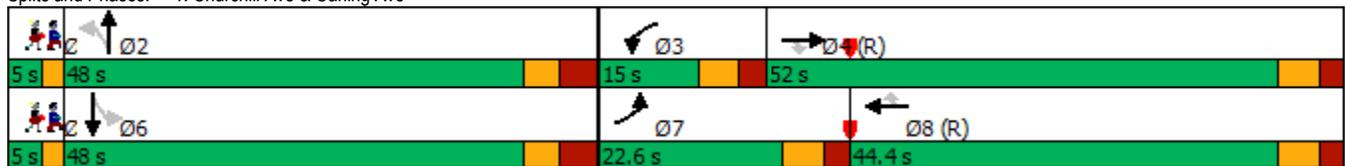


| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | SBL | SBT | Ø1 | Ø5 |
|------------------------|-------|---------|-------|--------|-------|-------|-------|-------|--------|-------|------|------|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 175 | 1674 | 98 | 181 | 784 | 154 | 11 | 44 | 347 | 44 | | |
| Future Volume (vph) | 175 | 1674 | 98 | 181 | 784 | 154 | 11 | 44 | 347 | 44 | | |
| Lane Group Flow (vph) | 175 | 1674 | 98 | 181 | 784 | 154 | 11 | 288 | 347 | 291 | | |
| Turn Type | Prot | NA | Perm | Prot | NA | Perm | Perm | NA | Perm | NA | | |
| Protected Phases | 7 | 4 | | 3 | 8 | | | 2 | | 6 | 1 | 5 |
| Permitted Phases | | | 4 | | | 8 | 2 | | 6 | | | |
| Detector Phase | 7 | 4 | 4 | 3 | 8 | 8 | 2 | 2 | 6 | 6 | | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 5.0 | 10.0 | 10.0 | 5.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 3.0 | 3.0 |
| Minimum Split (s) | 11.1 | 34.1 | 34.1 | 11.1 | 34.1 | 34.1 | 39.8 | 39.8 | 39.8 | 39.8 | 5.0 | 5.0 |
| Total Split (s) | 22.6 | 52.0 | 52.0 | 15.0 | 44.4 | 44.4 | 48.0 | 48.0 | 48.0 | 48.0 | 5.0 | 5.0 |
| Total Split (%) | 18.8% | 43.3% | 43.3% | 12.5% | 37.0% | 37.0% | 40.0% | 40.0% | 40.0% | 40.0% | 4% | 4% |
| Yellow Time (s) | 3.7 | 3.7 | 3.7 | 3.7 | 3.7 | 3.7 | 3.3 | 3.3 | 3.3 | 3.3 | 2.0 | 2.0 |
| All-Red Time (s) | 2.4 | 2.4 | 2.4 | 2.4 | 2.4 | 2.4 | 3.5 | 3.5 | 3.5 | 3.5 | 0.0 | 0.0 |
| 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) | 6.1 | 6.1 | 6.1 | 6.1 | 6.1 | 6.1 | 6.8 | 6.8 | 6.8 | 6.8 | | |
| Lead/Lag | Lead | Lag | Lag | Lead | Lag | Lag | Lag | Lag | Lag | Lag | Lead | Lead |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Recall Mode | None | C-Max | C-Max | None | C-Max | C-Max | Max | Max | Max | Max | None | None |
| Act Effct Green (s) | 15.3 | 45.9 | 45.9 | 8.9 | 39.5 | 39.5 | 46.2 | 46.2 | 46.2 | 46.2 | | |
| Actuated g/C Ratio | 0.13 | 0.38 | 0.38 | 0.07 | 0.33 | 0.33 | 0.38 | 0.38 | 0.38 | 0.38 | | |
| v/c Ratio | 0.81 | 1.29 | 0.16 | 1.45 | 0.72 | 0.28 | 0.03 | 0.39 | 1.05 | 0.41 | | |
| Control Delay | 59.1 | 169.3 | 14.0 | 278.1 | 37.1 | 5.5 | 23.5 | 6.8 | 100.6 | 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 | 59.1 | 169.3 | 14.0 | 278.1 | 37.1 | 5.5 | 23.5 | 6.8 | 100.6 | 7.0 | | |
| LOS | E | F | B | F | D | A | C | A | F | A | | |
| Approach Delay | | 151.6 | | | 71.7 | | | 7.4 | | 57.9 | | |
| Approach LOS | | F | | | E | | | A | | E | | |
| Queue Length 50th (m) | 44.1 | ~258.9 | 6.2 | ~55.9 | 86.7 | 4.0 | 1.6 | 6.5 | ~89.0 | 6.5 | | |
| Queue Length 95th (m) | m42.8 | m#228.5 | m5.9 | #100.6 | 109.2 | 16.3 | 5.5 | 25.5 | #146.3 | 26.1 | | |
| Internal Link Dist (m) | | 273.9 | | | 176.6 | | | 177.0 | | 412.2 | | |
| Turn Bay Length (m) | 65.0 | | 30.0 | 65.0 | | 40.0 | 20.0 | | 20.0 | | | |
| Base Capacity (vph) | 233 | 1296 | 618 | 125 | 1093 | 551 | 330 | 733 | 330 | 714 | | |
| 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 | 0.75 | 1.29 | 0.16 | 1.45 | 0.72 | 0.28 | 0.03 | 0.39 | 1.05 | 0.41 | | |

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 92 (77%), Referenced to phase 4:EBT and 8:WBT, Start of Green
 Natural Cycle: 150
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.45
 Intersection Signal Delay: 103.6
 Intersection Capacity Utilization 128.7%
 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.
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: Churchill Ave & Carling Ave



Lanes, Volumes, Timings
2: Clyde Ave/Cole Ave & Carling Ave

12/06/2022



| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT |
|------------------------|-------|---------|-------|---------|-------|-------|-------|-------|-------|-------|-------|
| Lane Configurations | | | | | | | | | | | |
| Traffic Volume (vph) | 61 | 1780 | 140 | 234 | 785 | 52 | 159 | 51 | 147 | 35 | 63 |
| Future Volume (vph) | 61 | 1780 | 140 | 234 | 785 | 52 | 159 | 51 | 147 | 35 | 63 |
| Lane Group Flow (vph) | 61 | 1780 | 140 | 234 | 785 | 52 | 159 | 51 | 147 | 35 | 129 |
| Turn Type | Prot | NA | Perm | Prot | NA | Perm | Perm | NA | Perm | Perm | NA |
| Protected Phases | 7 | 4 | | 3 | 8 | | | 2 | | | 6 |
| Permitted Phases | | | 4 | | | 8 | 2 | | 2 | 6 | |
| Detector Phase | 7 | 4 | 4 | 3 | 8 | 8 | 2 | 2 | 2 | 6 | 6 |
| Switch Phase | | | | | | | | | | | |
| Minimum Initial (s) | 5.0 | 10.0 | 10.0 | 5.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 |
| Minimum Split (s) | 10.4 | 30.8 | 30.8 | 10.4 | 30.8 | 30.8 | 36.6 | 36.6 | 36.6 | 36.6 | 36.6 |
| Total Split (s) | 15.5 | 62.4 | 62.4 | 21.0 | 67.9 | 67.9 | 36.6 | 36.6 | 36.6 | 36.6 | 36.6 |
| Total Split (%) | 12.9% | 52.0% | 52.0% | 17.5% | 56.6% | 56.6% | 30.5% | 30.5% | 30.5% | 30.5% | 30.5% |
| Yellow Time (s) | 3.7 | 3.7 | 3.7 | 3.7 | 3.7 | 3.7 | 3.3 | 3.3 | 3.3 | 3.3 | 3.3 |
| All-Red Time (s) | 1.7 | 2.1 | 2.1 | 1.7 | 2.1 | 2.1 | 3.3 | 3.3 | 3.3 | 3.3 | 3.3 |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | 5.4 | 5.8 | 5.8 | 5.4 | 5.8 | 5.8 | 6.6 | 6.6 | 6.6 | 6.6 | 6.6 |
| Lead/Lag | Lead | Lag | Lag | Lead | Lag | Lag | | | | | |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | Yes | Yes | | | | | |
| Recall Mode | None | C-Max | C-Max | None | C-Max | C-Max | None | None | None | None | None |
| Act Effct Green (s) | 9.0 | 57.4 | 57.4 | 22.8 | 73.5 | 73.5 | 22.0 | 22.0 | 22.0 | 22.0 | 22.0 |
| Actuated g/C Ratio | 0.08 | 0.48 | 0.48 | 0.19 | 0.61 | 0.61 | 0.18 | 0.18 | 0.18 | 0.18 | 0.18 |
| v/c Ratio | 0.48 | 1.10 | 0.18 | 0.75 | 0.39 | 0.06 | 0.81 | 0.16 | 0.41 | 0.15 | 0.39 |
| Control Delay | 68.8 | 60.5 | 0.2 | 74.3 | 4.9 | 0.2 | 74.7 | 39.5 | 9.4 | 39.6 | 30.4 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 68.8 | 60.5 | 0.2 | 74.3 | 4.9 | 0.2 | 74.7 | 39.5 | 9.4 | 39.6 | 30.4 |
| LOS | E | E | A | E | A | A | E | D | A | D | C |
| Approach Delay | | 56.5 | | | 19.8 | | | 42.8 | | | 32.4 |
| Approach LOS | | E | | | B | | | D | | | C |
| Queue Length 50th (m) | 15.4 | ~247.9 | 0.1 | 57.8 | 13.8 | 0.0 | 36.1 | 10.2 | 0.0 | 7.0 | 17.8 |
| Queue Length 95th (m) | m16.1 | m#230.1 | m0.0 | m#112.4 | 22.7 | m0.1 | 56.5 | 19.6 | 15.7 | 14.9 | 33.2 |
| Internal Link Dist (m) | | 369.5 | | | 273.9 | | | 124.0 | | | 136.4 |
| Turn Bay Length (m) | 20.0 | | 105.0 | 120.0 | | 30.0 | 95.0 | | 5.0 | 20.0 | |
| Base Capacity (vph) | 145 | 1621 | 779 | 310 | 2035 | 928 | 269 | 446 | 439 | 318 | 438 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 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 |
| Reduced v/c Ratio | 0.42 | 1.10 | 0.18 | 0.75 | 0.39 | 0.06 | 0.59 | 0.11 | 0.33 | 0.11 | 0.29 |

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 93 (78%), Referenced to phase 4:EBT and 8:WBT, Start of Green

Natural Cycle: 150

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.10

Intersection Signal Delay: 43.0

Intersection LOS: D

Intersection Capacity Utilization 108.5%

ICU Level of Service G

Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.

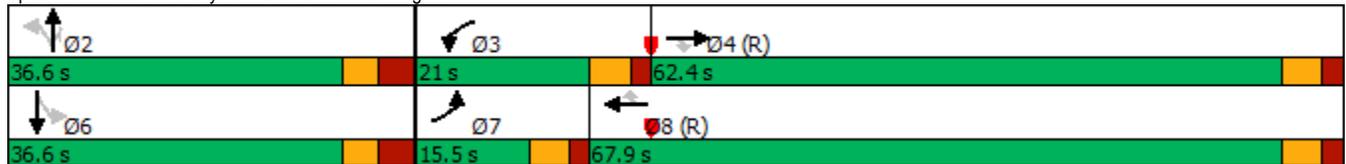
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

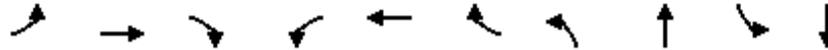
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: Clyde Ave/Cole Ave & Carling Ave



Lanes, Volumes, Timings
3: Broadview Ave & Carling Ave

12/06/2022

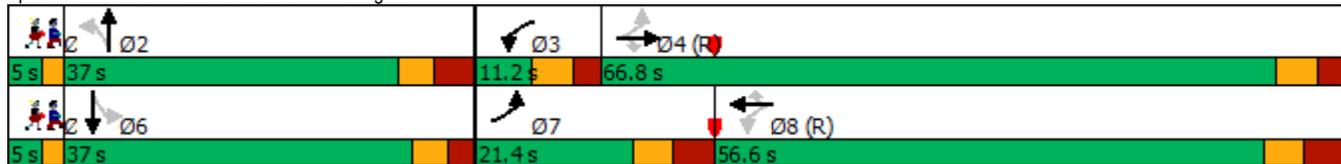


| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | SBL | SBT | Ø1 | Ø5 |
|------------------------|-------|--------|-------|--------|-------|-------|-------|-------|-------|-------|------|------|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 197 | 1811 | 104 | 99 | 801 | 119 | 112 | 24 | 160 | 20 | | |
| Future Volume (vph) | 197 | 1811 | 104 | 99 | 801 | 119 | 112 | 24 | 160 | 20 | | |
| Lane Group Flow (vph) | 197 | 1811 | 104 | 99 | 801 | 119 | 112 | 96 | 160 | 155 | | |
| Turn Type | pm+pt | NA | Perm | pm+pt | NA | Perm | Perm | NA | Perm | NA | | |
| Protected Phases | 7 | 4 | | 3 | 8 | | | 2 | | 6 | 1 | 5 |
| Permitted Phases | 4 | | 4 | 8 | | 8 | 2 | | 6 | | | |
| Detector Phase | 7 | 4 | 4 | 3 | 8 | 8 | 2 | 2 | 6 | 6 | | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 5.0 | 10.0 | 10.0 | 5.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 3.0 | 3.0 |
| Minimum Split (s) | 12.4 | 23.2 | 23.2 | 11.2 | 24.4 | 24.4 | 37.0 | 37.0 | 35.8 | 35.8 | 5.0 | 5.0 |
| Total Split (s) | 21.4 | 66.8 | 66.8 | 11.2 | 56.6 | 56.6 | 37.0 | 37.0 | 37.0 | 37.0 | 5.0 | 5.0 |
| Total Split (%) | 17.8% | 55.7% | 55.7% | 9.3% | 47.2% | 47.2% | 30.8% | 30.8% | 30.8% | 30.8% | 4% | 4% |
| Yellow Time (s) | 3.7 | 3.7 | 3.7 | 3.7 | 3.7 | 3.7 | 3.3 | 3.3 | 3.3 | 3.3 | 2.0 | 2.0 |
| All-Red Time (s) | 3.7 | 2.5 | 2.5 | 2.5 | 3.7 | 3.7 | 3.7 | 3.7 | 2.5 | 2.5 | 0.0 | 0.0 |
| 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) | 7.4 | 6.2 | 6.2 | 6.2 | 7.4 | 7.4 | 7.0 | 7.0 | 5.8 | 5.8 | | |
| Lead/Lag | Lead | Lag | Lag | Lead | Lag | Lag | Lag | Lag | Lag | Lag | Lead | Lead |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Recall Mode | None | C-Max | C-Max | None | C-Max | C-Max | Max | Max | Max | Max | Min | Min |
| Act Effct Green (s) | 69.9 | 60.6 | 60.6 | 57.7 | 51.5 | 51.5 | 30.0 | 30.0 | 31.2 | 31.2 | | |
| Actuated g/C Ratio | 0.58 | 0.50 | 0.50 | 0.48 | 0.43 | 0.43 | 0.25 | 0.25 | 0.26 | 0.26 | | |
| v/c Ratio | 0.55 | 1.06 | 0.15 | 0.76 | 0.57 | 0.18 | 0.46 | 0.22 | 0.52 | 0.34 | | |
| Control Delay | 17.5 | 68.9 | 3.1 | 58.1 | 44.3 | 10.5 | 45.3 | 13.7 | 45.0 | 10.3 | | |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | |
| Total Delay | 17.5 | 68.9 | 3.1 | 58.1 | 44.3 | 10.5 | 45.3 | 13.7 | 45.0 | 10.3 | | |
| LOS | B | E | A | E | D | B | D | B | D | B | | |
| Approach Delay | | 60.8 | | | 41.7 | | | 30.7 | | 27.9 | | |
| Approach LOS | | E | | | D | | | C | | C | | |
| Queue Length 50th (m) | 20.4 | ~246.3 | 0.0 | 16.1 | 91.2 | 6.0 | 22.4 | 4.3 | 32.4 | 3.6 | | |
| Queue Length 95th (m) | 32.2 | #288.5 | 7.7 | m#37.2 | 106.2 | 16.2 | 40.8 | 17.8 | 54.5 | 20.2 | | |
| Internal Link Dist (m) | | 239.1 | | | 369.5 | | | 434.9 | | 268.8 | | |
| Turn Bay Length (m) | 70.0 | | 30.0 | 50.0 | | 30.0 | 20.0 | | 45.0 | | | |
| Base Capacity (vph) | 388 | 1711 | 683 | 131 | 1400 | 650 | 244 | 432 | 309 | 458 | | |
| 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 | 0.51 | 1.06 | 0.15 | 0.76 | 0.57 | 0.18 | 0.46 | 0.22 | 0.52 | 0.34 | | |

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 77 (64%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green
 Natural Cycle: 120
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.06
 Intersection Signal Delay: 50.9
 Intersection Capacity Utilization 114.0%
 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.
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 3: Broadview Ave & Carling Ave



Lanes, Volumes, Timings
4: Clyde Ave & Doheny St/Existing Site Access

12/06/2022



| Lane Group | EBL | EBT | WBL | WBT | WBR | NBL | NBT | SBL | SBT |
|------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Lane Configurations | | | | | | | | | |
| Traffic Volume (vph) | 34 | 2 | 8 | 3 | 5 | 91 | 336 | 38 | 328 |
| Future Volume (vph) | 34 | 2 | 8 | 3 | 5 | 91 | 336 | 38 | 328 |
| Lane Group Flow (vph) | 0 | 96 | 0 | 11 | 5 | 91 | 345 | 38 | 408 |
| Turn Type | Perm | NA | Perm | NA | Perm | Perm | NA | pm+pt | NA |
| Protected Phases | | 4 | | 8 | | | 2 | 1 | 6 |
| Permitted Phases | 4 | | 8 | | 8 | 2 | | 6 | |
| 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 | 10.0 | 10.0 | 5.0 | 10.0 |
| Minimum Split (s) | 24.6 | 24.6 | 24.6 | 24.6 | 24.6 | 29.0 | 29.0 | 11.0 | 29.0 |
| Total Split (s) | 29.0 | 29.0 | 29.0 | 29.0 | 29.0 | 48.0 | 48.0 | 13.0 | 61.0 |
| Total Split (%) | 32.2% | 32.2% | 32.2% | 32.2% | 32.2% | 53.3% | 53.3% | 14.4% | 67.8% |
| Yellow Time (s) | 3.3 | 3.3 | 3.3 | 3.3 | 3.3 | 3.3 | 3.3 | 3.3 | 3.3 |
| All-Red Time (s) | 2.3 | 2.3 | 2.3 | 2.3 | 2.3 | 2.7 | 2.7 | 2.7 | 2.7 |
| Lost Time Adjust (s) | | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | | 5.6 | | 5.6 | 5.6 | 6.0 | 6.0 | 6.0 | 6.0 |
| Lead/Lag | | | | | | Lag | Lag | Lead | |
| Lead-Lag Optimize? | | | | | | Yes | Yes | Yes | |
| Recall Mode | None | None | None | None | None | Max | Max | None | Max |
| Act Effct Green (s) | | 11.8 | | 11.8 | 11.8 | 54.9 | 54.9 | 61.2 | 62.5 |
| Actuated g/C Ratio | | 0.15 | | 0.15 | 0.15 | 0.68 | 0.68 | 0.75 | 0.77 |
| v/c Ratio | | 0.38 | | 0.05 | 0.02 | 0.14 | 0.31 | 0.05 | 0.32 |
| Control Delay | | 18.3 | | 28.3 | 0.0 | 9.9 | 10.0 | 4.4 | 5.0 |
| Queue Delay | | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | | 18.3 | | 28.3 | 0.0 | 9.9 | 10.0 | 4.4 | 5.0 |
| LOS | | B | | C | A | A | A | A | A |
| Approach Delay | | 18.3 | | 19.4 | | | 10.0 | | 5.0 |
| Approach LOS | | B | | B | | | A | | A |
| Queue Length 50th (m) | | 4.7 | | 1.4 | 0.0 | 5.9 | 25.1 | 1.3 | 16.4 |
| Queue Length 95th (m) | | 16.9 | | 5.4 | 0.0 | 17.0 | 54.7 | 5.2 | 41.4 |
| Internal Link Dist (m) | | 281.3 | | 151.2 | | | 265.7 | | 124.0 |
| Turn Bay Length (m) | | | | | 40.0 | 45.0 | | | |
| Base Capacity (vph) | | 449 | | 434 | 505 | 628 | 1124 | 718 | 1290 |
| 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 | | 0.21 | | 0.03 | 0.01 | 0.14 | 0.31 | 0.05 | 0.32 |

Intersection Summary

| | |
|---|------------------------|
| Cycle Length: 90 | |
| Actuated Cycle Length: 81.3 | |
| Natural Cycle: 65 | |
| Control Type: Actuated-Uncoordinated | |
| Maximum v/c Ratio: 0.38 | |
| Intersection Signal Delay: 8.7 | Intersection LOS: A |
| Intersection Capacity Utilization 59.7% | ICU Level of Service B |
| Analysis Period (min) 15 | |

Splits and Phases: 4: Clyde Ave & Doheny St/Existing Site Access

| | | |
|------|------|------|
| | | |
| 13 s | 48 s | 29 s |
| | | |
| 61 s | | 29 s |

Lanes, Volumes, Timings
5: Saigon Ct & Carling Ave WB

12/06/2022



| Lane Group | WBL | WBT | WBR | NBL | NBT | SBT |
|------------------------|-------|-------|-------|-------|-------|-------|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 29 | 1123 | 58 | 22 | 52 | 26 |
| Future Volume (vph) | 29 | 1123 | 58 | 22 | 52 | 26 |
| Lane Group Flow (vph) | 29 | 1123 | 58 | 0 | 74 | 35 |
| Turn Type | Perm | NA | Perm | Perm | NA | NA |
| Protected Phases | | 8 | | | 2 | 6 |
| Permitted Phases | 8 | | 8 | 2 | | |
| Detector Phase | 8 | 8 | 8 | 2 | 2 | 6 |
| Switch Phase | | | | | | |
| Minimum Initial (s) | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 |
| Minimum Split (s) | 29.7 | 29.7 | 29.7 | 26.7 | 26.7 | 26.7 |
| Total Split (s) | 87.0 | 87.0 | 87.0 | 33.0 | 33.0 | 33.0 |
| Total Split (%) | 72.5% | 72.5% | 72.5% | 27.5% | 27.5% | 27.5% |
| Yellow Time (s) | 3.7 | 3.7 | 3.7 | 3.3 | 3.3 | 3.3 |
| All-Red Time (s) | 2.0 | 2.0 | 2.0 | 2.4 | 2.4 | 2.4 |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 |
| Total Lost Time (s) | 5.7 | 5.7 | 5.7 | | 5.7 | 5.7 |
| Lead/Lag | | | | | | |
| Lead-Lag Optimize? | | | | | | |
| Recall Mode | C-Max | C-Max | C-Max | None | None | None |
| Act Effct Green (s) | 101.2 | 101.2 | 101.2 | | 11.7 | 11.7 |
| Actuated g/C Ratio | 0.84 | 0.84 | 0.84 | | 0.10 | 0.10 |
| v/c Ratio | 0.02 | 0.40 | 0.05 | | 0.48 | 0.20 |
| Control Delay | 2.6 | 3.6 | 0.8 | | 53.2 | 41.7 |
| Queue Delay | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 |
| Total Delay | 2.6 | 3.6 | 0.8 | | 53.2 | 41.7 |
| LOS | A | A | A | | D | D |
| Approach Delay | | 3.4 | | | 53.2 | 41.7 |
| Approach LOS | | A | | | D | D |
| Queue Length 50th (m) | 1.0 | 30.6 | 0.0 | | 16.1 | 5.8 |
| Queue Length 95th (m) | 3.2 | 48.0 | 2.6 | | m20.0 | 15.2 |
| Internal Link Dist (m) | | 298.8 | | | 45.3 | 50.2 |
| Turn Bay Length (m) | 50.0 | | 40.0 | | | |
| Base Capacity (vph) | 1429 | 2776 | 1237 | | 360 | 398 |
| Starvation Cap Reductn | 0 | 0 | 0 | | 14 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | | 0 | 0 |
| Reduced v/c Ratio | 0.02 | 0.40 | 0.05 | | 0.21 | 0.09 |

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 62 (52%), Referenced to phase 8:WBTL, Start of Green
 Natural Cycle: 60
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.48
 Intersection Signal Delay: 7.2
 Intersection Capacity Utilization 53.1%
 Analysis Period (min) 15
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 5: Saigon Ct & Carling Ave WB



Lanes, Volumes, Timings
6: Carling Ave EB & Saigon Ct

12/06/2022

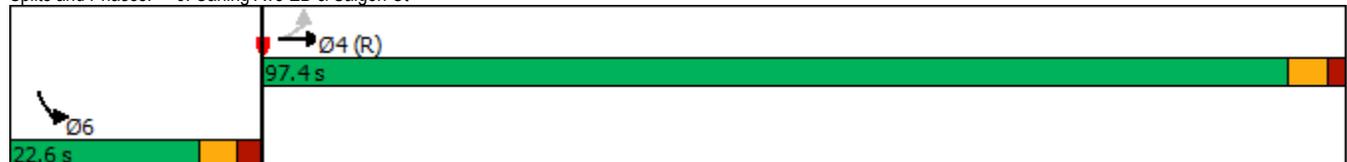


| Lane Group | EBT | SBL |
|------------------------|-------|-------|
| Lane Configurations | | |
| Traffic Volume (vph) | 2244 | 42 |
| Future Volume (vph) | 2244 | 42 |
| Lane Group Flow (vph) | 2349 | 42 |
| Turn Type | NA | Prot |
| Protected Phases | 4 | 6 |
| Permitted Phases | | |
| Detector Phase | 4 | 6 |
| Switch Phase | | |
| Minimum Initial (s) | 10.0 | 5.0 |
| Minimum Split (s) | 15.4 | 22.6 |
| Total Split (s) | 97.4 | 22.6 |
| Total Split (%) | 81.2% | 18.8% |
| Yellow Time (s) | 3.7 | 3.3 |
| All-Red Time (s) | 1.7 | 2.3 |
| Lost Time Adjust (s) | 0.0 | 0.0 |
| Total Lost Time (s) | 5.4 | 5.6 |
| Lead/Lag | | |
| Lead-Lag Optimize? | | |
| Recall Mode | C-Max | None |
| Act Effct Green (s) | 105.3 | 7.0 |
| Actuated g/C Ratio | 0.88 | 0.06 |
| v/c Ratio | 0.79 | 0.22 |
| Control Delay | 8.4 | 52.9 |
| Queue Delay | 0.0 | 0.0 |
| Total Delay | 8.4 | 52.9 |
| LOS | A | D |
| Approach Delay | 8.4 | 52.9 |
| Approach LOS | A | D |
| Queue Length 50th (m) | 84.3 | 5.2 |
| Queue Length 95th (m) | m25.7 | 11.1 |
| Internal Link Dist (m) | 110.2 | 45.3 |
| Turn Bay Length (m) | | |
| Base Capacity (vph) | 2969 | 465 |
| Starvation Cap Reductn | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 |
| Storage Cap Reductn | 0 | 0 |
| Reduced v/c Ratio | 0.79 | 0.09 |

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 105 (88%), Referenced to phase 4:EBTL, Start of Green
 Natural Cycle: 90
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.79
 Intersection Signal Delay: 9.2
 Intersection Capacity Utilization 82.0%
 Analysis Period (min) 15
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 6: Carling Ave EB & Saigon Ct



Lanes, Volumes, Timings
 7: Clyde Ave & Laperriere Ave

12/06/2022



| Lane Group | WBL | NBT | SBT |
|---|------|------------------------|------|
| Lane Configurations | | | |
| Traffic Volume (vph) | 128 | 231 | 247 |
| Future Volume (vph) | 128 | 231 | 247 |
| Lane Group Flow (vph) | 368 | 403 | 456 |
| Sign Control | Stop | Stop | Stop |
| Intersection Summary | | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization 83.4% | | ICU Level of Service E | |
| Analysis Period (min) 15 | | | |

HCM Unsignalized Intersection Capacity Analysis
 7: Clyde Ave & Laperriere Ave

12/06/2022



| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|-----------------------------------|-------|-------|-------|----------------------|------|------|
| Lane Configurations | | | | | | |
| Sign Control | Stop | | Stop | | | Stop |
| Traffic Volume (vph) | 128 | 240 | 231 | 172 | 209 | 247 |
| Future Volume (vph) | 128 | 240 | 231 | 172 | 209 | 247 |
| Peak Hour Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Hourly flow rate (vph) | 128 | 240 | 231 | 172 | 209 | 247 |
| Direction, Lane # | WB 1 | NB 1 | SB 1 | | | |
| Volume Total (vph) | 368 | 403 | 456 | | | |
| Volume Left (vph) | 128 | 0 | 209 | | | |
| Volume Right (vph) | 240 | 172 | 0 | | | |
| Hadj (s) | -0.27 | -0.10 | 0.19 | | | |
| Departure Headway (s) | 6.0 | 5.8 | 6.0 | | | |
| Degree Utilization, x | 0.61 | 0.65 | 0.76 | | | |
| Capacity (veh/h) | 560 | 591 | 576 | | | |
| Control Delay (s) | 18.0 | 19.0 | 25.3 | | | |
| Approach Delay (s) | 18.0 | 19.0 | 25.3 | | | |
| Approach LOS | C | C | D | | | |
| Intersection Summary | | | | | | |
| Delay | | | 21.0 | | | |
| Level of Service | | | C | | | |
| Intersection Capacity Utilization | | | 83.4% | ICU Level of Service | E | |
| Analysis Period (min) | | | 15 | | | |

Lanes, Volumes, Timings
 8: Clyde Ave & Woodward Dr

12/06/2022



| Lane Group | EBL | EBR | NBT | SBT | SBR |
|---|------|-----|------------------------|------|-----|
| Lane Configurations | | | | | |
| Traffic Volume (vph) | 365 | 8 | 38 | 47 | 328 |
| Future Volume (vph) | 365 | 8 | 38 | 47 | 328 |
| Lane Group Flow (vph) | 365 | 8 | 50 | 47 | 328 |
| Sign Control | Free | | Stop | Stop | |
| Intersection Summary | | | | | |
| Control Type: Unsignalized | | | | | |
| Intersection Capacity Utilization 37.5% | | | ICU Level of Service A | | |
| Analysis Period (min) 15 | | | | | |

HCM Unsignalized Intersection Capacity Analysis
8: Clyde Ave & Woodward Dr

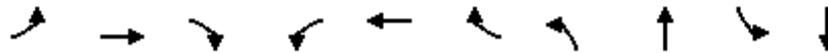
12/06/2022



| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|-----------------------------------|-------------|-------------|-------------|----------------------|------|------|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 365 | 8 | 12 | 38 | 47 | 328 |
| Future Volume (Veh/h) | 365 | 8 | 12 | 38 | 47 | 328 |
| Sign Control | Free | | | Stop | Stop | |
| Grade | 0% | | | 0% | 0% | |
| Peak Hour Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Hourly flow rate (vph) | 365 | 8 | 12 | 38 | 47 | 328 |
| Pedestrians | | | | | | |
| Lane Width (m) | | | | | | |
| Walking Speed (m/s) | | | | | | |
| Percent Blockage | | | | | | |
| Right turn flare (veh) | 3 | | | | | |
| Median type | None | | | | | |
| Median storage (veh) | | | | | | |
| Upstream signal (m) | | | | | | |
| pX, platoon unblocked | | | | | | |
| vC, conflicting volume | 0 | | 754 | 730 | 730 | 0 |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | 0 | | 754 | 730 | 730 | 0 |
| tC, single (s) | 4.1 | | 7.1 | 6.5 | 6.5 | 6.2 |
| tC, 2 stage (s) | | | | | | |
| tF (s) | 2.2 | | 3.5 | 4.0 | 4.0 | 3.3 |
| p0 queue free % | 78 | | 93 | 86 | 83 | 70 |
| cM capacity (veh/h) | 1623 | | 164 | 271 | 271 | 1085 |
| Direction, Lane # | EB 1 | EB 2 | NB 1 | SB 1 | | |
| Volume Total | 365 | 8 | 50 | 375 | | |
| Volume Left | 365 | 0 | 12 | 0 | | |
| Volume Right | 0 | 8 | 0 | 328 | | |
| cSH | 1623 | 1700 | 234 | 1240 | | |
| Volume to Capacity | 0.22 | 0.00 | 0.21 | 0.30 | | |
| Queue Length 95th (m) | 6.6 | 0.0 | 6.0 | 9.8 | | |
| Control Delay (s) | 7.9 | 0.0 | 24.5 | 11.2 | | |
| Lane LOS | A | | C | B | | |
| Approach Delay (s) | 7.7 | | 24.5 | 11.2 | | |
| Approach LOS | | | C | B | | |
| Intersection Summary | | | | | | |
| Average Delay | | | 10.4 | | | |
| Intersection Capacity Utilization | | | 37.5% | ICU Level of Service | A | |
| Analysis Period (min) | | | 15 | | | |

Lanes, Volumes, Timings
1: Churchill Ave & Carling Ave

12/06/2022



| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | SBL | SBT | Ø1 | Ø5 |
|------------------------|--------|-------|-------|--------|--------|-------|-------|-------|-------|-------|------|------|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 252 | 990 | 18 | 236 | 1987 | 218 | 96 | 54 | 187 | 40 | | |
| Future Volume (vph) | 252 | 990 | 18 | 236 | 1987 | 218 | 96 | 54 | 187 | 40 | | |
| Lane Group Flow (vph) | 252 | 990 | 18 | 236 | 1987 | 218 | 96 | 202 | 187 | 326 | | |
| Turn Type | Prot | NA | Perm | Prot | NA | Perm | Perm | NA | Perm | NA | | |
| Protected Phases | 7 | 4 | | 3 | 8 | | | 2 | | 6 | 1 | 5 |
| Permitted Phases | | | 4 | | | 8 | 2 | | 6 | | | |
| Detector Phase | 7 | 4 | 4 | 3 | 8 | 8 | 2 | 2 | 6 | 6 | | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 5.0 | 10.0 | 10.0 | 5.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 3.0 | 3.0 |
| Minimum Split (s) | 11.1 | 34.1 | 34.1 | 11.1 | 34.1 | 34.1 | 39.8 | 39.8 | 39.8 | 39.8 | 5.0 | 5.0 |
| Total Split (s) | 18.0 | 51.2 | 51.2 | 24.0 | 57.2 | 57.2 | 39.8 | 39.8 | 39.8 | 39.8 | 5.0 | 5.0 |
| Total Split (%) | 15.0% | 42.7% | 42.7% | 20.0% | 47.7% | 47.7% | 33.2% | 33.2% | 33.2% | 33.2% | 4% | 4% |
| Yellow Time (s) | 3.7 | 3.7 | 3.7 | 3.7 | 3.7 | 3.7 | 3.3 | 3.3 | 3.3 | 3.3 | 2.0 | 2.0 |
| All-Red Time (s) | 2.4 | 2.4 | 2.4 | 2.4 | 2.4 | 2.4 | 3.5 | 3.5 | 3.5 | 3.5 | 0.0 | 0.0 |
| 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) | 6.1 | 6.1 | 6.1 | 6.1 | 6.1 | 6.1 | 6.8 | 6.8 | 6.8 | 6.8 | | |
| Lead/Lag | Lead | Lag | Lag | Lead | Lag | Lag | Lag | Lag | Lag | Lag | Lead | Lead |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Recall Mode | None | C-Max | C-Max | None | C-Max | C-Max | Max | Max | Max | Max | None | None |
| Act Effct Green (s) | 11.9 | 45.1 | 45.1 | 17.9 | 51.1 | 51.1 | 38.0 | 38.0 | 38.0 | 38.0 | | |
| Actuated g/C Ratio | 0.10 | 0.38 | 0.38 | 0.15 | 0.43 | 0.43 | 0.32 | 0.32 | 0.32 | 0.32 | | |
| v/c Ratio | 1.50 | 0.78 | 0.03 | 0.94 | 1.38 | 0.32 | 0.44 | 0.35 | 0.58 | 0.49 | | |
| Control Delay | 291.0 | 33.7 | 0.1 | 88.1 | 199.3 | 9.1 | 40.1 | 15.7 | 43.1 | 9.3 | | |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | |
| Total Delay | 291.0 | 33.7 | 0.1 | 88.1 | 199.3 | 9.1 | 40.1 | 15.7 | 43.1 | 9.3 | | |
| LOS | F | C | A | F | F | A | D | B | D | A | | |
| Approach Delay | | 84.7 | | | 171.6 | | | 23.6 | | 21.6 | | |
| Approach LOS | | F | | | F | | | C | | C | | |
| Queue Length 50th (m) | ~84.8 | 72.1 | 0.0 | 53.7 | ~329.0 | 6.5 | 17.9 | 15.2 | 36.8 | 9.0 | | |
| Queue Length 95th (m) | #137.5 | 82.6 | m0.0 | m#72.0 | #368.0 | m15.7 | 35.0 | 34.7 | 61.8 | 33.3 | | |
| Internal Link Dist (m) | | 273.9 | | | 176.6 | | | 177.0 | | 412.2 | | |
| Turn Bay Length (m) | 65.0 | | 30.0 | 65.0 | | 40.0 | 20.0 | | 20.0 | | | |
| Base Capacity (vph) | 168 | 1274 | 604 | 252 | 1443 | 676 | 220 | 571 | 320 | 660 | | |
| 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 | 1.50 | 0.78 | 0.03 | 0.94 | 1.38 | 0.32 | 0.44 | 0.35 | 0.58 | 0.49 | | |

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 92 (77%), Referenced to phase 4:EBT and 8:WBT, Start of Green
 Natural Cycle: 150
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.50
 Intersection Signal Delay: 120.5
 Intersection Capacity Utilization 132.6%
 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.
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: Churchill Ave & Carling Ave



Lanes, Volumes, Timings
2: Clyde Ave/Cole Ave & Carling Ave

12/06/2022

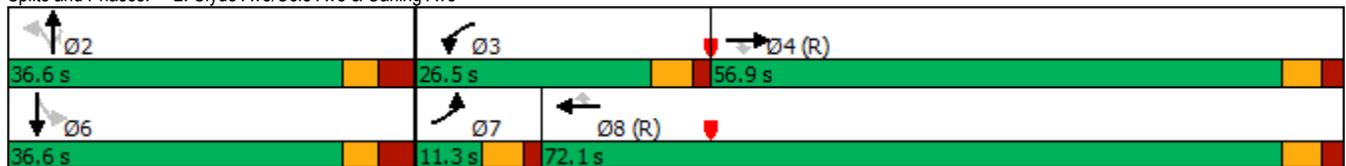


| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT |
|------------------------|--------|-------|-------|-------|--------|-------|-------|-------|-------|-------|-------|
| Lane Configurations | | | | | | | | | | | |
| Traffic Volume (vph) | 77 | 977 | 164 | 234 | 2039 | 58 | 146 | 87 | 155 | 22 | 54 |
| Future Volume (vph) | 77 | 977 | 164 | 234 | 2039 | 58 | 146 | 87 | 155 | 22 | 54 |
| Lane Group Flow (vph) | 77 | 977 | 164 | 234 | 2039 | 58 | 146 | 87 | 155 | 22 | 116 |
| Turn Type | Prot | NA | Perm | Prot | NA | Perm | Perm | NA | Perm | Perm | NA |
| Protected Phases | 7 | 4 | | 3 | 8 | | | 2 | | | 6 |
| Permitted Phases | | | 4 | | | 8 | 2 | | 2 | 6 | |
| Detector Phase | 7 | 4 | 4 | 3 | 8 | 8 | 2 | 2 | 2 | 6 | 6 |
| Switch Phase | | | | | | | | | | | |
| Minimum Initial (s) | 5.0 | 10.0 | 10.0 | 5.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 |
| Minimum Split (s) | 10.4 | 30.8 | 30.8 | 10.4 | 30.8 | 30.8 | 36.6 | 36.6 | 36.6 | 36.6 | 36.6 |
| Total Split (s) | 11.3 | 56.9 | 56.9 | 26.5 | 72.1 | 72.1 | 36.6 | 36.6 | 36.6 | 36.6 | 36.6 |
| Total Split (%) | 9.4% | 47.4% | 47.4% | 22.1% | 60.1% | 60.1% | 30.5% | 30.5% | 30.5% | 30.5% | 30.5% |
| Yellow Time (s) | 3.7 | 3.7 | 3.7 | 3.7 | 3.7 | 3.7 | 3.3 | 3.3 | 3.3 | 3.3 | 3.3 |
| All-Red Time (s) | 1.7 | 2.1 | 2.1 | 1.7 | 2.1 | 2.1 | 3.3 | 3.3 | 3.3 | 3.3 | 3.3 |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | 5.4 | 5.8 | 5.8 | 5.4 | 5.8 | 5.8 | 6.6 | 6.6 | 6.6 | 6.6 | 6.6 |
| Lead/Lag | Lead | Lag | Lag | Lead | Lag | Lag | | | | | |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | Yes | Yes | | | | | |
| Recall Mode | None | C-Max | C-Max | None | C-Max | C-Max | None | None | None | None | None |
| Act Effct Green (s) | 9.0 | 60.9 | 60.9 | 19.8 | 71.7 | 71.7 | 21.5 | 21.5 | 21.5 | 21.5 | 21.5 |
| Actuated g/C Ratio | 0.08 | 0.51 | 0.51 | 0.16 | 0.60 | 0.60 | 0.18 | 0.18 | 0.18 | 0.18 | 0.18 |
| v/c Ratio | 0.61 | 0.57 | 0.20 | 0.84 | 1.01 | 0.07 | 0.68 | 0.27 | 0.43 | 0.10 | 0.35 |
| Control Delay | 73.7 | 10.2 | 0.6 | 58.7 | 31.8 | 1.6 | 60.6 | 42.1 | 14.0 | 38.1 | 27.0 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 73.7 | 10.2 | 0.6 | 58.7 | 31.8 | 1.6 | 60.6 | 42.1 | 14.0 | 38.1 | 27.0 |
| LOS | E | B | A | E | C | A | E | D | B | D | C |
| Approach Delay | | 12.9 | | | 33.7 | | | 37.8 | | | 28.7 |
| Approach LOS | | B | | | C | | | D | | | C |
| Queue Length 50th (m) | 19.3 | 25.4 | 0.0 | 58.4 | ~128.5 | 0.4 | 33.1 | 18.2 | 6.3 | 4.5 | 14.6 |
| Queue Length 95th (m) | m#38.7 | 29.8 | m1.4 | m49.3 | m65.3 | m0.3 | 50.5 | 29.9 | 22.7 | 10.8 | 28.7 |
| Internal Link Dist (m) | | 369.5 | | | 273.9 | | | 124.0 | | | 136.4 |
| Turn Bay Length (m) | 20.0 | | 105.0 | 120.0 | | 30.0 | 95.0 | | 5.0 | 20.0 | |
| Base Capacity (vph) | 127 | 1720 | 827 | 301 | 2024 | 880 | 299 | 446 | 459 | 307 | 440 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 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 |
| Reduced v/c Ratio | 0.61 | 0.57 | 0.20 | 0.78 | 1.01 | 0.07 | 0.49 | 0.20 | 0.34 | 0.07 | 0.26 |

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 93 (78%), Referenced to phase 4:EBT and 8:WBT, Start of Green
 Natural Cycle: 140
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.01
 Intersection Signal Delay: 27.7
 Intersection Capacity Utilization 98.1%
 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.
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: Clyde Ave/Cole Ave & Carling Ave



Lanes, Volumes, Timings
3: Broadview Ave & Carling Ave

12/06/2022

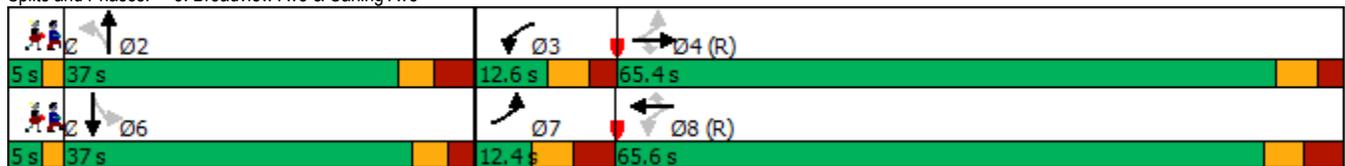


| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | SBL | SBT | Ø1 | Ø5 |
|------------------------|-------|-------|-------|-------|---------|-------|-------|-------|-------|-------|------|------|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 94 | 1152 | 31 | 67 | 2137 | 67 | 181 | 35 | 67 | 23 | | |
| Future Volume (vph) | 94 | 1152 | 31 | 67 | 2137 | 67 | 181 | 35 | 67 | 23 | | |
| Lane Group Flow (vph) | 94 | 1152 | 31 | 67 | 2137 | 67 | 181 | 68 | 67 | 173 | | |
| Turn Type | pm+pt | NA | Perm | pm+pt | NA | Perm | Perm | NA | Perm | NA | | |
| Protected Phases | 7 | 4 | | 3 | 8 | | | 2 | | 6 | 1 | 5 |
| Permitted Phases | 4 | | 4 | 8 | | 8 | 2 | | 6 | | | |
| Detector Phase | 7 | 4 | 4 | 3 | 8 | 8 | 2 | 2 | 6 | 6 | | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 5.0 | 10.0 | 10.0 | 5.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 3.0 | 3.0 |
| Minimum Split (s) | 12.4 | 23.2 | 23.2 | 11.2 | 24.4 | 24.4 | 37.0 | 37.0 | 35.8 | 35.8 | 5.0 | 5.0 |
| Total Split (s) | 12.4 | 65.4 | 65.4 | 12.6 | 65.6 | 65.6 | 37.0 | 37.0 | 37.0 | 37.0 | 5.0 | 5.0 |
| Total Split (%) | 10.3% | 54.5% | 54.5% | 10.5% | 54.7% | 54.7% | 30.8% | 30.8% | 30.8% | 30.8% | 4% | 4% |
| Yellow Time (s) | 3.7 | 3.7 | 3.7 | 3.7 | 3.7 | 3.7 | 3.3 | 3.3 | 3.3 | 3.3 | 2.0 | 2.0 |
| All-Red Time (s) | 3.7 | 2.5 | 2.5 | 2.5 | 3.7 | 3.7 | 3.7 | 3.7 | 2.5 | 2.5 | 0.0 | 0.0 |
| 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) | 7.4 | 6.2 | 6.2 | 6.2 | 7.4 | 7.4 | 7.0 | 7.0 | 5.8 | 5.8 | | |
| Lead/Lag | Lead | Lag | Lag | Lead | Lag | Lag | Lag | Lag | Lag | Lag | Lead | Lead |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Recall Mode | None | C-Max | C-Max | None | C-Max | C-Max | Max | Max | Max | Max | Min | Min |
| Act Effct Green (s) | 64.5 | 61.7 | 61.7 | 65.7 | 58.2 | 58.2 | 30.0 | 30.0 | 31.2 | 31.2 | | |
| Actuated g/C Ratio | 0.54 | 0.51 | 0.51 | 0.55 | 0.48 | 0.48 | 0.25 | 0.25 | 0.26 | 0.26 | | |
| v/c Ratio | 0.73 | 0.66 | 0.04 | 0.30 | 1.30 | 0.09 | 0.74 | 0.16 | 0.21 | 0.36 | | |
| Control Delay | 50.2 | 24.4 | 0.1 | 16.4 | 167.0 | 2.7 | 60.4 | 21.3 | 36.8 | 12.2 | | |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | |
| Total Delay | 50.2 | 24.4 | 0.1 | 16.4 | 167.0 | 2.7 | 60.4 | 21.3 | 36.8 | 12.2 | | |
| LOS | D | C | A | B | F | A | E | C | D | B | | |
| Approach Delay | | 25.7 | | | 157.8 | | | 49.8 | | 19.1 | | |
| Approach LOS | | C | | | F | | | D | | B | | |
| Queue Length 50th (m) | 9.2 | 106.1 | 0.0 | 7.8 | ~336.1 | 0.0 | 39.3 | 6.3 | 12.4 | 7.0 | | |
| Queue Length 95th (m) | #34.4 | 130.4 | 0.0 | m8.5 | m#336.5 | m0.0 | #72.9 | 17.9 | 24.7 | 25.3 | | |
| Internal Link Dist (m) | | 239.1 | | | 369.5 | | | 434.9 | | 268.8 | | |
| Turn Bay Length (m) | 70.0 | | 30.0 | 50.0 | | 30.0 | 20.0 | | 45.0 | | | |
| Base Capacity (vph) | 129 | 1743 | 779 | 222 | 1644 | 715 | 246 | 432 | 325 | 485 | | |
| 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 | 0.73 | 0.66 | 0.04 | 0.30 | 1.30 | 0.09 | 0.74 | 0.16 | 0.21 | 0.36 | | |

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 77 (64%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green
 Natural Cycle: 150
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.30
 Intersection Signal Delay: 101.1 Intersection LOS: F
 Intersection Capacity Utilization 126.4% 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.
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 3: Broadview Ave & Carling Ave



Lanes, Volumes, Timings
 4: Clyde Ave & Doheny St/Existing Site Access

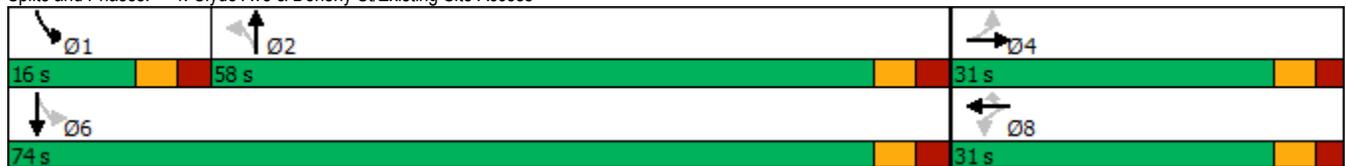
12/06/2022



| Lane Group | EBL | EBT | WBL | WBT | WBR | NBL | NBT | SBL | SBT |
|------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Lane Configurations | | | | | | | | | |
| Traffic Volume (vph) | 24 | 5 | 27 | 9 | 20 | 32 | 323 | 79 | 306 |
| Future Volume (vph) | 24 | 5 | 27 | 9 | 20 | 32 | 323 | 79 | 306 |
| Lane Group Flow (vph) | 0 | 81 | 0 | 36 | 20 | 32 | 343 | 79 | 361 |
| Turn Type | Perm | NA | Perm | NA | Perm | Perm | NA | pm+pt | NA |
| Protected Phases | | 4 | | 8 | | | 2 | 1 | 6 |
| Permitted Phases | 4 | | 8 | | 8 | 2 | | 6 | |
| 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 | 10.0 | 10.0 | 5.0 | 10.0 |
| Minimum Split (s) | 24.6 | 24.6 | 24.6 | 24.6 | 24.6 | 29.0 | 29.0 | 11.0 | 29.0 |
| Total Split (s) | 31.0 | 31.0 | 31.0 | 31.0 | 31.0 | 58.0 | 58.0 | 16.0 | 74.0 |
| Total Split (%) | 29.5% | 29.5% | 29.5% | 29.5% | 29.5% | 55.2% | 55.2% | 15.2% | 70.5% |
| Yellow Time (s) | 3.3 | 3.3 | 3.3 | 3.3 | 3.3 | 3.3 | 3.3 | 3.3 | 3.3 |
| All-Red Time (s) | 2.3 | 2.3 | 2.3 | 2.3 | 2.3 | 2.7 | 2.7 | 2.7 | 2.7 |
| Lost Time Adjust (s) | | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | | 5.6 | | 5.6 | 5.6 | 6.0 | 6.0 | 6.0 | 6.0 |
| Lead/Lag | | | | | | Lag | Lag | Lead | |
| Lead-Lag Optimize? | | | | | | Yes | Yes | Yes | |
| Recall Mode | None | None | None | None | None | Max | Max | None | Max |
| Act Effct Green (s) | | 11.7 | | 11.7 | 11.7 | 62.1 | 62.1 | 71.2 | 72.4 |
| Actuated g/C Ratio | | 0.13 | | 0.13 | 0.13 | 0.68 | 0.68 | 0.78 | 0.79 |
| v/c Ratio | | 0.35 | | 0.20 | 0.07 | 0.05 | 0.29 | 0.11 | 0.27 |
| Control Delay | | 20.7 | | 38.1 | 0.6 | 8.8 | 9.5 | 3.9 | 4.2 |
| Queue Delay | | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | | 20.7 | | 38.1 | 0.6 | 8.8 | 9.5 | 3.9 | 4.2 |
| LOS | | C | | D | A | A | A | A | A |
| Approach Delay | | 20.7 | | 24.7 | | | 9.5 | | 4.2 |
| Approach LOS | | C | | C | | | A | | A |
| Queue Length 50th (m) | | 4.6 | | 5.7 | 0.0 | 2.0 | 25.1 | 2.7 | 14.3 |
| Queue Length 95th (m) | | 16.9 | | 14.3 | 0.0 | 7.1 | 53.2 | 8.5 | 34.9 |
| Internal Link Dist (m) | | 281.3 | | 151.2 | | | 265.7 | | 124.0 |
| Turn Bay Length (m) | | | | | 40.0 | 45.0 | | | |
| Base Capacity (vph) | | 439 | | 386 | 479 | 659 | 1169 | 766 | 1336 |
| 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 | | 0.18 | | 0.09 | 0.04 | 0.05 | 0.29 | 0.10 | 0.27 |

| Intersection Summary | |
|---|------------------------|
| Cycle Length: 105 | |
| Actuated Cycle Length: 91.3 | |
| Natural Cycle: 65 | |
| Control Type: Actuated-Uncoordinated | |
| Maximum v/c Ratio: 0.35 | |
| Intersection Signal Delay: 8.9 | Intersection LOS: A |
| Intersection Capacity Utilization 55.3% | ICU Level of Service B |
| Analysis Period (min) 15 | |

Splits and Phases: 4: Clyde Ave & Doheny St/Existing Site Access



Lanes, Volumes, Timings
5: Saigon Ct & Carling Ave WB

12/06/2022



| Lane Group | WBL | WBT | WBR | NBL | NBT | SBT |
|------------------------|-------|--------|-------|-------|-------|-------|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 32 | 2344 | 12 | 37 | 9 | 87 |
| Future Volume (vph) | 32 | 2344 | 12 | 37 | 9 | 87 |
| Lane Group Flow (vph) | 32 | 2344 | 12 | 0 | 46 | 102 |
| Turn Type | Perm | NA | Perm | Perm | NA | NA |
| Protected Phases | | 8 | | | 2 | 6 |
| Permitted Phases | 8 | | 8 | 2 | | |
| Detector Phase | 8 | 8 | 8 | 2 | 2 | 6 |
| Switch Phase | | | | | | |
| Minimum Initial (s) | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 |
| Minimum Split (s) | 29.7 | 29.7 | 29.7 | 26.7 | 26.7 | 26.7 |
| Total Split (s) | 93.3 | 93.3 | 93.3 | 26.7 | 26.7 | 26.7 |
| Total Split (%) | 77.8% | 77.8% | 77.8% | 22.3% | 22.3% | 22.3% |
| Yellow Time (s) | 3.7 | 3.7 | 3.7 | 3.3 | 3.3 | 3.3 |
| All-Red Time (s) | 2.0 | 2.0 | 2.0 | 2.4 | 2.4 | 2.4 |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 |
| Total Lost Time (s) | 5.7 | 5.7 | 5.7 | | 5.7 | 5.7 |
| Lead/Lag | | | | | | |
| Lead-Lag Optimize? | | | | | | |
| Recall Mode | C-Max | C-Max | C-Max | None | None | None |
| Act Effct Green (s) | 95.2 | 95.2 | 95.2 | | 13.4 | 13.4 |
| Actuated g/C Ratio | 0.79 | 0.79 | 0.79 | | 0.11 | 0.11 |
| v/c Ratio | 0.02 | 0.87 | 0.01 | | 0.35 | 0.51 |
| Control Delay | 3.4 | 14.1 | 0.7 | | 41.4 | 55.4 |
| Queue Delay | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 |
| Total Delay | 3.4 | 14.1 | 0.7 | | 41.4 | 55.4 |
| LOS | A | B | A | | D | E |
| Approach Delay | | 13.9 | | | 41.4 | 55.4 |
| Approach LOS | | B | | | D | E |
| Queue Length 50th (m) | 1.2 | 147.2 | 0.0 | | 9.9 | 21.9 |
| Queue Length 95th (m) | 4.4 | #293.2 | 0.8 | | m19.3 | 36.6 |
| Internal Link Dist (m) | | 298.8 | | | 45.3 | 50.2 |
| Turn Bay Length (m) | 50.0 | | 40.0 | | | |
| Base Capacity (vph) | 1338 | 2689 | 1161 | | 204 | 309 |
| 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 | 0.02 | 0.87 | 0.01 | | 0.23 | 0.33 |

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 62 (52%), Referenced to phase 8:WBTL, Start of Green
 Natural Cycle: 100
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.87
 Intersection Signal Delay: 16.1
 Intersection Capacity Utilization 88.8%
 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: Saigon Ct & Carling Ave WB



Lanes, Volumes, Timings
6: Carling Ave EB & Saigon Ct

12/06/2022

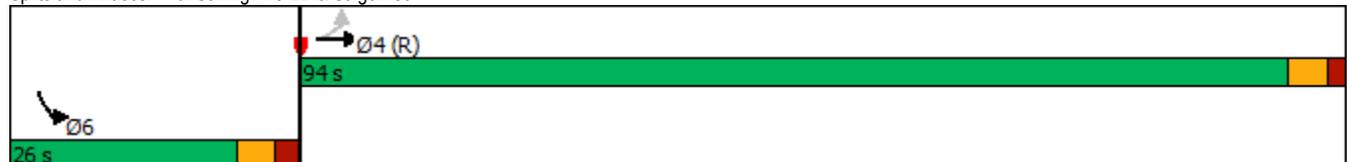


| Lane Group | EBT | SBL |
|------------------------|-------|-------|
| Lane Configurations | ↑↑ | ↑↑ |
| Traffic Volume (vph) | 1382 | 119 |
| Future Volume (vph) | 1382 | 119 |
| Lane Group Flow (vph) | 1427 | 119 |
| Turn Type | NA | Prot |
| Protected Phases | 4 | 6 |
| Permitted Phases | | |
| Detector Phase | 4 | 6 |
| Switch Phase | | |
| Minimum Initial (s) | 10.0 | 5.0 |
| Minimum Split (s) | 15.4 | 22.6 |
| Total Split (s) | 94.0 | 26.0 |
| Total Split (%) | 78.3% | 21.7% |
| Yellow Time (s) | 3.7 | 3.3 |
| All-Red Time (s) | 1.7 | 2.3 |
| Lost Time Adjust (s) | 0.0 | 0.0 |
| Total Lost Time (s) | 5.4 | 5.6 |
| Lead/Lag | | |
| Lead-Lag Optimize? | | |
| Recall Mode | C-Max | None |
| Act Effct Green (s) | 99.3 | 9.7 |
| Actuated g/C Ratio | 0.83 | 0.08 |
| v/c Ratio | 0.51 | 0.45 |
| Control Delay | 1.3 | 45.7 |
| Queue Delay | 0.0 | 0.0 |
| Total Delay | 1.3 | 45.7 |
| LOS | A | D |
| Approach Delay | 1.3 | 45.7 |
| Approach LOS | A | D |
| Queue Length 50th (m) | 5.5 | 15.1 |
| Queue Length 95th (m) | 7.4 | 24.7 |
| Internal Link Dist (m) | 110.2 | 45.3 |
| Turn Bay Length (m) | | |
| Base Capacity (vph) | 2799 | 558 |
| Starvation Cap Reductn | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 |
| Storage Cap Reductn | 0 | 0 |
| Reduced v/c Ratio | 0.51 | 0.21 |

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 105 (88%), Referenced to phase 4:EBTL, Start of Green
 Natural Cycle: 60
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.51
 Intersection Signal Delay: 4.7
 Intersection Capacity Utilization 55.0%
 Analysis Period (min) 15
 Intersection LOS: A
 ICU Level of Service B

Splits and Phases: 6: Carling Ave EB & Saigon Ct



Lanes, Volumes, Timings
 7: Clyde Ave & Laperriere Ave

12/06/2022



| Lane Group | WBL | NBT | SBT |
|---|------|------------------------|------|
| Lane Configurations | | | |
| Traffic Volume (vph) | 249 | 243 | 276 |
| Future Volume (vph) | 249 | 243 | 276 |
| Lane Group Flow (vph) | 455 | 406 | 429 |
| Sign Control | Stop | Stop | Stop |
| Intersection Summary | | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization 86.7% | | ICU Level of Service E | |
| Analysis Period (min) 15 | | | |

HCM Unsignalized Intersection Capacity Analysis
 7: Clyde Ave & Laperriere Ave

12/06/2022



| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|-----------------------------------|-------|-------|-------|----------------------|------|------|
| Lane Configurations | | | | | | |
| Sign Control | Stop | | Stop | | | Stop |
| Traffic Volume (vph) | 249 | 206 | 243 | 163 | 153 | 276 |
| Future Volume (vph) | 249 | 206 | 243 | 163 | 153 | 276 |
| Peak Hour Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Hourly flow rate (vph) | 249 | 206 | 243 | 163 | 153 | 276 |
| Direction, Lane # | WB 1 | NB 1 | SB 1 | | | |
| Volume Total (vph) | 455 | 406 | 429 | | | |
| Volume Left (vph) | 249 | 0 | 153 | | | |
| Volume Right (vph) | 206 | 163 | 0 | | | |
| Hadj (s) | -0.11 | -0.13 | 0.16 | | | |
| Departure Headway (s) | 6.3 | 6.2 | 6.4 | | | |
| Degree Utilization, x | 0.79 | 0.70 | 0.77 | | | |
| Capacity (veh/h) | 555 | 557 | 539 | | | |
| Control Delay (s) | 28.8 | 22.4 | 27.4 | | | |
| Approach Delay (s) | 28.8 | 22.4 | 27.4 | | | |
| Approach LOS | D | C | D | | | |
| Intersection Summary | | | | | | |
| Delay | | | 26.3 | | | |
| Level of Service | | | D | | | |
| Intersection Capacity Utilization | | | 86.7% | ICU Level of Service | E | |
| Analysis Period (min) | | | 15 | | | |

Lanes, Volumes, Timings
 8: Clyde Ave & Woodward Dr

12/06/2022



| Lane Group | EBL | EBR | NBT | SBT | SBR |
|---|------|-----|------------------------|------|-----|
| Lane Configurations | | | | | |
| Traffic Volume (vph) | 354 | 17 | 52 | 18 | 509 |
| Future Volume (vph) | 354 | 17 | 52 | 18 | 509 |
| Lane Group Flow (vph) | 354 | 17 | 73 | 18 | 509 |
| Sign Control | Free | | Stop | Stop | |
| Intersection Summary | | | | | |
| Control Type: Unsignalized | | | | | |
| Intersection Capacity Utilization 44.0% | | | ICU Level of Service A | | |
| Analysis Period (min) 15 | | | | | |

HCM Unsignalized Intersection Capacity Analysis
 8: Clyde Ave & Woodward Dr

12/06/2022



| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|-----------------------------------|-------------|-------------|-------------|----------------------|------|------|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 354 | 17 | 21 | 52 | 18 | 509 |
| Future Volume (Veh/h) | 354 | 17 | 21 | 52 | 18 | 509 |
| Sign Control | Free | | | Stop | Stop | |
| Grade | 0% | | | 0% | 0% | |
| Peak Hour Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Hourly flow rate (vph) | 354 | 17 | 21 | 52 | 18 | 509 |
| Pedestrians | | | | | | |
| Lane Width (m) | | | | | | |
| Walking Speed (m/s) | | | | | | |
| Percent Blockage | | | | | | |
| Right turn flare (veh) | 3 | | | | | |
| Median type | None | | | | | |
| Median storage (veh) | | | | | | |
| Upstream signal (m) | | | | | | |
| pX, platoon unblocked | | | | | | |
| vC, conflicting volume | 0 | | 717 | 708 | 708 | 0 |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | 0 | | 717 | 708 | 708 | 0 |
| tC, single (s) | 4.1 | | 7.1 | 6.5 | 6.5 | 6.2 |
| tC, 2 stage (s) | | | | | | |
| tF (s) | 2.2 | | 3.5 | 4.0 | 4.0 | 3.3 |
| p0 queue free % | 78 | | 86 | 82 | 94 | 53 |
| cM capacity (veh/h) | 1623 | | 145 | 281 | 281 | 1085 |
| Direction, Lane # | EB 1 | EB 2 | NB 1 | SB 1 | | |
| Volume Total | 354 | 17 | 73 | 527 | | |
| Volume Left | 354 | 0 | 21 | 0 | | |
| Volume Right | 0 | 17 | 0 | 509 | | |
| cSH | 1623 | 1700 | 221 | 1123 | | |
| Volume to Capacity | 0.22 | 0.01 | 0.33 | 0.47 | | |
| Queue Length 95th (m) | 6.3 | 0.0 | 10.4 | 19.5 | | |
| Control Delay (s) | 7.8 | 0.0 | 29.1 | 11.5 | | |
| Lane LOS | A | | D | B | | |
| Approach Delay (s) | 7.5 | | 29.1 | 11.5 | | |
| Approach LOS | | | D | B | | |
| Intersection Summary | | | | | | |
| Average Delay | | | 11.3 | | | |
| Intersection Capacity Utilization | | | 44.0% | ICU Level of Service | A | |
| Analysis Period (min) | | | 15 | | | |

Total Projected 2026 with Demand Rationalization

Lanes, Volumes, Timings
1: Churchill Ave & Carling Ave

12/06/2022



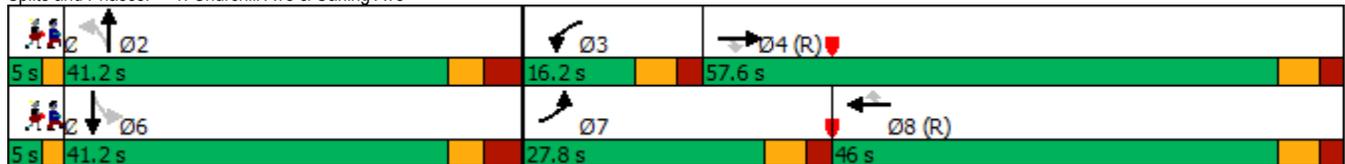
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | SBL | SBT | Ø1 | Ø5 |
|------------------------|-------|--------|-------|-------|-------|-------|-------|-------|--------|-------|------|------|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 177 | 1400 | 104 | 135 | 640 | 154 | 29 | 17 | 347 | 35 | | |
| Future Volume (vph) | 177 | 1400 | 104 | 135 | 640 | 154 | 29 | 17 | 347 | 35 | | |
| Lane Group Flow (vph) | 177 | 1400 | 104 | 135 | 640 | 154 | 29 | 118 | 347 | 280 | | |
| Turn Type | Prot | NA | Perm | Prot | NA | Perm | Perm | NA | Perm | NA | | |
| Protected Phases | 7 | 4 | | 3 | 8 | | | 2 | | 6 | 1 | 5 |
| Permitted Phases | | | 4 | | | 8 | 2 | | 6 | | | |
| Detector Phase | 7 | 4 | 4 | 3 | 8 | 8 | 2 | 2 | 6 | 6 | | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 5.0 | 10.0 | 10.0 | 5.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 3.0 | 3.0 |
| Minimum Split (s) | 11.1 | 34.1 | 34.1 | 11.1 | 34.1 | 34.1 | 39.8 | 39.8 | 39.8 | 39.8 | 5.0 | 5.0 |
| Total Split (s) | 27.8 | 57.6 | 57.6 | 16.2 | 46.0 | 46.0 | 41.2 | 41.2 | 41.2 | 41.2 | 5.0 | 5.0 |
| Total Split (%) | 23.2% | 48.0% | 48.0% | 13.5% | 38.3% | 38.3% | 34.3% | 34.3% | 34.3% | 34.3% | 4% | 4% |
| Yellow Time (s) | 3.7 | 3.7 | 3.7 | 3.7 | 3.7 | 3.7 | 3.3 | 3.3 | 3.3 | 3.3 | 2.0 | 2.0 |
| All-Red Time (s) | 2.4 | 2.4 | 2.4 | 2.4 | 2.4 | 2.4 | 3.5 | 3.5 | 3.5 | 3.5 | 0.0 | 0.0 |
| 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) | 6.1 | 6.1 | 6.1 | 6.1 | 6.1 | 6.1 | 6.8 | 6.8 | 6.8 | 6.8 | | |
| Lead/Lag | Lead | Lag | Lag | Lead | Lag | Lag | Lag | Lag | Lag | Lag | Lead | Lead |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Recall Mode | None | C-Max | C-Max | None | C-Max | C-Max | Max | Max | Max | Max | None | None |
| Act Effct Green (s) | 17.2 | 51.5 | 51.5 | 10.1 | 44.4 | 44.4 | 39.4 | 39.4 | 39.4 | 39.4 | | |
| Actuated g/C Ratio | 0.14 | 0.43 | 0.43 | 0.08 | 0.37 | 0.37 | 0.33 | 0.33 | 0.33 | 0.33 | | |
| v/c Ratio | 0.73 | 0.96 | 0.15 | 0.95 | 0.52 | 0.26 | 0.11 | 0.21 | 0.89 | 0.44 | | |
| Control Delay | 65.9 | 48.8 | 11.9 | 117.0 | 29.9 | 5.6 | 29.6 | 8.5 | 65.0 | 8.0 | | |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | |
| Total Delay | 65.9 | 48.8 | 11.9 | 117.0 | 29.9 | 5.6 | 29.6 | 8.5 | 65.0 | 8.0 | | |
| LOS | E | D | B | F | C | A | C | A | E | A | | |
| Approach Delay | | 48.3 | | | 38.5 | | | 12.6 | | 39.5 | | |
| Approach LOS | | D | | | D | | | B | | D | | |
| Queue Length 50th (m) | 44.3 | 105.3 | 4.3 | 28.6 | 62.3 | 2.4 | 4.8 | 2.7 | 77.4 | 5.7 | | |
| Queue Length 95th (m) | m54.3 | #209.8 | m9.7 | #68.2 | 84.6 | 16.2 | 12.1 | 15.6 | #132.2 | 26.5 | | |
| Internal Link Dist (m) | | 162.3 | | | 176.6 | | | 177.0 | | 412.2 | | |
| Turn Bay Length (m) | 65.0 | | 30.0 | 65.0 | | 40.0 | 20.0 | | 20.0 | | | |
| Base Capacity (vph) | 306 | 1454 | 680 | 142 | 1229 | 600 | 270 | 564 | 388 | 640 | | |
| 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 | 0.58 | 0.96 | 0.15 | 0.95 | 0.52 | 0.26 | 0.11 | 0.21 | 0.89 | 0.44 | | |

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 92 (77%), Referenced to phase 4:EBT and 8:WBT, Start of Green
 Natural Cycle: 120
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.96
 Intersection Signal Delay: 42.4
 Intersection Capacity Utilization 92.1%
 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.

Intersection LOS: D
 ICU Level of Service F

Splits and Phases: 1: Churchill Ave & Carling Ave



Lanes, Volumes, Timings
2: Clyde Ave/Cole Ave & Carling Ave

12/06/2022

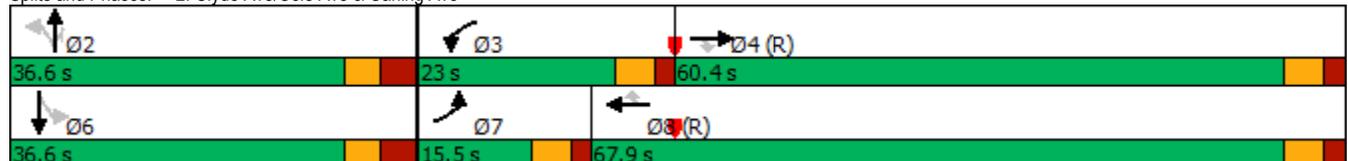


| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT |
|------------------------|-------|--------|-------|--------|-------|-------|-------|-------|-------|-------|-------|
| Lane Configurations | | | | | | | | | | | |
| Traffic Volume (vph) | 61 | 1471 | 122 | 225 | 668 | 52 | 129 | 51 | 150 | 35 | 63 |
| Future Volume (vph) | 61 | 1471 | 122 | 225 | 668 | 52 | 129 | 51 | 150 | 35 | 63 |
| Lane Group Flow (vph) | 61 | 1471 | 122 | 225 | 668 | 52 | 129 | 51 | 150 | 35 | 129 |
| Turn Type | Prot | NA | Perm | Prot | NA | Perm | Perm | NA | Perm | Perm | NA |
| Protected Phases | 7 | 4 | | 3 | 8 | | | 2 | | | 6 |
| Permitted Phases | | | 4 | | | 8 | 2 | | 2 | 6 | |
| Detector Phase | 7 | 4 | 4 | 3 | 8 | 8 | 2 | 2 | 2 | 6 | 6 |
| Switch Phase | | | | | | | | | | | |
| Minimum Initial (s) | 5.0 | 10.0 | 10.0 | 5.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 |
| Minimum Split (s) | 10.4 | 30.8 | 30.8 | 10.4 | 30.8 | 30.8 | 36.6 | 36.6 | 36.6 | 36.6 | 36.6 |
| Total Split (s) | 15.5 | 60.4 | 60.4 | 23.0 | 67.9 | 67.9 | 36.6 | 36.6 | 36.6 | 36.6 | 36.6 |
| Total Split (%) | 12.9% | 50.3% | 50.3% | 19.2% | 56.6% | 56.6% | 30.5% | 30.5% | 30.5% | 30.5% | 30.5% |
| Yellow Time (s) | 3.7 | 3.7 | 3.7 | 3.7 | 3.7 | 3.7 | 3.3 | 3.3 | 3.3 | 3.3 | 3.3 |
| All-Red Time (s) | 1.7 | 2.1 | 2.1 | 1.7 | 2.1 | 2.1 | 3.3 | 3.3 | 3.3 | 3.3 | 3.3 |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | 5.4 | 5.8 | 5.8 | 5.4 | 5.8 | 5.8 | 6.6 | 6.6 | 6.6 | 6.6 | 6.6 |
| Lead/Lag | Lead | Lag | Lag | Lead | Lag | Lag | | | | | |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | Yes | Yes | | | | | |
| Recall Mode | None | C-Max | C-Max | None | C-Max | C-Max | None | None | None | None | None |
| Act Effct Green (s) | 9.0 | 61.1 | 61.1 | 21.4 | 75.8 | 75.8 | 19.6 | 19.6 | 19.6 | 19.6 | 19.6 |
| Actuated g/C Ratio | 0.08 | 0.51 | 0.51 | 0.18 | 0.63 | 0.63 | 0.16 | 0.16 | 0.16 | 0.16 | 0.16 |
| v/c Ratio | 0.48 | 0.85 | 0.15 | 0.77 | 0.32 | 0.05 | 0.75 | 0.17 | 0.44 | 0.17 | 0.43 |
| Control Delay | 66.9 | 13.6 | 0.3 | 75.7 | 6.7 | 0.3 | 71.3 | 41.4 | 10.2 | 41.6 | 32.6 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 66.9 | 13.6 | 0.3 | 75.7 | 6.7 | 0.3 | 71.3 | 41.4 | 10.2 | 41.6 | 32.6 |
| LOS | E | B | A | E | A | A | E | D | B | D | C |
| Approach Delay | | 14.6 | | | 22.8 | | | 38.9 | | | 34.5 |
| Approach LOS | | B | | | C | | | D | | | C |
| Queue Length 50th (m) | 15.3 | 30.0 | 0.1 | 54.5 | 17.1 | 0.2 | 29.4 | 10.5 | 0.0 | 7.2 | 18.4 |
| Queue Length 95th (m) | m18.8 | #217.6 | m0.0 | #103.1 | 28.4 | m0.7 | 45.9 | 19.6 | 15.9 | 14.9 | 33.2 |
| Internal Link Dist (m) | | 369.5 | | | 87.5 | | | 83.7 | | | 136.4 |
| Turn Bay Length (m) | 20.0 | | 105.0 | 120.0 | | 30.0 | 95.0 | | 5.0 | 20.0 | |
| Base Capacity (vph) | 145 | 1726 | 821 | 291 | 2100 | 955 | 265 | 446 | 442 | 318 | 438 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 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 |
| Reduced v/c Ratio | 0.42 | 0.85 | 0.15 | 0.77 | 0.32 | 0.05 | 0.49 | 0.11 | 0.34 | 0.11 | 0.29 |

Intersection Summary

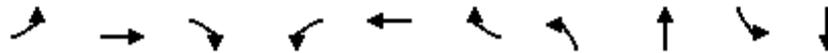
Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 93 (78%), Referenced to phase 4:EBT and 8:WBT, Start of Green
 Natural Cycle: 110
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.85
 Intersection Signal Delay: 20.7
 Intersection Capacity Utilization 98.9%
 Analysis Period (min) 15
 # 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: Clyde Ave/Cole Ave & Carling Ave



Lanes, Volumes, Timings
3: Broadview Ave & Carling Ave

12/06/2022

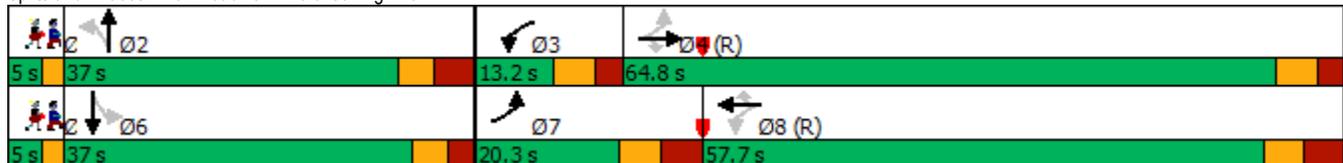


| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | SBL | SBT | Ø1 | Ø5 |
|------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|------|------|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 197 | 1482 | 104 | 99 | 656 | 121 | 112 | 24 | 158 | 20 | | |
| Future Volume (vph) | 197 | 1482 | 104 | 99 | 656 | 121 | 112 | 24 | 158 | 20 | | |
| Lane Group Flow (vph) | 197 | 1482 | 104 | 99 | 656 | 121 | 112 | 96 | 158 | 155 | | |
| Turn Type | pm+pt | NA | Perm | pm+pt | NA | Perm | Perm | NA | Perm | NA | | |
| Protected Phases | 7 | 4 | | 3 | 8 | | | 2 | | 6 | 1 | 5 |
| Permitted Phases | 4 | | 4 | 8 | | 8 | 2 | | 6 | | | |
| Detector Phase | 7 | 4 | 4 | 3 | 8 | 8 | 2 | 2 | 6 | 6 | | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 5.0 | 10.0 | 10.0 | 5.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 3.0 | 3.0 |
| Minimum Split (s) | 12.4 | 23.2 | 23.2 | 11.2 | 24.4 | 24.4 | 37.0 | 37.0 | 35.8 | 35.8 | 5.0 | 5.0 |
| Total Split (s) | 20.3 | 64.8 | 64.8 | 13.2 | 57.7 | 57.7 | 37.0 | 37.0 | 37.0 | 37.0 | 5.0 | 5.0 |
| Total Split (%) | 16.9% | 54.0% | 54.0% | 11.0% | 48.1% | 48.1% | 30.8% | 30.8% | 30.8% | 30.8% | 4% | 4% |
| Yellow Time (s) | 3.7 | 3.7 | 3.7 | 3.7 | 3.7 | 3.7 | 3.3 | 3.3 | 3.3 | 3.3 | 2.0 | 2.0 |
| All-Red Time (s) | 3.7 | 2.5 | 2.5 | 2.5 | 3.7 | 3.7 | 3.7 | 3.7 | 2.5 | 2.5 | 0.0 | 0.0 |
| 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) | 7.4 | 6.2 | 6.2 | 6.2 | 7.4 | 7.4 | 7.0 | 7.0 | 5.8 | 5.8 | | |
| Lead/Lag | Lead | Lag | Lag | Lead | Lag | Lag | Lag | Lag | Lag | Lag | Lead | Lead |
| Lead-Lag Optimize? | Yes | Yes | Yes |
| Recall Mode | None | C-Max | C-Max | None | C-Max | C-Max | Max | Max | Max | Max | Min | Min |
| Act Effct Green (s) | 68.8 | 58.7 | 58.7 | 60.0 | 51.9 | 51.9 | 30.0 | 30.0 | 31.2 | 31.2 | | |
| Actuated g/C Ratio | 0.57 | 0.49 | 0.49 | 0.50 | 0.43 | 0.43 | 0.25 | 0.25 | 0.26 | 0.26 | | |
| v/c Ratio | 0.48 | 0.89 | 0.16 | 0.63 | 0.47 | 0.20 | 0.46 | 0.22 | 0.51 | 0.34 | | |
| Control Delay | 15.6 | 36.2 | 3.3 | 41.7 | 38.4 | 16.3 | 45.3 | 13.7 | 44.8 | 10.3 | | |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | |
| Total Delay | 15.6 | 36.2 | 3.3 | 41.7 | 38.4 | 16.3 | 45.3 | 13.7 | 44.8 | 10.3 | | |
| LOS | B | D | A | D | D | B | D | B | D | B | | |
| Approach Delay | | 32.0 | | | 35.7 | | | 30.7 | | 27.7 | | |
| Approach LOS | | C | | | D | | | C | | C | | |
| Queue Length 50th (m) | 20.4 | 162.1 | 0.0 | 14.0 | 67.9 | 8.6 | 22.4 | 4.3 | 31.9 | 3.6 | | |
| Queue Length 95th (m) | 32.2 | 197.0 | 8.0 | #30.4 | 81.4 | 22.0 | 40.8 | 17.8 | 53.7 | 20.2 | | |
| Internal Link Dist (m) | | 239.1 | | | 369.5 | | | 434.9 | | 268.8 | | |
| Turn Bay Length (m) | 70.0 | | 30.0 | 50.0 | | 30.0 | 20.0 | | 45.0 | | | |
| Base Capacity (vph) | 435 | 1658 | 665 | 159 | 1409 | 615 | 244 | 432 | 309 | 458 | | |
| 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 | 0.45 | 0.89 | 0.16 | 0.62 | 0.47 | 0.20 | 0.46 | 0.22 | 0.51 | 0.34 | | |

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 77 (64%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green
 Natural Cycle: 100
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.89
 Intersection Signal Delay: 32.5
 Intersection LOS: C
 Intersection Capacity Utilization 104.3%
 ICU Level of Service G
 Analysis Period (min) 15
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 3: Broadview Ave & Carling Ave



Lanes, Volumes, Timings
4: Clyde Ave & Doheny St

12/06/2022

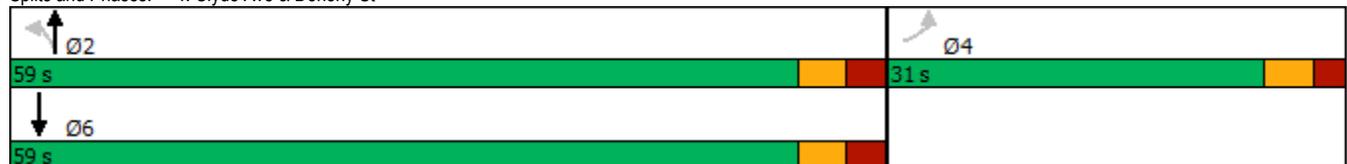


| Lane Group | EBL | NBL | NBT | SBT |
|------------------------|-------|-------|-------|-------|
| Lane Configurations | | | | |
| Traffic Volume (vph) | 34 | 91 | 293 | 326 |
| Future Volume (vph) | 34 | 91 | 293 | 326 |
| Lane Group Flow (vph) | 94 | 91 | 293 | 406 |
| Turn Type | Perm | Perm | NA | NA |
| Protected Phases | | | 2 | 6 |
| Permitted Phases | 4 | 2 | | |
| Detector Phase | 4 | 2 | 2 | 6 |
| Switch Phase | | | | |
| Minimum Initial (s) | 10.0 | 10.0 | 10.0 | 10.0 |
| Minimum Split (s) | 24.6 | 29.0 | 29.0 | 29.0 |
| Total Split (s) | 31.0 | 59.0 | 59.0 | 59.0 |
| Total Split (%) | 34.4% | 65.6% | 65.6% | 65.6% |
| Yellow Time (s) | 3.3 | 3.3 | 3.3 | 3.3 |
| All-Red Time (s) | 2.3 | 2.7 | 2.7 | 2.7 |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | 5.6 | 6.0 | 6.0 | 6.0 |
| Lead/Lag | | | | |
| Lead-Lag Optimize? | | | | |
| Recall Mode | None | Max | Max | Max |
| Act Effct Green (s) | 11.8 | 65.0 | 65.0 | 65.0 |
| Actuated g/C Ratio | 0.14 | 0.78 | 0.78 | 0.78 |
| v/c Ratio | 0.34 | 0.13 | 0.23 | 0.31 |
| Control Delay | 17.8 | 4.8 | 4.6 | 4.9 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 17.8 | 4.8 | 4.6 | 4.9 |
| LOS | B | A | A | A |
| Approach Delay | 17.8 | | 4.7 | 4.9 |
| Approach LOS | B | | A | A |
| Queue Length 50th (m) | 5.3 | 3.3 | 11.7 | 16.3 |
| Queue Length 95th (m) | 16.1 | 11.1 | 30.0 | 41.4 |
| Internal Link Dist (m) | 281.3 | | 265.7 | 16.3 |
| Turn Bay Length (m) | | 45.0 | | |
| Base Capacity (vph) | 521 | 722 | 1298 | 1307 |
| 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 | 0.18 | 0.13 | 0.23 | 0.31 |

Intersection Summary

| | |
|---|------------------------|
| Cycle Length: 90 | |
| Actuated Cycle Length: 83.6 | |
| Natural Cycle: 55 | |
| Control Type: Actuated-Uncoordinated | |
| Maximum v/c Ratio: 0.34 | |
| Intersection Signal Delay: 6.2 | Intersection LOS: A |
| Intersection Capacity Utilization 55.6% | ICU Level of Service B |
| Analysis Period (min) 15 | |

Splits and Phases: 4: Clyde Ave & Doheny St



Lanes, Volumes, Timings
5: Saigon Ct & Carling Ave WB

12/06/2022



| Lane Group | WBL | WBT | WBR | NBL | NBT | SBT |
|------------------------|-------|-------|-------|-------|-------|-------|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 29 | 887 | 58 | 22 | 52 | 26 |
| Future Volume (vph) | 29 | 887 | 58 | 22 | 52 | 26 |
| Lane Group Flow (vph) | 29 | 887 | 58 | 0 | 74 | 35 |
| Turn Type | Perm | NA | Perm | Perm | NA | NA |
| Protected Phases | | 8 | | | 2 | 6 |
| Permitted Phases | 8 | | 8 | 2 | | |
| Detector Phase | 8 | 8 | 8 | 2 | 2 | 6 |
| Switch Phase | | | | | | |
| Minimum Initial (s) | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 |
| Minimum Split (s) | 29.7 | 29.7 | 29.7 | 26.7 | 26.7 | 26.7 |
| Total Split (s) | 84.0 | 84.0 | 84.0 | 36.0 | 36.0 | 36.0 |
| Total Split (%) | 70.0% | 70.0% | 70.0% | 30.0% | 30.0% | 30.0% |
| Yellow Time (s) | 3.7 | 3.7 | 3.7 | 3.3 | 3.3 | 3.3 |
| All-Red Time (s) | 2.0 | 2.0 | 2.0 | 2.4 | 2.4 | 2.4 |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 |
| Total Lost Time (s) | 5.7 | 5.7 | 5.7 | | 5.7 | 5.7 |
| Lead/Lag | | | | | | |
| Lead-Lag Optimize? | | | | | | |
| Recall Mode | C-Max | C-Max | C-Max | None | None | None |
| Act Effct Green (s) | 101.2 | 101.2 | 101.2 | | 11.7 | 11.7 |
| Actuated g/C Ratio | 0.84 | 0.84 | 0.84 | | 0.10 | 0.10 |
| v/c Ratio | 0.02 | 0.32 | 0.05 | | 0.48 | 0.20 |
| Control Delay | 2.6 | 3.1 | 0.8 | | 45.6 | 41.7 |
| Queue Delay | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 |
| Total Delay | 2.6 | 3.1 | 0.8 | | 45.6 | 41.7 |
| LOS | A | A | A | | D | D |
| Approach Delay | | 3.0 | | | 45.6 | 41.7 |
| Approach LOS | | A | | | D | D |
| Queue Length 50th (m) | 1.0 | 21.7 | 0.0 | | 15.3 | 5.8 |
| Queue Length 95th (m) | 3.2 | 34.7 | 2.5 | | m24.4 | 15.2 |
| Internal Link Dist (m) | | 298.8 | | | 45.3 | 50.2 |
| Turn Bay Length (m) | 50.0 | | 40.0 | | | |
| Base Capacity (vph) | 1429 | 2777 | 1238 | | 399 | 441 |
| Starvation Cap Reductn | 0 | 0 | 0 | | 14 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | | 0 | 0 |
| Reduced v/c Ratio | 0.02 | 0.32 | 0.05 | | 0.19 | 0.08 |

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 62 (52%), Referenced to phase 8:WBTL, Start of Green
 Natural Cycle: 60
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.48
 Intersection Signal Delay: 7.2
 Intersection Capacity Utilization 46.2%
 Analysis Period (min) 15
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 5: Saigon Ct & Carling Ave WB



Lanes, Volumes, Timings
6: Carling Ave EB & Saigon Ct

12/06/2022

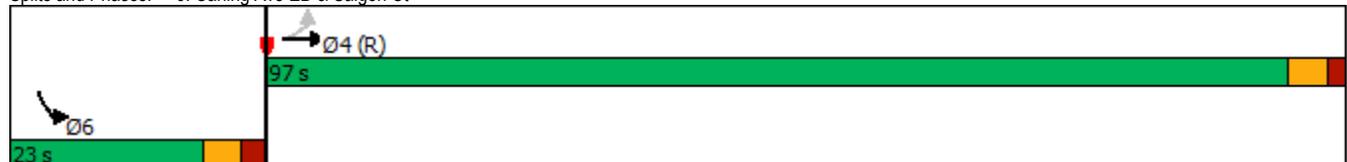


| Lane Group | EBT | SBL |
|------------------------|-------|-------|
| Lane Configurations | | |
| Traffic Volume (vph) | 1770 | 42 |
| Future Volume (vph) | 1770 | 42 |
| Lane Group Flow (vph) | 1875 | 42 |
| Turn Type | NA | Prot |
| Protected Phases | 4 | 6 |
| Permitted Phases | | |
| Detector Phase | 4 | 6 |
| Switch Phase | | |
| Minimum Initial (s) | 10.0 | 5.0 |
| Minimum Split (s) | 15.4 | 22.6 |
| Total Split (s) | 97.0 | 23.0 |
| Total Split (%) | 80.8% | 19.2% |
| Yellow Time (s) | 3.7 | 3.3 |
| All-Red Time (s) | 1.7 | 2.3 |
| Lost Time Adjust (s) | 0.0 | 0.0 |
| Total Lost Time (s) | 5.4 | 5.6 |
| Lead/Lag | | |
| Lead-Lag Optimize? | | |
| Recall Mode | C-Max | None |
| Act Effct Green (s) | 105.3 | 7.0 |
| Actuated g/C Ratio | 0.88 | 0.06 |
| v/c Ratio | 0.63 | 0.22 |
| Control Delay | 1.7 | 53.8 |
| Queue Delay | 0.0 | 0.0 |
| Total Delay | 1.7 | 53.8 |
| LOS | A | D |
| Approach Delay | 1.7 | 53.8 |
| Approach LOS | A | D |
| Queue Length 50th (m) | 4.6 | 5.2 |
| Queue Length 95th (m) | m7.1 | 11.1 |
| Internal Link Dist (m) | 110.2 | 45.3 |
| Turn Bay Length (m) | | |
| Base Capacity (vph) | 2966 | 476 |
| Starvation Cap Reductn | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 |
| Storage Cap Reductn | 0 | 0 |
| Reduced v/c Ratio | 0.63 | 0.09 |

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 105 (88%), Referenced to phase 4:EBTL, Start of Green
 Natural Cycle: 70
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.63
 Intersection Signal Delay: 2.9
 Intersection Capacity Utilization 68.2%
 Analysis Period (min) 15
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 6: Carling Ave EB & Saigon Ct



Lanes, Volumes, Timings
 7: Clyde Ave & Laperriere Ave

12/06/2022



| Lane Group | WBL | NBT | SBT |
|---|------|------------------------|------|
| Lane Configurations | | | |
| Traffic Volume (vph) | 128 | 207 | 200 |
| Future Volume (vph) | 128 | 207 | 200 |
| Lane Group Flow (vph) | 363 | 379 | 389 |
| Sign Control | Stop | Stop | Stop |
| Intersection Summary | | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization 78.0% | | ICU Level of Service D | |
| Analysis Period (min) 15 | | | |

HCM Unsignalized Intersection Capacity Analysis
 7: Clyde Ave & Laperriere Ave

12/06/2022



| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|-----------------------------------|-------|-------|-------|----------------------|------|------|
| Lane Configurations | | | | | | |
| Sign Control | Stop | | Stop | | | Stop |
| Traffic Volume (vph) | 128 | 235 | 207 | 172 | 189 | 200 |
| Future Volume (vph) | 128 | 235 | 207 | 172 | 189 | 200 |
| Peak Hour Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Hourly flow rate (vph) | 128 | 235 | 207 | 172 | 189 | 200 |
| Direction, Lane # | WB 1 | NB 1 | SB 1 | | | |
| Volume Total (vph) | 363 | 379 | 389 | | | |
| Volume Left (vph) | 128 | 0 | 189 | | | |
| Volume Right (vph) | 235 | 172 | 0 | | | |
| Hadj (s) | -0.27 | -0.11 | 0.19 | | | |
| Departure Headway (s) | 5.7 | 5.6 | 5.8 | | | |
| Degree Utilization, x | 0.58 | 0.59 | 0.63 | | | |
| Capacity (veh/h) | 582 | 611 | 582 | | | |
| Control Delay (s) | 16.2 | 16.2 | 18.3 | | | |
| Approach Delay (s) | 16.2 | 16.2 | 18.3 | | | |
| Approach LOS | C | C | C | | | |
| Intersection Summary | | | | | | |
| Delay | | | 16.9 | | | |
| Level of Service | | | C | | | |
| Intersection Capacity Utilization | | | 78.0% | ICU Level of Service | D | |
| Analysis Period (min) | | | 15 | | | |

Lanes, Volumes, Timings
 8: Clyde Ave & Woodward Dr

12/06/2022



| Lane Group | EBL | EBR | NBT | SBT | SBR |
|---|------|-----|------------------------|------|-----|
| Lane Configurations | | | | | |
| Traffic Volume (vph) | 341 | 8 | 38 | 47 | 281 |
| Future Volume (vph) | 341 | 8 | 38 | 47 | 281 |
| Lane Group Flow (vph) | 341 | 8 | 50 | 47 | 281 |
| Sign Control | Free | | Stop | Stop | |
| Intersection Summary | | | | | |
| Control Type: Unsignalized | | | | | |
| Intersection Capacity Utilization 36.1% | | | ICU Level of Service A | | |
| Analysis Period (min) 15 | | | | | |

HCM Unsignalized Intersection Capacity Analysis
 8: Clyde Ave & Woodward Dr

12/06/2022



| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|-----------------------------------|-------------|-------------|-------------|----------------------|------|------|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 341 | 8 | 12 | 38 | 47 | 281 |
| Future Volume (Veh/h) | 341 | 8 | 12 | 38 | 47 | 281 |
| Sign Control | Free | | | Stop | Stop | |
| Grade | 0% | | | 0% | 0% | |
| Peak Hour Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Hourly flow rate (vph) | 341 | 8 | 12 | 38 | 47 | 281 |
| Pedestrians | | | | | | |
| Lane Width (m) | | | | | | |
| Walking Speed (m/s) | | | | | | |
| Percent Blockage | | | | | | |
| Right turn flare (veh) | 3 | | | | | |
| Median type | None | | | | | |
| Median storage (veh) | | | | | | |
| Upstream signal (m) | | | | | | |
| pX, platoon unblocked | | | | | | |
| vC, conflicting volume | 0 | | 706 | 682 | 682 | 0 |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | 0 | | 706 | 682 | 682 | 0 |
| tC, single (s) | 4.1 | | 7.1 | 6.5 | 6.5 | 6.2 |
| tC, 2 stage (s) | | | | | | |
| tF (s) | 2.2 | | 3.5 | 4.0 | 4.0 | 3.3 |
| p0 queue free % | 79 | | 94 | 87 | 84 | 74 |
| cM capacity (veh/h) | 1623 | | 192 | 294 | 294 | 1085 |
| Direction, Lane # | EB 1 | EB 2 | NB 1 | SB 1 | | |
| Volume Total | 341 | 8 | 50 | 328 | | |
| Volume Left | 341 | 0 | 12 | 0 | | |
| Volume Right | 0 | 8 | 0 | 281 | | |
| cSH | 1623 | 1700 | 261 | 1266 | | |
| Volume to Capacity | 0.21 | 0.00 | 0.19 | 0.26 | | |
| Queue Length 95th (m) | 6.0 | 0.0 | 5.3 | 7.9 | | |
| Control Delay (s) | 7.8 | 0.0 | 22.0 | 10.9 | | |
| Lane LOS | A | | C | B | | |
| Approach Delay (s) | 7.6 | | 22.0 | 10.9 | | |
| Approach LOS | | | C | B | | |
| Intersection Summary | | | | | | |
| Average Delay | | | 10.1 | | | |
| Intersection Capacity Utilization | | | 36.1% | ICU Level of Service | A | |
| Analysis Period (min) | | | 15 | | | |

Lanes, Volumes, Timings
 9: Clyde Ave & Clyde Access

12/06/2022



| Lane Group | WBL | NBT | SBT |
|---|------|------------------------|------|
| Lane Configurations | | | |
| Traffic Volume (vph) | 21 | 319 | 387 |
| Future Volume (vph) | 21 | 319 | 387 |
| Lane Group Flow (vph) | 42 | 324 | 399 |
| Sign Control | Stop | Free | Free |
| Intersection Summary | | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization 30.5% | | ICU Level of Service A | |
| Analysis Period (min) 15 | | | |

HCM Unsignalized Intersection Capacity Analysis
 9: Clyde Ave & Clyde Access

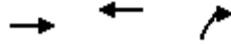
12/06/2022



| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|-----------------------------------|-------------|-------------|-------------|-------------|----------------------|------|
| Lane Configurations | W | | T | | | T |
| Traffic Volume (veh/h) | 21 | 21 | 319 | 5 | 12 | 387 |
| Future Volume (Veh/h) | 21 | 21 | 319 | 5 | 12 | 387 |
| Sign Control | Stop | | Free | | | Free |
| Grade | 0% | | 0% | | | 0% |
| Peak Hour Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Hourly flow rate (vph) | 21 | 21 | 319 | 5 | 12 | 387 |
| Pedestrians | | | | | | |
| Lane Width (m) | | | | | | |
| Walking Speed (m/s) | | | | | | |
| Percent Blockage | | | | | | |
| Right turn flare (veh) | | | | | | |
| Median type | | | None | | | None |
| Median storage (veh) | | | | | | |
| Upstream signal (m) | | | 40 | | | 108 |
| pX, platoon unblocked | | | | | | |
| vC, conflicting volume | 539 | 162 | | | 324 | |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | 539 | 162 | | | 324 | |
| tC, single (s) | 6.8 | 6.9 | | | 4.1 | |
| tC, 2 stage (s) | | | | | | |
| tF (s) | 3.5 | 3.3 | | | 2.2 | |
| p0 queue free % | 96 | 98 | | | 99 | |
| cM capacity (veh/h) | 468 | 854 | | | 1233 | |
| Direction, Lane # | WB 1 | NB 1 | NB 2 | SB 1 | SB 2 | |
| Volume Total | 42 | 213 | 111 | 141 | 258 | |
| Volume Left | 21 | 0 | 0 | 12 | 0 | |
| Volume Right | 21 | 0 | 5 | 0 | 0 | |
| cSH | 605 | 1700 | 1700 | 1233 | 1700 | |
| Volume to Capacity | 0.07 | 0.13 | 0.07 | 0.01 | 0.15 | |
| Queue Length 95th (m) | 1.7 | 0.0 | 0.0 | 0.2 | 0.0 | |
| Control Delay (s) | 11.4 | 0.0 | 0.0 | 0.8 | 0.0 | |
| Lane LOS | B | | | A | | |
| Approach Delay (s) | 11.4 | 0.0 | | 0.3 | | |
| Approach LOS | B | | | | | |
| Intersection Summary | | | | | | |
| Average Delay | | | 0.8 | | | |
| Intersection Capacity Utilization | | | 30.5% | | ICU Level of Service | A |
| Analysis Period (min) | | | 15 | | | |

Lanes, Volumes, Timings
 10: Carling Access & Carling Ave

12/06/2022



| Lane Group | EBT | WBT | NBR |
|---|------|------------------------|-----|
| Lane Configurations | ↕↕ | ↕↕ | ↗ |
| Traffic Volume (vph) | 1580 | 826 | 18 |
| Future Volume (vph) | 1580 | 826 | 18 |
| Lane Group Flow (vph) | 1589 | 826 | 18 |
| Sign Control | Free | Free | |
| Intersection Summary | | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization 56.4% | | ICU Level of Service B | |
| Analysis Period (min) 15 | | | |

HCM Unsignalized Intersection Capacity Analysis
 10: Carling Access & Carling Ave

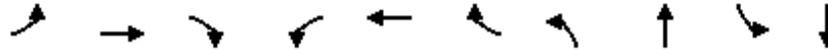
12/06/2022



| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
|-----------------------------------|-------------|-------------|-------------|-------------|----------------------|------|
| Lane Configurations | ↕↕ | | | ↕↕ | | ↗ |
| Traffic Volume (veh/h) | 1580 | 9 | 0 | 826 | 0 | 18 |
| Future Volume (Veh/h) | 1580 | 9 | 0 | 826 | 0 | 18 |
| Sign Control | Free | | | Free | Stop | |
| Grade | 0% | | | 0% | 0% | |
| Peak Hour Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Hourly flow rate (vph) | 1580 | 9 | 0 | 826 | 0 | 18 |
| Pedestrians | | | | | | |
| Lane Width (m) | | | | | | |
| Walking Speed (m/s) | | | | | | |
| Percent Blockage | | | | | | |
| Right turn flare (veh) | | | | | | |
| Median type | None | | | None | | |
| Median storage (veh) | | | | | | |
| Upstream signal (m) | 112 | | | 186 | | |
| pX, platoon unblocked | | | 0.62 | | 0.69 | 0.62 |
| vC, conflicting volume | | | 1589 | | 1998 | 794 |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | | | 728 | | 665 | 0 |
| tC, single (s) | | | 4.1 | | 6.8 | 6.9 |
| tC, 2 stage (s) | | | | | | |
| tF (s) | | | 2.2 | | 3.5 | 3.3 |
| p0 queue free % | | | 100 | | 100 | 97 |
| cM capacity (veh/h) | | | 541 | | 270 | 673 |
| Direction, Lane # | EB 1 | EB 2 | WB 1 | WB 2 | NB 1 | |
| Volume Total | 1053 | 536 | 413 | 413 | 18 | |
| Volume Left | 0 | 0 | 0 | 0 | 0 | |
| Volume Right | 0 | 9 | 0 | 0 | 18 | |
| cSH | 1700 | 1700 | 1700 | 1700 | 673 | |
| Volume to Capacity | 0.62 | 0.32 | 0.24 | 0.24 | 0.03 | |
| Queue Length 95th (m) | 0.0 | 0.0 | 0.0 | 0.0 | 0.6 | |
| Control Delay (s) | 0.0 | 0.0 | 0.0 | 0.0 | 10.5 | |
| Lane LOS | | | | | B | |
| Approach Delay (s) | 0.0 | | 0.0 | | 10.5 | |
| Approach LOS | | | | | B | |
| Intersection Summary | | | | | | |
| Average Delay | | | 0.1 | | | |
| Intersection Capacity Utilization | | | 56.4% | | ICU Level of Service | B |
| Analysis Period (min) | | | 15 | | | |

Lanes, Volumes, Timings
1: Churchill Ave & Carling Ave

12/06/2022



| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | SBL | SBT | Ø1 | Ø5 |
|------------------------|--------|-------|-------|-------|--------|-------|-------|-------|-------|-------|------|------|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 251 | 798 | 33 | 114 | 1634 | 218 | 105 | 40 | 187 | 18 | | |
| Future Volume (vph) | 251 | 798 | 33 | 114 | 1634 | 218 | 105 | 40 | 187 | 18 | | |
| Lane Group Flow (vph) | 251 | 798 | 33 | 114 | 1634 | 218 | 105 | 113 | 187 | 303 | | |
| Turn Type | Prot | NA | Perm | Prot | NA | Perm | Perm | NA | Perm | NA | | |
| Protected Phases | 7 | 4 | | 3 | 8 | | | 2 | | 6 | 1 | 5 |
| Permitted Phases | | | 4 | | | 8 | 2 | | 6 | | | |
| Detector Phase | 7 | 4 | 4 | 3 | 8 | 8 | 2 | 2 | 6 | 6 | | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 5.0 | 10.0 | 10.0 | 5.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 3.0 | 3.0 |
| Minimum Split (s) | 11.1 | 34.1 | 34.1 | 11.1 | 34.1 | 34.1 | 39.8 | 39.8 | 39.8 | 39.8 | 5.0 | 5.0 |
| Total Split (s) | 20.0 | 53.2 | 53.2 | 22.0 | 55.2 | 55.2 | 39.8 | 39.8 | 39.8 | 39.8 | 5.0 | 5.0 |
| Total Split (%) | 16.7% | 44.3% | 44.3% | 18.3% | 46.0% | 46.0% | 33.2% | 33.2% | 33.2% | 33.2% | 4% | 4% |
| Yellow Time (s) | 3.7 | 3.7 | 3.7 | 3.7 | 3.7 | 3.7 | 3.3 | 3.3 | 3.3 | 3.3 | 2.0 | 2.0 |
| All-Red Time (s) | 2.4 | 2.4 | 2.4 | 2.4 | 2.4 | 2.4 | 3.5 | 3.5 | 3.5 | 3.5 | 0.0 | 0.0 |
| 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) | 6.1 | 6.1 | 6.1 | 6.1 | 6.1 | 6.1 | 6.8 | 6.8 | 6.8 | 6.8 | | |
| Lead/Lag | Lead | Lag | Lag | Lead | Lag | Lag | Lag | Lag | Lag | Lag | Lead | Lead |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Recall Mode | None | C-Max | C-Max | None | C-Max | C-Max | Max | Max | Max | Max | None | None |
| Act Effct Green (s) | 13.9 | 50.2 | 50.2 | 12.8 | 49.1 | 49.1 | 38.0 | 38.0 | 38.0 | 38.0 | | |
| Actuated g/C Ratio | 0.12 | 0.42 | 0.42 | 0.11 | 0.41 | 0.41 | 0.32 | 0.32 | 0.32 | 0.32 | | |
| v/c Ratio | 1.28 | 0.56 | 0.05 | 0.63 | 1.18 | 0.33 | 0.44 | 0.20 | 0.49 | 0.46 | | |
| Control Delay | 206.3 | 21.7 | 0.5 | 74.7 | 115.6 | 8.2 | 39.8 | 13.2 | 38.4 | 6.9 | | |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | |
| Total Delay | 206.3 | 21.7 | 0.5 | 74.7 | 115.6 | 8.2 | 39.8 | 13.2 | 38.4 | 6.9 | | |
| LOS | F | C | A | E | F | A | D | B | D | A | | |
| Approach Delay | | 63.9 | | | 101.3 | | | 26.0 | | 18.9 | | |
| Approach LOS | | E | | | F | | | C | | B | | |
| Queue Length 50th (m) | ~77.2 | 37.2 | 0.0 | 24.6 | ~244.0 | 11.3 | 19.6 | 6.6 | 35.5 | 2.9 | | |
| Queue Length 95th (m) | #129.7 | 56.7 | m0.5 | m40.5 | #284.0 | 12.2 | 37.2 | 19.9 | 58.2 | 23.8 | | |
| Internal Link Dist (m) | | 162.3 | | | 176.6 | | | 177.0 | | 412.2 | | |
| Turn Bay Length (m) | 65.0 | | 30.0 | 65.0 | | 40.0 | 20.0 | | 20.0 | | | |
| Base Capacity (vph) | 196 | 1418 | 660 | 224 | 1387 | 653 | 237 | 552 | 382 | 662 | | |
| 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 | 1.28 | 0.56 | 0.05 | 0.51 | 1.18 | 0.33 | 0.44 | 0.20 | 0.49 | 0.46 | | |

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 92 (77%), Referenced to phase 4:EBT and 8:WBT, Start of Green
 Natural Cycle: 150
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.28
 Intersection Signal Delay: 75.4
 Intersection Capacity Utilization 122.3%
 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.
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: Churchill Ave & Carling Ave



Total Projected 2026 (with Reductions) PM

Synchro 11 Report

Lanes, Volumes, Timings
2: Clyde Ave/Cole Ave & Carling Ave

12/06/2022



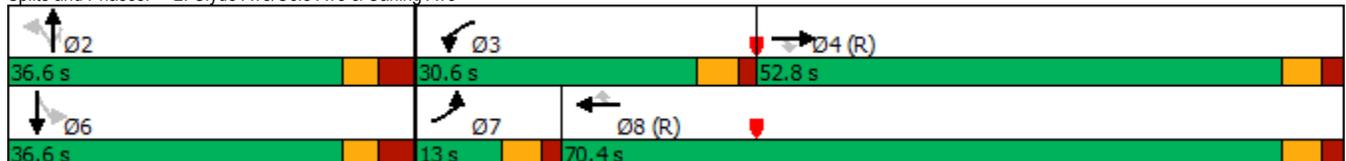
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT |
|------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Lane Configurations | | | | | | | | | | | |
| Traffic Volume (vph) | 77 | 818 | 118 | 217 | 1695 | 58 | 107 | 87 | 147 | 22 | 54 |
| Future Volume (vph) | 77 | 818 | 118 | 217 | 1695 | 58 | 107 | 87 | 147 | 22 | 54 |
| Lane Group Flow (vph) | 77 | 818 | 118 | 217 | 1695 | 58 | 107 | 87 | 147 | 22 | 116 |
| Turn Type | Prot | NA | Perm | Prot | NA | Perm | Perm | NA | Perm | Perm | NA |
| Protected Phases | 7 | 4 | | 3 | 8 | | | 2 | | | 6 |
| Permitted Phases | | | 4 | | | 8 | 2 | | 2 | 6 | |
| Detector Phase | 7 | 4 | 4 | 3 | 8 | 8 | 2 | 2 | 2 | 6 | 6 |
| Switch Phase | | | | | | | | | | | |
| Minimum Initial (s) | 5.0 | 10.0 | 10.0 | 5.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 |
| Minimum Split (s) | 10.4 | 30.8 | 30.8 | 10.4 | 30.8 | 30.8 | 36.6 | 36.6 | 36.6 | 36.6 | 36.6 |
| Total Split (s) | 13.0 | 52.8 | 52.8 | 30.6 | 70.4 | 70.4 | 36.6 | 36.6 | 36.6 | 36.6 | 36.6 |
| Total Split (%) | 10.8% | 44.0% | 44.0% | 25.5% | 58.7% | 58.7% | 30.5% | 30.5% | 30.5% | 30.5% | 30.5% |
| Yellow Time (s) | 3.7 | 3.7 | 3.7 | 3.7 | 3.7 | 3.7 | 3.3 | 3.3 | 3.3 | 3.3 | 3.3 |
| All-Red Time (s) | 1.7 | 2.1 | 2.1 | 1.7 | 2.1 | 2.1 | 3.3 | 3.3 | 3.3 | 3.3 | 3.3 |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | 5.4 | 5.8 | 5.8 | 5.4 | 5.8 | 5.8 | 6.6 | 6.6 | 6.6 | 6.6 | 6.6 |
| Lead/Lag | Lead | Lag | Lag | Lead | Lag | Lag | | | | | |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | Yes | Yes | | | | | |
| Recall Mode | None | C-Max | C-Max | None | C-Max | C-Max | None | None | None | None | None |
| Act Effct Green (s) | 8.7 | 62.4 | 62.4 | 20.0 | 73.7 | 73.7 | 19.8 | 19.8 | 19.8 | 19.8 | 19.8 |
| Actuated g/C Ratio | 0.07 | 0.52 | 0.52 | 0.17 | 0.61 | 0.61 | 0.16 | 0.16 | 0.16 | 0.16 | 0.16 |
| v/c Ratio | 0.63 | 0.46 | 0.14 | 0.77 | 0.81 | 0.06 | 0.55 | 0.30 | 0.43 | 0.11 | 0.38 |
| Control Delay | 75.5 | 11.3 | 0.6 | 47.6 | 23.8 | 4.8 | 54.2 | 43.7 | 13.4 | 39.1 | 28.2 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 75.5 | 11.3 | 0.6 | 47.6 | 23.8 | 4.8 | 54.2 | 43.7 | 13.4 | 39.1 | 28.2 |
| LOS | E | B | A | D | C | A | D | D | B | D | C |
| Approach Delay | | 14.9 | | | 25.8 | | | 34.0 | | | 29.9 |
| Approach LOS | | B | | | C | | | C | | | C |
| Queue Length 50th (m) | 18.2 | 25.5 | 0.0 | 53.7 | 109.4 | 1.2 | 24.3 | 18.9 | 4.8 | 4.6 | 15.1 |
| Queue Length 95th (m) | #44.2 | 31.4 | 1.4 | m52.2 | m98.8 | m1.4 | 37.6 | 29.9 | 20.5 | 10.8 | 28.7 |
| Internal Link Dist (m) | | 369.5 | | | 87.5 | | | 83.7 | | | 136.4 |
| Turn Bay Length (m) | 20.0 | | 105.0 | 120.0 | | 30.0 | 95.0 | | 5.0 | 20.0 | |
| Base Capacity (vph) | 124 | 1762 | 827 | 355 | 2082 | 903 | 297 | 446 | 459 | 307 | 440 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 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 |
| Reduced v/c Ratio | 0.62 | 0.46 | 0.14 | 0.61 | 0.81 | 0.06 | 0.36 | 0.20 | 0.32 | 0.07 | 0.26 |

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 93 (78%), Referenced to phase 4:EBT and 8:WBT, Start of Green
 Natural Cycle: 100
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.81
 Intersection Signal Delay: 23.6
 Intersection Capacity Utilization 86.7%
 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.

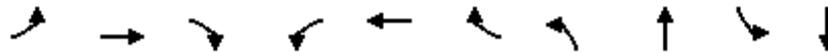
Intersection LOS: C
 ICU Level of Service E

Splits and Phases: 2: Clyde Ave/Cole Ave & Carling Ave



Lanes, Volumes, Timings
3: Broadview Ave & Carling Ave

12/06/2022

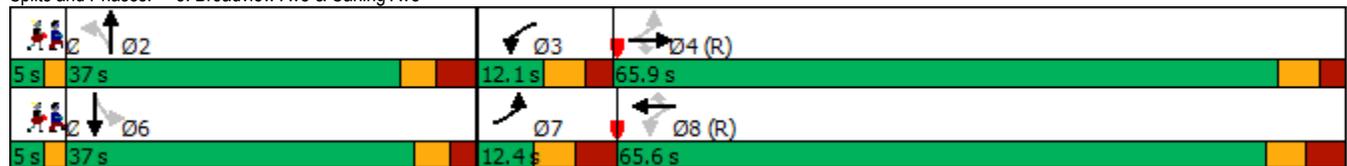


| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | SBL | SBT | Ø1 | Ø5 |
|------------------------|-------|-------|-------|-------|--------|-------|-------|-------|-------|-------|------|------|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 94 | 925 | 31 | 67 | 1745 | 64 | 181 | 35 | 65 | 23 | | |
| Future Volume (vph) | 94 | 925 | 31 | 67 | 1745 | 64 | 181 | 35 | 65 | 23 | | |
| Lane Group Flow (vph) | 94 | 925 | 31 | 67 | 1745 | 64 | 181 | 68 | 65 | 173 | | |
| Turn Type | pm+pt | NA | Perm | pm+pt | NA | Perm | Perm | NA | Perm | NA | | |
| Protected Phases | 7 | 4 | | 3 | 8 | | | 2 | | 6 | 1 | 5 |
| Permitted Phases | 4 | | 4 | 8 | | 8 | 2 | | 6 | | | |
| Detector Phase | 7 | 4 | 4 | 3 | 8 | 8 | 2 | 2 | 6 | 6 | | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 5.0 | 10.0 | 10.0 | 5.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 3.0 | 3.0 |
| Minimum Split (s) | 12.4 | 23.2 | 23.2 | 11.2 | 24.4 | 24.4 | 37.0 | 37.0 | 35.8 | 35.8 | 5.0 | 5.0 |
| Total Split (s) | 12.4 | 65.9 | 65.9 | 12.1 | 65.6 | 65.6 | 37.0 | 37.0 | 37.0 | 37.0 | 5.0 | 5.0 |
| Total Split (%) | 10.3% | 54.9% | 54.9% | 10.1% | 54.7% | 54.7% | 30.8% | 30.8% | 30.8% | 30.8% | 4% | 4% |
| Yellow Time (s) | 3.7 | 3.7 | 3.7 | 3.7 | 3.7 | 3.7 | 3.3 | 3.3 | 3.3 | 3.3 | 2.0 | 2.0 |
| All-Red Time (s) | 3.7 | 2.5 | 2.5 | 2.5 | 3.7 | 3.7 | 3.7 | 3.7 | 2.5 | 2.5 | 0.0 | 0.0 |
| 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) | 7.4 | 6.2 | 6.2 | 6.2 | 7.4 | 7.4 | 7.0 | 7.0 | 5.8 | 5.8 | | |
| Lead/Lag | Lead | Lag | Lag | Lead | Lag | Lag | Lag | Lag | Lag | Lag | Lead | Lead |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Recall Mode | None | C-Max | C-Max | None | C-Max | C-Max | Max | Max | Max | Max | Min | Min |
| Act Effct Green (s) | 64.9 | 62.1 | 62.1 | 65.3 | 58.2 | 58.2 | 30.0 | 30.0 | 31.2 | 31.2 | | |
| Actuated g/C Ratio | 0.54 | 0.52 | 0.52 | 0.54 | 0.48 | 0.48 | 0.25 | 0.25 | 0.26 | 0.26 | | |
| v/c Ratio | 0.73 | 0.53 | 0.04 | 0.23 | 1.06 | 0.09 | 0.74 | 0.16 | 0.20 | 0.35 | | |
| Control Delay | 49.3 | 21.2 | 0.1 | 16.6 | 72.3 | 3.1 | 60.4 | 21.3 | 36.7 | 10.0 | | |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | |
| Total Delay | 49.3 | 21.2 | 0.1 | 16.6 | 72.3 | 3.1 | 60.4 | 21.3 | 36.7 | 10.0 | | |
| LOS | D | C | A | B | E | A | E | C | D | B | | |
| Approach Delay | | 23.1 | | | 67.9 | | | 49.8 | | 17.3 | | |
| Approach LOS | | C | | | E | | | D | | B | | |
| Queue Length 50th (m) | 9.2 | 76.8 | 0.0 | 8.3 | ~242.1 | 0.3 | 39.3 | 6.3 | 12.0 | 4.1 | | |
| Queue Length 95th (m) | #34.2 | 95.4 | 0.0 | m9.8 | #276.0 | m1.5 | #72.9 | 17.9 | 24.1 | 21.7 | | |
| Internal Link Dist (m) | | 239.1 | | | 369.5 | | | 434.9 | | 268.8 | | |
| Turn Bay Length (m) | 70.0 | | 30.0 | 50.0 | | 30.0 | 20.0 | | 45.0 | | | |
| Base Capacity (vph) | 129 | 1754 | 778 | 287 | 1644 | 709 | 246 | 432 | 325 | 496 | | |
| 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 | 0.73 | 0.53 | 0.04 | 0.23 | 1.06 | 0.09 | 0.74 | 0.16 | 0.20 | 0.35 | | |

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 77 (64%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green
 Natural Cycle: 120
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.06
 Intersection Signal Delay: 49.3
 Intersection LOS: D
 Intersection Capacity Utilization 115.0%
 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.
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 3: Broadview Ave & Carling Ave



Total Projected 2026 (with Reductions) PM

Synchro 11 Report

Lanes, Volumes, Timings
4: Clyde Ave & Doheny St

12/06/2022

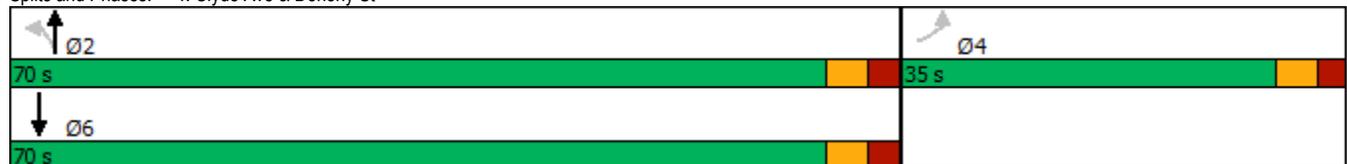


| Lane Group | EBL | NBL | NBT | SBT |
|------------------------|-------|-------|-------|-------|
| Lane Configurations | | | | |
| Traffic Volume (vph) | 24 | 32 | 294 | 250 |
| Future Volume (vph) | 24 | 32 | 294 | 250 |
| Lane Group Flow (vph) | 76 | 32 | 294 | 305 |
| Turn Type | Perm | Perm | NA | NA |
| Protected Phases | | | 2 | 6 |
| Permitted Phases | 4 | 2 | | |
| Detector Phase | 4 | 2 | 2 | 6 |
| Switch Phase | | | | |
| Minimum Initial (s) | 10.0 | 10.0 | 10.0 | 10.0 |
| Minimum Split (s) | 24.6 | 29.0 | 29.0 | 29.0 |
| Total Split (s) | 35.0 | 70.0 | 70.0 | 70.0 |
| Total Split (%) | 33.3% | 66.7% | 66.7% | 66.7% |
| Yellow Time (s) | 3.3 | 3.3 | 3.3 | 3.3 |
| All-Red Time (s) | 2.3 | 2.7 | 2.7 | 2.7 |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | 5.6 | 6.0 | 6.0 | 6.0 |
| Lead/Lag | | | | |
| Lead-Lag Optimize? | | | | |
| Recall Mode | None | Max | Max | Max |
| Act Effct Green (s) | 10.1 | 77.7 | 77.7 | 77.7 |
| Actuated g/C Ratio | 0.11 | 0.82 | 0.82 | 0.82 |
| v/c Ratio | 0.35 | 0.04 | 0.21 | 0.22 |
| Control Delay | 22.0 | 2.8 | 3.1 | 3.0 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 22.0 | 2.8 | 3.1 | 3.0 |
| LOS | C | A | A | A |
| Approach Delay | 22.0 | | 3.1 | 3.0 |
| Approach LOS | C | | A | A |
| Queue Length 50th (m) | 4.4 | 1.1 | 11.7 | 11.3 |
| Queue Length 95th (m) | 16.2 | 3.1 | 19.2 | 18.9 |
| Internal Link Dist (m) | 281.3 | | 265.7 | 16.3 |
| Turn Bay Length (m) | | 45.0 | | |
| Base Capacity (vph) | 532 | 835 | 1422 | 1380 |
| 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 | 0.14 | 0.04 | 0.21 | 0.22 |

Intersection Summary

| | |
|---|------------------------|
| Cycle Length: 105 | |
| Actuated Cycle Length: 94.7 | |
| Natural Cycle: 55 | |
| Control Type: Actuated-Uncoordinated | |
| Maximum v/c Ratio: 0.35 | |
| Intersection Signal Delay: 5.1 | Intersection LOS: A |
| Intersection Capacity Utilization 46.1% | ICU Level of Service A |
| Analysis Period (min) 15 | |

Splits and Phases: 4: Clyde Ave & Doheny St



Lanes, Volumes, Timings
5: Saigon Ct & Carling Ave WB

12/06/2022



| Lane Group | WBL | WBT | WBR | NBL | NBT | SBT |
|------------------------|-------|-------|-------|-------|-------|-------|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 32 | 1841 | 12 | 37 | 9 | 87 |
| Future Volume (vph) | 32 | 1841 | 12 | 37 | 9 | 87 |
| Lane Group Flow (vph) | 32 | 1841 | 12 | 0 | 46 | 102 |
| Turn Type | Perm | NA | Perm | Perm | NA | NA |
| Protected Phases | | 8 | | | 2 | 6 |
| Permitted Phases | 8 | | 8 | 2 | | |
| Detector Phase | 8 | 8 | 8 | 2 | 2 | 6 |
| Switch Phase | | | | | | |
| Minimum Initial (s) | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 |
| Minimum Split (s) | 29.7 | 29.7 | 29.7 | 26.7 | 26.7 | 26.7 |
| Total Split (s) | 93.0 | 93.0 | 93.0 | 27.0 | 27.0 | 27.0 |
| Total Split (%) | 77.5% | 77.5% | 77.5% | 22.5% | 22.5% | 22.5% |
| Yellow Time (s) | 3.7 | 3.7 | 3.7 | 3.3 | 3.3 | 3.3 |
| All-Red Time (s) | 2.0 | 2.0 | 2.0 | 2.4 | 2.4 | 2.4 |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 |
| Total Lost Time (s) | 5.7 | 5.7 | 5.7 | | 5.7 | 5.7 |
| Lead/Lag | | | | | | |
| Lead-Lag Optimize? | | | | | | |
| Recall Mode | C-Max | C-Max | C-Max | None | None | None |
| Act Effct Green (s) | 95.2 | 95.2 | 95.2 | | 13.4 | 13.4 |
| Actuated g/C Ratio | 0.79 | 0.79 | 0.79 | | 0.11 | 0.11 |
| v/c Ratio | 0.02 | 0.68 | 0.01 | | 0.35 | 0.51 |
| Control Delay | 3.4 | 7.9 | 0.7 | | 42.0 | 55.4 |
| Queue Delay | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 |
| Total Delay | 3.4 | 7.9 | 0.7 | | 42.0 | 55.4 |
| LOS | A | A | A | | D | E |
| Approach Delay | | 7.7 | | | 42.0 | 55.4 |
| Approach LOS | | A | | | D | E |
| Queue Length 50th (m) | 1.2 | 78.0 | 0.0 | | 9.2 | 21.9 |
| Queue Length 95th (m) | 4.4 | 144.2 | 0.8 | | 20.4 | 36.6 |
| Internal Link Dist (m) | | 298.8 | | | 45.3 | 50.2 |
| Turn Bay Length (m) | 50.0 | | 40.0 | | | |
| Base Capacity (vph) | 1338 | 2689 | 1161 | | 207 | 313 |
| 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 | 0.02 | 0.68 | 0.01 | | 0.22 | 0.33 |

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 62 (52%), Referenced to phase 8:WBTL, Start of Green
 Natural Cycle: 80
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.68
 Intersection Signal Delay: 10.9
 Intersection Capacity Utilization 74.1%
 Analysis Period (min) 15
 Intersection LOS: B
 ICU Level of Service D

Splits and Phases: 5: Saigon Ct & Carling Ave WB



Lanes, Volumes, Timings
6: Carling Ave EB & Saigon Ct

12/06/2022



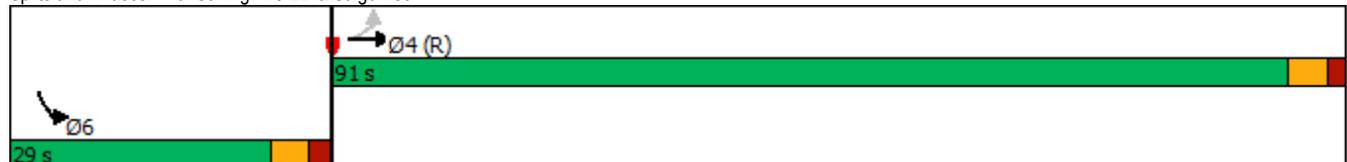
| Lane Group | EBT | SBL |
|------------------------|-------|-------|
| Lane Configurations | | |
| Traffic Volume (vph) | 1068 | 119 |
| Future Volume (vph) | 1068 | 119 |
| Lane Group Flow (vph) | 1113 | 119 |
| Turn Type | NA | Prot |
| Protected Phases | 4 | 6 |
| Permitted Phases | | |
| Detector Phase | 4 | 6 |
| Switch Phase | | |
| Minimum Initial (s) | 10.0 | 5.0 |
| Minimum Split (s) | 15.4 | 22.6 |
| Total Split (s) | 91.0 | 29.0 |
| Total Split (%) | 75.8% | 24.2% |
| Yellow Time (s) | 3.7 | 3.3 |
| All-Red Time (s) | 1.7 | 2.3 |
| Lost Time Adjust (s) | 0.0 | 0.0 |
| Total Lost Time (s) | 5.4 | 5.6 |
| Lead/Lag | | |
| Lead-Lag Optimize? | | |
| Recall Mode | C-Max | None |
| Act Effct Green (s) | 99.3 | 9.7 |
| Actuated g/C Ratio | 0.83 | 0.08 |
| v/c Ratio | 0.40 | 0.45 |
| Control Delay | 0.9 | 43.9 |
| Queue Delay | 0.0 | 0.0 |
| Total Delay | 0.9 | 43.9 |
| LOS | A | D |
| Approach Delay | 0.9 | 43.9 |
| Approach LOS | A | D |
| Queue Length 50th (m) | 4.8 | 15.1 |
| Queue Length 95th (m) | 5.7 | 24.7 |
| Internal Link Dist (m) | 110.2 | 45.3 |
| Turn Bay Length (m) | | |
| Base Capacity (vph) | 2799 | 641 |
| Starvation Cap Reductn | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 |
| Storage Cap Reductn | 0 | 0 |
| Reduced v/c Ratio | 0.40 | 0.19 |

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 105 (88%), Referenced to phase 4:EBTL, Start of Green
 Natural Cycle: 50
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.45
 Intersection Signal Delay: 5.1
 Intersection Capacity Utilization 45.9%
 Analysis Period (min) 15

Intersection LOS: A
 ICU Level of Service A

Splits and Phases: 6: Carling Ave EB & Saigon Ct



Lanes, Volumes, Timings
 7: Clyde Ave & Laperriere Ave

12/06/2022



| Lane Group | WBL | NBT | SBT |
|---|------|------------------------|------|
| Lane Configurations | | | |
| Traffic Volume (vph) | 249 | 184 | 223 |
| Future Volume (vph) | 249 | 184 | 223 |
| Lane Group Flow (vph) | 438 | 347 | 366 |
| Sign Control | Stop | Stop | Stop |
| Intersection Summary | | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization 78.9% | | ICU Level of Service D | |
| Analysis Period (min) 15 | | | |

HCM Unsignalized Intersection Capacity Analysis
 7: Clyde Ave & Laperriere Ave

12/06/2022



| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|-----------------------------------|-------|-------|-------|----------------------|------|------|
| Lane Configurations | | | | | | |
| Sign Control | Stop | | Stop | | | Stop |
| Traffic Volume (vph) | 249 | 189 | 184 | 163 | 143 | 223 |
| Future Volume (vph) | 249 | 189 | 184 | 163 | 143 | 223 |
| Peak Hour Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Hourly flow rate (vph) | 249 | 189 | 184 | 163 | 143 | 223 |
| Direction, Lane # | WB 1 | NB 1 | SB 1 | | | |
| Volume Total (vph) | 438 | 347 | 366 | | | |
| Volume Left (vph) | 249 | 0 | 143 | | | |
| Volume Right (vph) | 189 | 163 | 0 | | | |
| Hadj (s) | -0.09 | -0.17 | 0.16 | | | |
| Departure Headway (s) | 5.8 | 5.8 | 6.1 | | | |
| Degree Utilization, x | 0.71 | 0.56 | 0.62 | | | |
| Capacity (veh/h) | 584 | 584 | 566 | | | |
| Control Delay (s) | 21.7 | 15.9 | 18.4 | | | |
| Approach Delay (s) | 21.7 | 15.9 | 18.4 | | | |
| Approach LOS | C | C | C | | | |
| Intersection Summary | | | | | | |
| Delay | | | 18.9 | | | |
| Level of Service | | | C | | | |
| Intersection Capacity Utilization | | | 78.9% | ICU Level of Service | D | |
| Analysis Period (min) | | | 15 | | | |

Lanes, Volumes, Timings
 8: Clyde Ave & Woodward Dr

12/06/2022



| Lane Group | EBL | EBR | NBT | SBT | SBR |
|---|------|-----|------------------------|------|-----|
| Lane Configurations | | | | | |
| Traffic Volume (vph) | 295 | 17 | 52 | 18 | 456 |
| Future Volume (vph) | 295 | 17 | 52 | 18 | 456 |
| Lane Group Flow (vph) | 295 | 17 | 73 | 18 | 456 |
| Sign Control | Free | | Stop | Stop | |
| Intersection Summary | | | | | |
| Control Type: Unsignalized | | | | | |
| Intersection Capacity Utilization 40.6% | | | ICU Level of Service A | | |
| Analysis Period (min) 15 | | | | | |

HCM Unsignalized Intersection Capacity Analysis
 8: Clyde Ave & Woodward Dr

12/06/2022



| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|-----------------------------------|-------------|-------------|-------------|----------------------|------|------|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 295 | 17 | 21 | 52 | 18 | 456 |
| Future Volume (Veh/h) | 295 | 17 | 21 | 52 | 18 | 456 |
| Sign Control | Free | | | Stop | Stop | |
| Grade | 0% | | | 0% | 0% | |
| Peak Hour Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Hourly flow rate (vph) | 295 | 17 | 21 | 52 | 18 | 456 |
| Pedestrians | | | | | | |
| Lane Width (m) | | | | | | |
| Walking Speed (m/s) | | | | | | |
| Percent Blockage | | | | | | |
| Right turn flare (veh) | 3 | | | | | |
| Median type | None | | | | | |
| Median storage (veh) | | | | | | |
| Upstream signal (m) | | | | | | |
| pX, platoon unblocked | | | | | | |
| vC, conflicting volume | 0 | | 599 | 590 | 590 | 0 |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | 0 | | 599 | 590 | 590 | 0 |
| tC, single (s) | 4.1 | | 7.1 | 6.5 | 6.5 | 6.2 |
| tC, 2 stage (s) | | | | | | |
| tF (s) | 2.2 | | 3.5 | 4.0 | 4.0 | 3.3 |
| p0 queue free % | 82 | | 89 | 85 | 95 | 58 |
| cM capacity (veh/h) | 1623 | | 198 | 344 | 344 | 1085 |
| Direction, Lane # | EB 1 | EB 2 | NB 1 | SB 1 | | |
| Volume Total | 295 | 17 | 73 | 474 | | |
| Volume Left | 295 | 0 | 21 | 0 | | |
| Volume Right | 0 | 17 | 0 | 456 | | |
| cSH | 1623 | 1700 | 284 | 1128 | | |
| Volume to Capacity | 0.18 | 0.01 | 0.26 | 0.42 | | |
| Queue Length 95th (m) | 5.0 | 0.0 | 7.6 | 16.1 | | |
| Control Delay (s) | 7.7 | 0.0 | 22.0 | 10.9 | | |
| Lane LOS | A | | C | B | | |
| Approach Delay (s) | 7.3 | | 22.0 | 10.9 | | |
| Approach LOS | | | C | B | | |
| Intersection Summary | | | | | | |
| Average Delay | | | 10.5 | | | |
| Intersection Capacity Utilization | | | 40.6% | ICU Level of Service | A | |
| Analysis Period (min) | | | 15 | | | |

Lanes, Volumes, Timings
 9: Clyde Ave & Clyde Access

12/06/2022



| Lane Group | WBL | NBT | SBT |
|---|------|------------------------|------|
| Lane Configurations | | | |
| Traffic Volume (vph) | 20 | 368 | 401 |
| Future Volume (vph) | 20 | 368 | 401 |
| Lane Group Flow (vph) | 36 | 384 | 432 |
| Sign Control | Stop | Free | Free |
| Intersection Summary | | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization 37.3% | | ICU Level of Service A | |
| Analysis Period (min) 15 | | | |

HCM Unsignalized Intersection Capacity Analysis
 9: Clyde Ave & Clyde Access

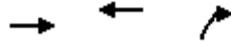
12/06/2022



| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|-----------------------------------|-------------|-------------|-------------|-------------|----------------------|------|
| Lane Configurations | W | | T | R | | T |
| Traffic Volume (veh/h) | 20 | 16 | 368 | 16 | 31 | 401 |
| Future Volume (Veh/h) | 20 | 16 | 368 | 16 | 31 | 401 |
| Sign Control | Stop | | Free | | | Free |
| Grade | 0% | | 0% | | | 0% |
| Peak Hour Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Hourly flow rate (vph) | 20 | 16 | 368 | 16 | 31 | 401 |
| Pedestrians | | | | | | |
| Lane Width (m) | | | | | | |
| Walking Speed (m/s) | | | | | | |
| Percent Blockage | | | | | | |
| Right turn flare (veh) | | | | | | |
| Median type | | | None | | | None |
| Median storage (veh) | | | | | | |
| Upstream signal (m) | | | 40 | | | 108 |
| pX, platoon unblocked | | | | | | |
| vC, conflicting volume | 638 | 192 | | | 384 | |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | 638 | 192 | | | 384 | |
| tC, single (s) | 6.8 | 6.9 | | | 4.1 | |
| tC, 2 stage (s) | | | | | | |
| tF (s) | 3.5 | 3.3 | | | 2.2 | |
| p0 queue free % | 95 | 98 | | | 97 | |
| cM capacity (veh/h) | 398 | 817 | | | 1171 | |
| Direction, Lane # | WB 1 | NB 1 | NB 2 | SB 1 | SB 2 | |
| Volume Total | 36 | 245 | 139 | 165 | 267 | |
| Volume Left | 20 | 0 | 0 | 31 | 0 | |
| Volume Right | 16 | 0 | 16 | 0 | 0 | |
| cSH | 515 | 1700 | 1700 | 1171 | 1700 | |
| Volume to Capacity | 0.07 | 0.14 | 0.08 | 0.03 | 0.16 | |
| Queue Length 95th (m) | 1.7 | 0.0 | 0.0 | 0.6 | 0.0 | |
| Control Delay (s) | 12.5 | 0.0 | 0.0 | 1.7 | 0.0 | |
| Lane LOS | B | | | A | | |
| Approach Delay (s) | 12.5 | 0.0 | | 0.7 | | |
| Approach LOS | B | | | | | |
| Intersection Summary | | | | | | |
| Average Delay | | | 0.9 | | | |
| Intersection Capacity Utilization | | | 37.3% | | ICU Level of Service | A |
| Analysis Period (min) | | | 15 | | | |

Lanes, Volumes, Timings
 10: Carling Access & Carling Ave

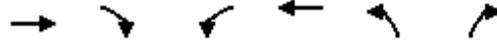
12/06/2022



| Lane Group | EBT | WBT | NBR |
|---|------|------------------------|-----|
| Lane Configurations | ↕↔ | ↕↕ | ↕↗ |
| Traffic Volume (vph) | 944 | 1936 | 20 |
| Future Volume (vph) | 944 | 1936 | 20 |
| Lane Group Flow (vph) | 977 | 1936 | 20 |
| Sign Control | Free | Free | |
| Intersection Summary | | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization 59.8% | | ICU Level of Service B | |
| Analysis Period (min) 15 | | | |

HCM Unsignalized Intersection Capacity Analysis
 10: Carling Access & Carling Ave

12/06/2022

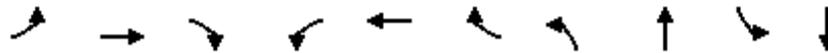


| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
|-----------------------------------|-------------|-------------|-------------|-------------|----------------------|------|
| Lane Configurations | ↕↕ | | | ↕↕ | | ↗ |
| Traffic Volume (veh/h) | 944 | 33 | 0 | 1936 | 0 | 20 |
| Future Volume (Veh/h) | 944 | 33 | 0 | 1936 | 0 | 20 |
| Sign Control | Free | | | Free | Stop | |
| Grade | 0% | | | 0% | 0% | |
| Peak Hour Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Hourly flow rate (vph) | 944 | 33 | 0 | 1936 | 0 | 20 |
| Pedestrians | | | | | | |
| Lane Width (m) | | | | | | |
| Walking Speed (m/s) | | | | | | |
| Percent Blockage | | | | | | |
| Right turn flare (veh) | | | | | | |
| Median type | None | | | None | | |
| Median storage (veh) | | | | | | |
| Upstream signal (m) | 112 | | | 186 | | |
| pX, platoon unblocked | | | 0.85 | | 0.68 | 0.85 |
| vC, conflicting volume | | | 977 | | 1928 | 488 |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | | | 622 | | 428 | 47 |
| tC, single (s) | | | 4.1 | | 6.8 | 6.9 |
| tC, 2 stage (s) | | | | | | |
| tF (s) | | | 2.2 | | 3.5 | 3.3 |
| p0 queue free % | | | 100 | | 100 | 98 |
| cM capacity (veh/h) | | | 812 | | 376 | 860 |
| Direction, Lane # | EB 1 | EB 2 | WB 1 | WB 2 | NB 1 | |
| Volume Total | 629 | 348 | 968 | 968 | 20 | |
| Volume Left | 0 | 0 | 0 | 0 | 0 | |
| Volume Right | 0 | 33 | 0 | 0 | 20 | |
| cSH | 1700 | 1700 | 1700 | 1700 | 860 | |
| Volume to Capacity | 0.37 | 0.20 | 0.57 | 0.57 | 0.02 | |
| Queue Length 95th (m) | 0.0 | 0.0 | 0.0 | 0.0 | 0.5 | |
| Control Delay (s) | 0.0 | 0.0 | 0.0 | 0.0 | 9.3 | |
| Lane LOS | | | | | A | |
| Approach Delay (s) | 0.0 | | 0.0 | | 9.3 | |
| Approach LOS | | | | | A | |
| Intersection Summary | | | | | | |
| Average Delay | | | 0.1 | | | |
| Intersection Capacity Utilization | | | 59.8% | | ICU Level of Service | B |
| Analysis Period (min) | | | 15 | | | |

Total Projected 2031 with Demand Rationalization

Lanes, Volumes, Timings
1: Churchill Ave & Carling Ave

12/06/2022



| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | SBL | SBT | Ø1 | Ø5 |
|------------------------|-------|--------|-------|-------|-------|-------|-------|-------|--------|-------|------|------|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 180 | 1269 | 104 | 135 | 613 | 154 | 29 | 17 | 347 | 35 | | |
| Future Volume (vph) | 180 | 1269 | 104 | 135 | 613 | 154 | 29 | 17 | 347 | 35 | | |
| Lane Group Flow (vph) | 180 | 1269 | 104 | 135 | 613 | 154 | 29 | 118 | 347 | 282 | | |
| Turn Type | Prot | NA | Perm | Prot | NA | Perm | Perm | NA | Perm | NA | | |
| Protected Phases | 7 | 4 | | 3 | 8 | | | 2 | | 6 | 1 | 5 |
| Permitted Phases | | | 4 | | | 8 | 2 | | 6 | | | |
| Detector Phase | 7 | 4 | 4 | 3 | 8 | 8 | 2 | 2 | 6 | 6 | | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 5.0 | 10.0 | 10.0 | 5.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 3.0 | 3.0 |
| Minimum Split (s) | 11.1 | 34.1 | 34.1 | 11.1 | 34.1 | 34.1 | 39.8 | 39.8 | 39.8 | 39.8 | 5.0 | 5.0 |
| Total Split (s) | 28.0 | 55.0 | 55.0 | 17.0 | 44.0 | 44.0 | 43.0 | 43.0 | 43.0 | 43.0 | 5.0 | 5.0 |
| Total Split (%) | 23.3% | 45.8% | 45.8% | 14.2% | 36.7% | 36.7% | 35.8% | 35.8% | 35.8% | 35.8% | 4% | 4% |
| Yellow Time (s) | 3.7 | 3.7 | 3.7 | 3.7 | 3.7 | 3.7 | 3.3 | 3.3 | 3.3 | 3.3 | 2.0 | 2.0 |
| All-Red Time (s) | 2.4 | 2.4 | 2.4 | 2.4 | 2.4 | 2.4 | 3.5 | 3.5 | 3.5 | 3.5 | 0.0 | 0.0 |
| 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) | 6.1 | 6.1 | 6.1 | 6.1 | 6.1 | 6.1 | 6.8 | 6.8 | 6.8 | 6.8 | | |
| Lead/Lag | Lead | Lag | Lag | Lead | Lag | Lag | Lag | Lag | Lag | Lag | Lead | Lead |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Recall Mode | None | C-Max | C-Max | None | C-Max | C-Max | Max | Max | Max | Max | None | None |
| Act Effct Green (s) | 17.4 | 48.9 | 48.9 | 10.9 | 42.4 | 42.4 | 41.2 | 41.2 | 41.2 | 41.2 | | |
| Actuated g/C Ratio | 0.14 | 0.41 | 0.41 | 0.09 | 0.35 | 0.35 | 0.34 | 0.34 | 0.34 | 0.34 | | |
| v/c Ratio | 0.73 | 0.92 | 0.16 | 0.88 | 0.52 | 0.27 | 0.10 | 0.20 | 0.85 | 0.43 | | |
| Control Delay | 69.6 | 45.8 | 12.3 | 99.1 | 31.3 | 5.9 | 28.2 | 8.1 | 57.8 | 7.5 | | |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | |
| Total Delay | 69.6 | 45.8 | 12.3 | 99.1 | 31.3 | 5.9 | 28.2 | 8.1 | 57.8 | 7.5 | | |
| LOS | E | D | B | F | C | A | C | A | E | A | | |
| Approach Delay | | 46.3 | | | 37.1 | | | 12.0 | | | 35.3 | |
| Approach LOS | | D | | | D | | | B | | | D | |
| Queue Length 50th (m) | 44.9 | 92.6 | 3.5 | 29.4 | 60.7 | 2.0 | 4.6 | 2.6 | 75.5 | 5.5 | | |
| Queue Length 95th (m) | m59.8 | #185.0 | m11.6 | #64.6 | 82.8 | 16.2 | 11.8 | 15.2 | #127.8 | 25.8 | | |
| Internal Link Dist (m) | | 162.3 | | | 176.6 | | | 177.0 | | 412.2 | | |
| Turn Bay Length (m) | 65.0 | | 30.0 | 65.0 | | 40.0 | 20.0 | | 20.0 | | | |
| Base Capacity (vph) | 309 | 1381 | 651 | 153 | 1174 | 580 | 286 | 585 | 406 | 660 | | |
| 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 | 0.58 | 0.92 | 0.16 | 0.88 | 0.52 | 0.27 | 0.10 | 0.20 | 0.85 | 0.43 | | |

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 92 (77%), Referenced to phase 4:EBT and 8:WBT, Start of Green
 Natural Cycle: 100
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.92
 Intersection Signal Delay: 40.0
 Intersection LOS: D
 Intersection Capacity Utilization 88.3%
 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: 1: Churchill Ave & Carling Ave



Lanes, Volumes, Timings
2: Clyde Ave/Cole Ave & Carling Ave

12/06/2022



| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT |
|------------------------|-------|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Lane Configurations | | | | | | | | | | | |
| Traffic Volume (vph) | 61 | 1313 | 127 | 234 | 632 | 52 | 142 | 51 | 155 | 35 | 63 |
| Future Volume (vph) | 61 | 1313 | 127 | 234 | 632 | 52 | 142 | 51 | 155 | 35 | 63 |
| Lane Group Flow (vph) | 61 | 1313 | 127 | 234 | 632 | 52 | 142 | 51 | 155 | 35 | 129 |
| Turn Type | Prot | NA | Perm | Prot | NA | Perm | Perm | NA | Perm | Perm | NA |
| Protected Phases | 7 | 4 | | 3 | 8 | | | 2 | | | 6 |
| Permitted Phases | | | 4 | | | 8 | 2 | | 2 | 6 | |
| Detector Phase | 7 | 4 | 4 | 3 | 8 | 8 | 2 | 2 | 2 | 6 | 6 |
| Switch Phase | | | | | | | | | | | |
| Minimum Initial (s) | 5.0 | 10.0 | 10.0 | 5.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 |
| Minimum Split (s) | 10.4 | 30.8 | 30.8 | 10.4 | 30.8 | 30.8 | 36.6 | 36.6 | 36.6 | 36.6 | 36.6 |
| Total Split (s) | 15.5 | 57.4 | 57.4 | 26.0 | 67.9 | 67.9 | 36.6 | 36.6 | 36.6 | 36.6 | 36.6 |
| Total Split (%) | 12.9% | 47.8% | 47.8% | 21.7% | 56.6% | 56.6% | 30.5% | 30.5% | 30.5% | 30.5% | 30.5% |
| Yellow Time (s) | 3.7 | 3.7 | 3.7 | 3.7 | 3.7 | 3.7 | 3.3 | 3.3 | 3.3 | 3.3 | 3.3 |
| All-Red Time (s) | 1.7 | 2.1 | 2.1 | 1.7 | 2.1 | 2.1 | 3.3 | 3.3 | 3.3 | 3.3 | 3.3 |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | 5.4 | 5.8 | 5.8 | 5.4 | 5.8 | 5.8 | 6.6 | 6.6 | 6.6 | 6.6 | 6.6 |
| Lead/Lag | Lead | Lag | Lag | Lead | Lag | Lag | | | | | |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | Yes | Yes | | | | | |
| Recall Mode | None | C-Max | C-Max | None | C-Max | C-Max | None | None | None | None | None |
| Act Effct Green (s) | 9.0 | 60.1 | 60.1 | 21.4 | 74.8 | 74.8 | 20.6 | 20.6 | 20.6 | 20.6 | 20.6 |
| Actuated g/C Ratio | 0.08 | 0.50 | 0.50 | 0.18 | 0.62 | 0.62 | 0.17 | 0.17 | 0.17 | 0.17 | 0.17 |
| v/c Ratio | 0.48 | 0.77 | 0.16 | 0.80 | 0.30 | 0.06 | 0.78 | 0.17 | 0.44 | 0.16 | 0.41 |
| Control Delay | 66.5 | 13.7 | 0.5 | 77.8 | 7.2 | 0.4 | 72.9 | 40.6 | 9.8 | 40.7 | 31.6 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 66.5 | 13.7 | 0.5 | 77.8 | 7.2 | 0.4 | 72.9 | 40.6 | 9.8 | 40.7 | 31.6 |
| LOS | E | B | A | E | A | A | E | D | A | D | C |
| Approach Delay | | 14.7 | | | 24.8 | | | 40.0 | | | 33.6 |
| Approach LOS | | B | | | C | | | D | | | C |
| Queue Length 50th (m) | 15.1 | 32.9 | 0.2 | 56.8 | 17.5 | 0.2 | 32.3 | 10.4 | 0.0 | 7.1 | 18.1 |
| Queue Length 95th (m) | m20.4 | #128.7 | m0.7 | #97.4 | 28.6 | m0.7 | 50.2 | 19.6 | 16.1 | 14.9 | 33.2 |
| Internal Link Dist (m) | | 369.5 | | | 87.5 | | | 83.7 | | | 136.4 |
| Turn Bay Length (m) | 20.0 | | 105.0 | 120.0 | | 30.0 | 95.0 | | 5.0 | 20.0 | |
| Base Capacity (vph) | 145 | 1698 | 809 | 303 | 2073 | 944 | 267 | 446 | 445 | 318 | 438 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 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 |
| Reduced v/c Ratio | 0.42 | 0.77 | 0.16 | 0.77 | 0.30 | 0.06 | 0.53 | 0.11 | 0.35 | 0.11 | 0.29 |

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 93 (78%), Referenced to phase 4:EBT and 8:WBT, Start of Green

Natural Cycle: 100

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.80

Intersection Signal Delay: 22.0

Intersection LOS: C

Intersection Capacity Utilization 94.9%

ICU Level of Service F

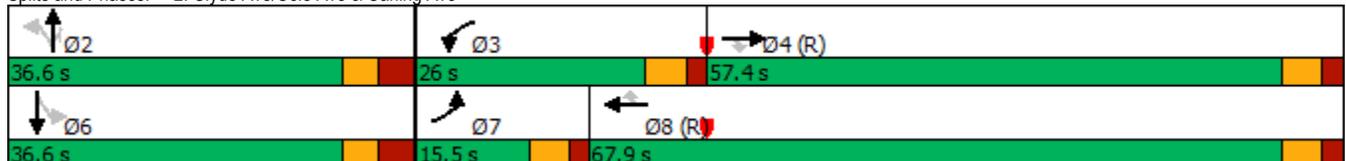
Analysis Period (min) 15

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: Clyde Ave/Cole Ave & Carling Ave



Lanes, Volumes, Timings
3: Broadview Ave & Carling Ave

12/06/2022



| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | SBL | SBT | Ø1 | Ø5 |
|------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|------|------|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 197 | 1327 | 104 | 99 | 632 | 124 | 112 | 24 | 160 | 20 | | |
| Future Volume (vph) | 197 | 1327 | 104 | 99 | 632 | 124 | 112 | 24 | 160 | 20 | | |
| Lane Group Flow (vph) | 197 | 1327 | 104 | 99 | 632 | 124 | 112 | 96 | 160 | 155 | | |
| Turn Type | pm+pt | NA | Perm | pm+pt | NA | Perm | Perm | NA | Perm | NA | | |
| Protected Phases | 7 | 4 | | 3 | 8 | | | 2 | | 6 | 1 | 5 |
| Permitted Phases | 4 | | 4 | 8 | | 8 | 2 | | 6 | | | |
| Detector Phase | 7 | 4 | 4 | 3 | 8 | 8 | 2 | 2 | 6 | 6 | | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 5.0 | 10.0 | 10.0 | 5.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 3.0 | 3.0 |
| Minimum Split (s) | 12.4 | 23.2 | 23.2 | 11.2 | 24.4 | 24.4 | 37.0 | 37.0 | 35.8 | 35.8 | 5.0 | 5.0 |
| Total Split (s) | 20.1 | 64.0 | 64.0 | 14.0 | 57.9 | 57.9 | 37.0 | 37.0 | 37.0 | 37.0 | 5.0 | 5.0 |
| Total Split (%) | 16.8% | 53.3% | 53.3% | 11.7% | 48.3% | 48.3% | 30.8% | 30.8% | 30.8% | 30.8% | 4% | 4% |
| Yellow Time (s) | 3.7 | 3.7 | 3.7 | 3.7 | 3.7 | 3.7 | 3.3 | 3.3 | 3.3 | 3.3 | 2.0 | 2.0 |
| All-Red Time (s) | 3.7 | 2.5 | 2.5 | 2.5 | 3.7 | 3.7 | 3.7 | 3.7 | 2.5 | 2.5 | 0.0 | 0.0 |
| 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) | 7.4 | 6.2 | 6.2 | 6.2 | 7.4 | 7.4 | 7.0 | 7.0 | 5.8 | 5.8 | | |
| Lead/Lag | Lead | Lag | Lag | Lead | Lag | Lag | Lag | Lag | Lag | Lag | Lead | Lead |
| Lead-Lag Optimize? | Yes | Yes | Yes |
| Recall Mode | None | C-Max | C-Max | None | C-Max | C-Max | Max | Max | Max | Max | Min | Min |
| Act Effct Green (s) | 68.2 | 58.2 | 58.2 | 60.6 | 51.9 | 51.9 | 30.0 | 30.0 | 31.2 | 31.2 | | |
| Actuated g/C Ratio | 0.57 | 0.48 | 0.48 | 0.50 | 0.43 | 0.43 | 0.25 | 0.25 | 0.26 | 0.26 | | |
| v/c Ratio | 0.47 | 0.81 | 0.16 | 0.55 | 0.45 | 0.20 | 0.46 | 0.22 | 0.52 | 0.34 | | |
| Control Delay | 15.4 | 31.1 | 3.3 | 32.5 | 37.2 | 16.1 | 45.3 | 13.7 | 45.0 | 10.3 | | |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | |
| Total Delay | 15.4 | 31.1 | 3.3 | 32.5 | 37.2 | 16.1 | 45.3 | 13.7 | 45.0 | 10.3 | | |
| LOS | B | C | A | C | D | B | D | B | D | B | | |
| Approach Delay | | 27.5 | | | 33.6 | | | 30.7 | | 27.9 | | |
| Approach LOS | | C | | | C | | | C | | C | | |
| Queue Length 50th (m) | 20.4 | 136.3 | 0.0 | 13.7 | 64.2 | 8.9 | 22.4 | 4.3 | 32.4 | 3.6 | | |
| Queue Length 95th (m) | 32.2 | 166.0 | 8.1 | 26.8 | 77.5 | 22.6 | 40.8 | 17.8 | 54.5 | 20.2 | | |
| Internal Link Dist (m) | | 239.1 | | | 369.5 | | | 434.9 | | 268.8 | | |
| Turn Bay Length (m) | 70.0 | | 30.0 | 50.0 | | 30.0 | 20.0 | | 45.0 | | | |
| Base Capacity (vph) | 442 | 1642 | 660 | 185 | 1411 | 616 | 244 | 432 | 309 | 458 | | |
| 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 | 0.45 | 0.81 | 0.16 | 0.54 | 0.45 | 0.20 | 0.46 | 0.22 | 0.52 | 0.34 | | |

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 77 (64%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.81

Intersection Signal Delay: 29.5

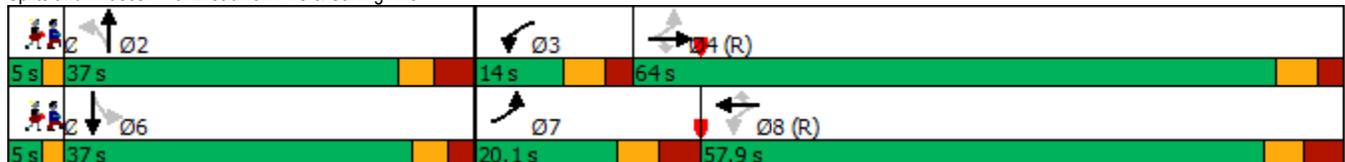
Intersection LOS: C

Intersection Capacity Utilization 99.9%

ICU Level of Service F

Analysis Period (min) 15

Splits and Phases: 3: Broadview Ave & Carling Ave



Lanes, Volumes, Timings
4: Clyde Ave & Doheny St

12/06/2022

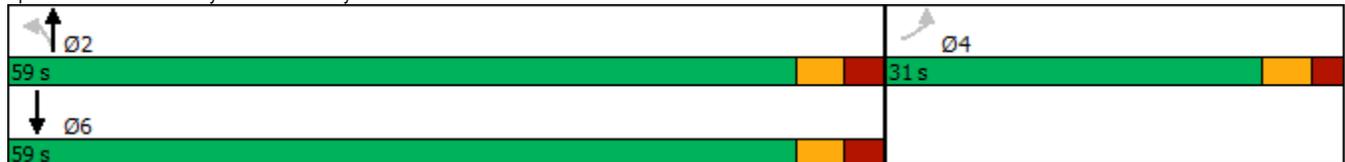


| Lane Group | EBL | NBL | NBT | SBT |
|------------------------|-------|-------|-------|-------|
| Lane Configurations | | | | |
| Traffic Volume (vph) | 34 | 91 | 298 | 345 |
| Future Volume (vph) | 34 | 91 | 298 | 345 |
| Lane Group Flow (vph) | 94 | 91 | 298 | 425 |
| Turn Type | Perm | Perm | NA | NA |
| Protected Phases | | | 2 | 6 |
| Permitted Phases | 4 | 2 | | |
| Detector Phase | 4 | 2 | 2 | 6 |
| Switch Phase | | | | |
| Minimum Initial (s) | 10.0 | 10.0 | 10.0 | 10.0 |
| Minimum Split (s) | 24.6 | 29.0 | 29.0 | 29.0 |
| Total Split (s) | 31.0 | 59.0 | 59.0 | 59.0 |
| Total Split (%) | 34.4% | 65.6% | 65.6% | 65.6% |
| Yellow Time (s) | 3.3 | 3.3 | 3.3 | 3.3 |
| All-Red Time (s) | 2.3 | 2.7 | 2.7 | 2.7 |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | 5.6 | 6.0 | 6.0 | 6.0 |
| Lead/Lag | | | | |
| Lead-Lag Optimize? | | | | |
| Recall Mode | None | Max | Max | Max |
| Act Effct Green (s) | 11.8 | 65.0 | 65.0 | 65.0 |
| Actuated g/C Ratio | 0.14 | 0.78 | 0.78 | 0.78 |
| v/c Ratio | 0.34 | 0.13 | 0.23 | 0.32 |
| Control Delay | 17.8 | 4.8 | 4.7 | 5.0 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 17.8 | 4.8 | 4.7 | 5.0 |
| LOS | B | A | A | A |
| Approach Delay | 17.8 | | 4.7 | 5.0 |
| Approach LOS | B | | A | A |
| Queue Length 50th (m) | 5.3 | 3.3 | 11.9 | 17.4 |
| Queue Length 95th (m) | 16.1 | 11.2 | 30.5 | 43.8 |
| Internal Link Dist (m) | 281.3 | | 265.7 | 16.3 |
| Turn Bay Length (m) | | 45.0 | | |
| Base Capacity (vph) | 521 | 706 | 1298 | 1309 |
| 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 | 0.18 | 0.13 | 0.23 | 0.32 |

Intersection Summary

Cycle Length: 90
 Actuated Cycle Length: 83.6
 Natural Cycle: 55
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.34
 Intersection Signal Delay: 6.2
 Intersection Capacity Utilization 56.6%
 Analysis Period (min) 15
 Intersection LOS: A
 ICU Level of Service B

Splits and Phases: 4: Clyde Ave & Doheny St



Lanes, Volumes, Timings
5: Saigon Ct & Carling Ave WB

12/06/2022



| Lane Group | WBL | WBT | WBR | NBL | NBT | SBT |
|------------------------|-------|-------|-------|-------|-------|-------|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 29 | 848 | 58 | 22 | 52 | 26 |
| Future Volume (vph) | 29 | 848 | 58 | 22 | 52 | 26 |
| Lane Group Flow (vph) | 29 | 848 | 58 | 0 | 74 | 35 |
| Turn Type | Perm | NA | Perm | Perm | NA | NA |
| Protected Phases | | 8 | | | 2 | 6 |
| Permitted Phases | 8 | | 8 | 2 | | |
| Detector Phase | 8 | 8 | 8 | 2 | 2 | 6 |
| Switch Phase | | | | | | |
| Minimum Initial (s) | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 |
| Minimum Split (s) | 29.7 | 29.7 | 29.7 | 26.7 | 26.7 | 26.7 |
| Total Split (s) | 83.0 | 83.0 | 83.0 | 37.0 | 37.0 | 37.0 |
| Total Split (%) | 69.2% | 69.2% | 69.2% | 30.8% | 30.8% | 30.8% |
| Yellow Time (s) | 3.7 | 3.7 | 3.7 | 3.3 | 3.3 | 3.3 |
| All-Red Time (s) | 2.0 | 2.0 | 2.0 | 2.4 | 2.4 | 2.4 |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 |
| Total Lost Time (s) | 5.7 | 5.7 | 5.7 | | 5.7 | 5.7 |
| Lead/Lag | | | | | | |
| Lead-Lag Optimize? | | | | | | |
| Recall Mode | C-Max | C-Max | C-Max | None | None | None |
| Act Effct Green (s) | 101.2 | 101.2 | 101.2 | | 11.7 | 11.7 |
| Actuated g/C Ratio | 0.84 | 0.84 | 0.84 | | 0.10 | 0.10 |
| v/c Ratio | 0.02 | 0.31 | 0.05 | | 0.48 | 0.20 |
| Control Delay | 2.6 | 3.1 | 0.8 | | 43.7 | 41.7 |
| Queue Delay | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 |
| Total Delay | 2.6 | 3.1 | 0.8 | | 43.7 | 41.7 |
| LOS | A | A | A | | D | D |
| Approach Delay | | 2.9 | | | 43.7 | 41.7 |
| Approach LOS | | A | | | D | D |
| Queue Length 50th (m) | 1.0 | 20.4 | 0.0 | | 16.0 | 5.8 |
| Queue Length 95th (m) | 3.2 | 32.6 | 2.5 | | m26.5 | 15.2 |
| Internal Link Dist (m) | | 298.8 | | | 45.3 | 50.2 |
| Turn Bay Length (m) | 50.0 | | 40.0 | | | |
| Base Capacity (vph) | 1429 | 2777 | 1238 | | 412 | 455 |
| Starvation Cap Reductn | 0 | 0 | 0 | | 14 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | | 0 | 0 |
| Reduced v/c Ratio | 0.02 | 0.31 | 0.05 | | 0.19 | 0.08 |

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 62 (52%), Referenced to phase 8:WBTL, Start of Green
 Natural Cycle: 60
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.48
 Intersection Signal Delay: 7.1
 Intersection Capacity Utilization 45.1%
 Analysis Period (min) 15
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 5: Saigon Ct & Carling Ave WB



Lanes, Volumes, Timings
6: Carling Ave EB & Saigon Ct

12/06/2022

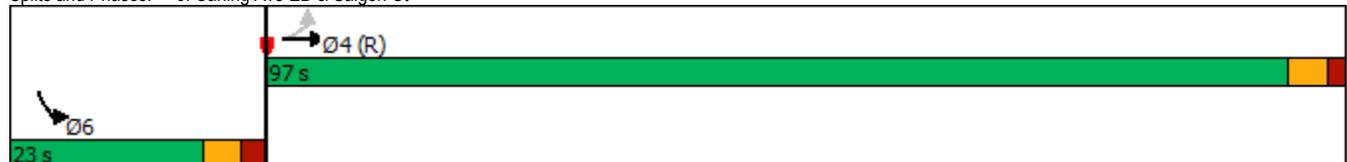


| Lane Group | EBT | SBL |
|------------------------|-------|-------|
| Lane Configurations | | |
| Traffic Volume (vph) | 1609 | 42 |
| Future Volume (vph) | 1609 | 42 |
| Lane Group Flow (vph) | 1714 | 42 |
| Turn Type | NA | Prot |
| Protected Phases | 4 | 6 |
| Permitted Phases | | |
| Detector Phase | 4 | 6 |
| Switch Phase | | |
| Minimum Initial (s) | 10.0 | 5.0 |
| Minimum Split (s) | 15.4 | 22.6 |
| Total Split (s) | 97.0 | 23.0 |
| Total Split (%) | 80.8% | 19.2% |
| Yellow Time (s) | 3.7 | 3.3 |
| All-Red Time (s) | 1.7 | 2.3 |
| Lost Time Adjust (s) | 0.0 | 0.0 |
| Total Lost Time (s) | 5.4 | 5.6 |
| Lead/Lag | | |
| Lead-Lag Optimize? | | |
| Recall Mode | C-Max | None |
| Act Effct Green (s) | 105.3 | 7.0 |
| Actuated g/C Ratio | 0.88 | 0.06 |
| v/c Ratio | 0.58 | 0.22 |
| Control Delay | 1.0 | 54.1 |
| Queue Delay | 0.0 | 0.0 |
| Total Delay | 1.0 | 54.1 |
| LOS | A | D |
| Approach Delay | 1.0 | 54.1 |
| Approach LOS | A | D |
| Queue Length 50th (m) | 2.1 | 5.2 |
| Queue Length 95th (m) | m2.5 | 11.1 |
| Internal Link Dist (m) | 110.2 | 45.3 |
| Turn Bay Length (m) | | |
| Base Capacity (vph) | 2966 | 476 |
| Starvation Cap Reductn | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 |
| Storage Cap Reductn | 0 | 0 |
| Reduced v/c Ratio | 0.58 | 0.09 |

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 105 (88%), Referenced to phase 4:EBTL, Start of Green
 Natural Cycle: 65
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.58
 Intersection Signal Delay: 2.3
 Intersection Capacity Utilization 63.5%
 Analysis Period (min) 15
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 6: Carling Ave EB & Saigon Ct



Lanes, Volumes, Timings
 7: Clyde Ave & Laperriere Ave

12/06/2022



| Lane Group | WBL | NBT | SBT |
|---|------|------------------------|------|
| Lane Configurations | | | |
| Traffic Volume (vph) | 128 | 212 | 219 |
| Future Volume (vph) | 128 | 212 | 219 |
| Lane Group Flow (vph) | 363 | 384 | 408 |
| Sign Control | Stop | Stop | Stop |
| Intersection Summary | | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization 79.3% | | ICU Level of Service D | |
| Analysis Period (min) 15 | | | |

HCM Unsignalized Intersection Capacity Analysis
 7: Clyde Ave & Laperriere Ave

12/06/2022



| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|-----------------------------------|-------|-------|-------|----------------------|------|------|
| Lane Configurations | | | | | | |
| Sign Control | Stop | | Stop | | | Stop |
| Traffic Volume (vph) | 128 | 235 | 212 | 172 | 189 | 219 |
| Future Volume (vph) | 128 | 235 | 212 | 172 | 189 | 219 |
| Peak Hour Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Hourly flow rate (vph) | 128 | 235 | 212 | 172 | 189 | 219 |
| Direction, Lane # | WB 1 | NB 1 | SB 1 | | | |
| Volume Total (vph) | 363 | 384 | 408 | | | |
| Volume Left (vph) | 128 | 0 | 189 | | | |
| Volume Right (vph) | 235 | 172 | 0 | | | |
| Hadj (s) | -0.27 | -0.11 | 0.19 | | | |
| Departure Headway (s) | 5.8 | 5.6 | 5.9 | | | |
| Degree Utilization, x | 0.58 | 0.60 | 0.67 | | | |
| Capacity (veh/h) | 576 | 606 | 582 | | | |
| Control Delay (s) | 16.6 | 16.8 | 19.8 | | | |
| Approach Delay (s) | 16.6 | 16.8 | 19.8 | | | |
| Approach LOS | C | C | C | | | |
| Intersection Summary | | | | | | |
| Delay | | | 17.8 | | | |
| Level of Service | | | C | | | |
| Intersection Capacity Utilization | | | 79.3% | ICU Level of Service | D | |
| Analysis Period (min) | | | 15 | | | |

Lanes, Volumes, Timings
 8: Clyde Ave & Woodward Dr

12/06/2022



| Lane Group | EBL | EBR | NBT | SBT | SBR |
|---|------|-----|------------------------|------|-----|
| Lane Configurations | | | | | |
| Traffic Volume (vph) | 346 | 8 | 38 | 47 | 300 |
| Future Volume (vph) | 346 | 8 | 38 | 47 | 300 |
| Lane Group Flow (vph) | 346 | 8 | 50 | 47 | 300 |
| Sign Control | Free | | Stop | Stop | |
| Intersection Summary | | | | | |
| Control Type: Unsignalized | | | | | |
| Intersection Capacity Utilization 36.4% | | | ICU Level of Service A | | |
| Analysis Period (min) 15 | | | | | |

HCM Unsignalized Intersection Capacity Analysis
8: Clyde Ave & Woodward Dr

12/06/2022



| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|-----------------------------------|-------------|-------------|-------------|----------------------|------|------|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 346 | 8 | 12 | 38 | 47 | 300 |
| Future Volume (Veh/h) | 346 | 8 | 12 | 38 | 47 | 300 |
| Sign Control | Free | | | Stop | Stop | |
| Grade | 0% | | | 0% | 0% | |
| Peak Hour Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Hourly flow rate (vph) | 346 | 8 | 12 | 38 | 47 | 300 |
| Pedestrians | | | | | | |
| Lane Width (m) | | | | | | |
| Walking Speed (m/s) | | | | | | |
| Percent Blockage | | | | | | |
| Right turn flare (veh) | 3 | | | | | |
| Median type | None | | | | | |
| Median storage (veh) | | | | | | |
| Upstream signal (m) | | | | | | |
| pX, platoon unblocked | | | | | | |
| vC, conflicting volume | 0 | | 716 | 692 | 692 | 0 |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | 0 | | 716 | 692 | 692 | 0 |
| tC, single (s) | 4.1 | | 7.1 | 6.5 | 6.5 | 6.2 |
| tC, 2 stage (s) | | | | | | |
| tF (s) | 2.2 | | 3.5 | 4.0 | 4.0 | 3.3 |
| p0 queue free % | 79 | | 93 | 87 | 84 | 72 |
| cM capacity (veh/h) | 1623 | | 184 | 289 | 289 | 1085 |
| Direction, Lane # | EB 1 | EB 2 | NB 1 | SB 1 | | |
| Volume Total | 346 | 8 | 50 | 347 | | |
| Volume Left | 346 | 0 | 12 | 0 | | |
| Volume Right | 0 | 8 | 0 | 300 | | |
| cSH | 1623 | 1700 | 254 | 1255 | | |
| Volume to Capacity | 0.21 | 0.00 | 0.20 | 0.28 | | |
| Queue Length 95th (m) | 6.1 | 0.0 | 5.4 | 8.6 | | |
| Control Delay (s) | 7.8 | 0.0 | 22.6 | 11.0 | | |
| Lane LOS | A | | C | B | | |
| Approach Delay (s) | 7.6 | | 22.6 | 11.0 | | |
| Approach LOS | | | C | B | | |
| Intersection Summary | | | | | | |
| Average Delay | | | 10.2 | | | |
| Intersection Capacity Utilization | | | 36.4% | ICU Level of Service | A | |
| Analysis Period (min) | | | 15 | | | |

Lanes, Volumes, Timings
 9: Clyde Ave & Clyde Access

12/06/2022



| Lane Group | WBL | NBT | SBT |
|---|------|------------------------|------|
| Lane Configurations | | | |
| Traffic Volume (vph) | 40 | 319 | 387 |
| Future Volume (vph) | 40 | 319 | 387 |
| Lane Group Flow (vph) | 80 | 329 | 410 |
| Sign Control | Stop | Free | Free |
| Intersection Summary | | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization 36.6% | | ICU Level of Service A | |
| Analysis Period (min) 15 | | | |

HCM Unsignalized Intersection Capacity Analysis
 9: Clyde Ave & Clyde Access

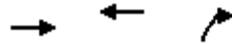
12/06/2022



| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|-----------------------------------|-------------|-------------|-------------|-------------|----------------------|------|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 40 | 40 | 319 | 10 | 23 | 387 |
| Future Volume (Veh/h) | 40 | 40 | 319 | 10 | 23 | 387 |
| Sign Control | Stop | | Free | | | Free |
| Grade | 0% | | 0% | | | 0% |
| Peak Hour Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Hourly flow rate (vph) | 40 | 40 | 319 | 10 | 23 | 387 |
| Pedestrians | | | | | | |
| Lane Width (m) | | | | | | |
| Walking Speed (m/s) | | | | | | |
| Percent Blockage | | | | | | |
| Right turn flare (veh) | | | | | | |
| Median type | | | None | | | None |
| Median storage (veh) | | | | | | |
| Upstream signal (m) | | | 40 | | | 108 |
| pX, platoon unblocked | | | | | | |
| vC, conflicting volume | 564 | 164 | | | 329 | |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | 564 | 164 | | | 329 | |
| tC, single (s) | 6.8 | 6.9 | | | 4.1 | |
| tC, 2 stage (s) | | | | | | |
| tF (s) | 3.5 | 3.3 | | | 2.2 | |
| p0 queue free % | 91 | 95 | | | 98 | |
| cM capacity (veh/h) | 447 | 851 | | | 1227 | |
| Direction, Lane # | WB 1 | NB 1 | NB 2 | SB 1 | SB 2 | |
| Volume Total | 80 | 213 | 116 | 152 | 258 | |
| Volume Left | 40 | 0 | 0 | 23 | 0 | |
| Volume Right | 40 | 0 | 10 | 0 | 0 | |
| cSH | 587 | 1700 | 1700 | 1227 | 1700 | |
| Volume to Capacity | 0.14 | 0.13 | 0.07 | 0.02 | 0.15 | |
| Queue Length 95th (m) | 3.6 | 0.0 | 0.0 | 0.4 | 0.0 | |
| Control Delay (s) | 12.1 | 0.0 | 0.0 | 1.3 | 0.0 | |
| Lane LOS | B | | | A | | |
| Approach Delay (s) | 12.1 | 0.0 | | 0.5 | | |
| Approach LOS | B | | | | | |
| Intersection Summary | | | | | | |
| Average Delay | | | 1.4 | | | |
| Intersection Capacity Utilization | | | 36.6% | | ICU Level of Service | A |
| Analysis Period (min) | | | 15 | | | |

Lanes, Volumes, Timings
 10: Carling Access & Carling Ave

12/06/2022



| Lane Group | EBT | WBT | NBR |
|---|------|------------------------|-----|
| Lane Configurations | ↕↕ | ↕↕ | ↗ |
| Traffic Volume (vph) | 1415 | 791 | 34 |
| Future Volume (vph) | 1415 | 791 | 34 |
| Lane Group Flow (vph) | 1433 | 791 | 34 |
| Sign Control | Free | Free | |
| Intersection Summary | | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization 51.9% | | ICU Level of Service A | |
| Analysis Period (min) 15 | | | |

HCM Unsignalized Intersection Capacity Analysis
 10: Carling Access & Carling Ave

12/06/2022



| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
|-----------------------------------|-------------|-------------|-------------|-------------|----------------------|------|
| Lane Configurations | ↕↕ | | | ↕↕ | | ↗ |
| Traffic Volume (veh/h) | 1415 | 18 | 0 | 791 | 0 | 34 |
| Future Volume (Veh/h) | 1415 | 18 | 0 | 791 | 0 | 34 |
| Sign Control | Free | | | Free | Stop | |
| Grade | 0% | | | 0% | 0% | |
| Peak Hour Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Hourly flow rate (vph) | 1415 | 18 | 0 | 791 | 0 | 34 |
| Pedestrians | | | | | | |
| Lane Width (m) | | | | | | |
| Walking Speed (m/s) | | | | | | |
| Percent Blockage | | | | | | |
| Right turn flare (veh) | | | | | | |
| Median type | None | | | None | | |
| Median storage (veh) | | | | | | |
| Upstream signal (m) | 112 | | | 186 | | |
| pX, platoon unblocked | | | 0.68 | | 0.75 | 0.68 |
| vC, conflicting volume | | | 1433 | | 1820 | 716 |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | | | 712 | | 652 | 0 |
| tC, single (s) | | | 4.1 | | 6.8 | 6.9 |
| tC, 2 stage (s) | | | | | | |
| tF (s) | | | 2.2 | | 3.5 | 3.3 |
| p0 queue free % | | | 100 | | 100 | 95 |
| cM capacity (veh/h) | | | 605 | | 300 | 743 |
| Direction, Lane # | EB 1 | EB 2 | WB 1 | WB 2 | NB 1 | |
| Volume Total | 943 | 490 | 396 | 396 | 34 | |
| Volume Left | 0 | 0 | 0 | 0 | 0 | |
| Volume Right | 0 | 18 | 0 | 0 | 34 | |
| cSH | 1700 | 1700 | 1700 | 1700 | 743 | |
| Volume to Capacity | 0.55 | 0.29 | 0.23 | 0.23 | 0.05 | |
| Queue Length 95th (m) | 0.0 | 0.0 | 0.0 | 0.0 | 1.1 | |
| Control Delay (s) | 0.0 | 0.0 | 0.0 | 0.0 | 10.1 | |
| Lane LOS | | | | | B | |
| Approach Delay (s) | 0.0 | | 0.0 | | 10.1 | |
| Approach LOS | | | | | B | |
| Intersection Summary | | | | | | |
| Average Delay | | | 0.2 | | | |
| Intersection Capacity Utilization | | | 51.9% | | ICU Level of Service | A |
| Analysis Period (min) | | | 15 | | | |

Lanes, Volumes, Timings
1: Churchill Ave & Carling Ave

12/06/2022



| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | SBL | SBT | Ø1 | Ø5 |
|------------------------|--------|-------|-------|-------|--------|-------|-------|-------|-------|-------|------|------|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 253 | 767 | 33 | 114 | 1475 | 218 | 105 | 40 | 187 | 18 | | |
| Future Volume (vph) | 253 | 767 | 33 | 114 | 1475 | 218 | 105 | 40 | 187 | 18 | | |
| Lane Group Flow (vph) | 253 | 767 | 33 | 114 | 1475 | 218 | 105 | 113 | 187 | 305 | | |
| Turn Type | Prot | NA | Perm | Prot | NA | Perm | Perm | NA | Perm | NA | | |
| Protected Phases | 7 | 4 | | 3 | 8 | | | 2 | | 6 | 1 | 5 |
| Permitted Phases | | | 4 | | | 8 | 2 | | 6 | | | |
| Detector Phase | 7 | 4 | 4 | 3 | 8 | 8 | 2 | 2 | 6 | 6 | | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 5.0 | 10.0 | 10.0 | 5.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 3.0 | 3.0 |
| Minimum Split (s) | 11.1 | 34.1 | 34.1 | 11.1 | 34.1 | 34.1 | 39.8 | 39.8 | 39.8 | 39.8 | 5.0 | 5.0 |
| Total Split (s) | 22.0 | 53.2 | 53.2 | 22.0 | 53.2 | 53.2 | 39.8 | 39.8 | 39.8 | 39.8 | 5.0 | 5.0 |
| Total Split (%) | 18.3% | 44.3% | 44.3% | 18.3% | 44.3% | 44.3% | 33.2% | 33.2% | 33.2% | 33.2% | 4% | 4% |
| Yellow Time (s) | 3.7 | 3.7 | 3.7 | 3.7 | 3.7 | 3.7 | 3.3 | 3.3 | 3.3 | 3.3 | 2.0 | 2.0 |
| All-Red Time (s) | 2.4 | 2.4 | 2.4 | 2.4 | 2.4 | 2.4 | 3.5 | 3.5 | 3.5 | 3.5 | 0.0 | 0.0 |
| 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) | 6.1 | 6.1 | 6.1 | 6.1 | 6.1 | 6.1 | 6.8 | 6.8 | 6.8 | 6.8 | | |
| Lead/Lag | Lead | Lag | Lag | Lead | Lag | Lag | Lag | Lag | Lag | Lag | Lead | Lead |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Recall Mode | None | C-Max | C-Max | None | C-Max | C-Max | Max | Max | Max | Max | None | None |
| Act Effct Green (s) | 15.9 | 50.2 | 50.2 | 12.8 | 47.1 | 47.1 | 38.0 | 38.0 | 38.0 | 38.0 | | |
| Actuated g/C Ratio | 0.13 | 0.42 | 0.42 | 0.11 | 0.39 | 0.39 | 0.32 | 0.32 | 0.32 | 0.32 | | |
| v/c Ratio | 1.13 | 0.54 | 0.05 | 0.63 | 1.11 | 0.35 | 0.44 | 0.20 | 0.49 | 0.46 | | |
| Control Delay | 152.7 | 20.3 | 0.4 | 74.1 | 89.8 | 9.4 | 39.9 | 13.2 | 38.4 | 6.9 | | |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | |
| Total Delay | 152.7 | 20.3 | 0.4 | 74.1 | 89.8 | 9.4 | 39.9 | 13.2 | 38.4 | 6.9 | | |
| LOS | F | C | A | E | F | A | D | B | D | A | | |
| Approach Delay | | 51.5 | | | 79.1 | | | 26.1 | | 18.9 | | |
| Approach LOS | | D | | | E | | | C | | B | | |
| Queue Length 50th (m) | ~70.7 | 33.9 | 0.0 | 23.5 | ~209.6 | 15.4 | 19.6 | 6.6 | 35.5 | 2.9 | | |
| Queue Length 95th (m) | #122.7 | 52.9 | m0.4 | m43.6 | #252.6 | 17.1 | 37.3 | 19.9 | 58.2 | 23.8 | | |
| Internal Link Dist (m) | | 162.3 | | | 176.6 | | | 177.0 | | 412.2 | | |
| Turn Bay Length (m) | 65.0 | | 30.0 | 65.0 | | 40.0 | 20.0 | | 20.0 | | | |
| Base Capacity (vph) | 224 | 1418 | 660 | 224 | 1330 | 631 | 236 | 552 | 382 | 664 | | |
| 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 | 1.13 | 0.54 | 0.05 | 0.51 | 1.11 | 0.35 | 0.44 | 0.20 | 0.49 | 0.46 | | |

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 92 (77%), Referenced to phase 4:EBT and 8:WBT, Start of Green
 Natural Cycle: 140
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.13
 Intersection Signal Delay: 59.4
 Intersection LOS: E
 Intersection Capacity Utilization 117.8%
 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.
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: Churchill Ave & Carling Ave



Lanes, Volumes, Timings
2: Clyde Ave/Cole Ave & Carling Ave

12/06/2022



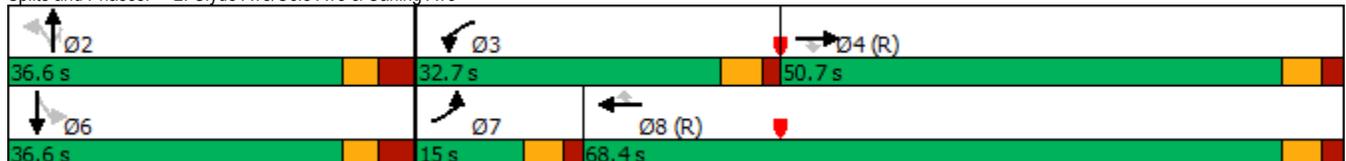
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT |
|------------------------|-------|-------|-------|-------|--------|-------|-------|-------|-------|-------|-------|
| Lane Configurations | | | | | | | | | | | |
| Traffic Volume (vph) | 77 | 784 | 129 | 238 | 1509 | 58 | 117 | 87 | 151 | 22 | 54 |
| Future Volume (vph) | 77 | 784 | 129 | 238 | 1509 | 58 | 117 | 87 | 151 | 22 | 54 |
| Lane Group Flow (vph) | 77 | 784 | 129 | 238 | 1509 | 58 | 117 | 87 | 151 | 22 | 116 |
| Turn Type | Prot | NA | Perm | Prot | NA | Perm | Perm | NA | Perm | Perm | NA |
| Protected Phases | 7 | 4 | | 3 | 8 | | | 2 | | | 6 |
| Permitted Phases | | | 4 | | | 8 | 2 | | 2 | 6 | |
| Detector Phase | 7 | 4 | 4 | 3 | 8 | 8 | 2 | 2 | 2 | 6 | 6 |
| Switch Phase | | | | | | | | | | | |
| Minimum Initial (s) | 5.0 | 10.0 | 10.0 | 5.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 |
| Minimum Split (s) | 10.4 | 30.8 | 30.8 | 10.4 | 30.8 | 30.8 | 36.6 | 36.6 | 36.6 | 36.6 | 36.6 |
| Total Split (s) | 15.0 | 50.7 | 50.7 | 32.7 | 68.4 | 68.4 | 36.6 | 36.6 | 36.6 | 36.6 | 36.6 |
| Total Split (%) | 12.5% | 42.3% | 42.3% | 27.3% | 57.0% | 57.0% | 30.5% | 30.5% | 30.5% | 30.5% | 30.5% |
| Yellow Time (s) | 3.7 | 3.7 | 3.7 | 3.7 | 3.7 | 3.7 | 3.3 | 3.3 | 3.3 | 3.3 | 3.3 |
| All-Red Time (s) | 1.7 | 2.1 | 2.1 | 1.7 | 2.1 | 2.1 | 3.3 | 3.3 | 3.3 | 3.3 | 3.3 |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | 5.4 | 5.8 | 5.8 | 5.4 | 5.8 | 5.8 | 6.6 | 6.6 | 6.6 | 6.6 | 6.6 |
| Lead/Lag | Lead | Lag | Lag | Lead | Lag | Lag | | | | | |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | Yes | Yes | | | | | |
| Recall Mode | None | C-Max | C-Max | None | C-Max | C-Max | None | None | None | None | None |
| Act Effct Green (s) | 9.1 | 60.5 | 60.5 | 21.6 | 75.3 | 75.3 | 20.2 | 20.2 | 20.2 | 20.2 | 20.2 |
| Actuated g/C Ratio | 0.08 | 0.50 | 0.50 | 0.18 | 0.63 | 0.63 | 0.17 | 0.17 | 0.17 | 0.17 | 0.17 |
| v/c Ratio | 0.60 | 0.46 | 0.16 | 0.78 | 0.71 | 0.06 | 0.59 | 0.29 | 0.43 | 0.11 | 0.37 |
| Control Delay | 71.8 | 12.4 | 0.9 | 50.6 | 23.5 | 6.1 | 56.0 | 43.3 | 13.9 | 38.9 | 27.9 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 71.8 | 12.4 | 0.9 | 50.6 | 23.5 | 6.1 | 56.0 | 43.3 | 13.9 | 38.9 | 27.9 |
| LOS | E | B | A | D | C | A | E | D | B | D | C |
| Approach Delay | | 15.5 | | | 26.5 | | | 35.0 | | | 29.6 |
| Approach LOS | | B | | | C | | | C | | | C |
| Queue Length 50th (m) | 18.1 | 26.6 | 0.0 | 58.9 | 103.6 | 1.4 | 26.6 | 18.7 | 5.7 | 4.6 | 15.0 |
| Queue Length 95th (m) | #37.0 | 32.8 | 2.1 | m60.4 | m104.4 | m2.0 | 40.9 | 29.9 | 21.8 | 10.8 | 28.7 |
| Internal Link Dist (m) | | 369.5 | | | 87.5 | | | 83.7 | | | 136.4 |
| Turn Bay Length (m) | 20.0 | | 105.0 | 120.0 | | 30.0 | 95.0 | | 5.0 | 20.0 | |
| Base Capacity (vph) | 138 | 1708 | 806 | 385 | 2127 | 921 | 297 | 446 | 459 | 307 | 440 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 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 |
| Reduced v/c Ratio | 0.56 | 0.46 | 0.16 | 0.62 | 0.71 | 0.06 | 0.39 | 0.20 | 0.33 | 0.07 | 0.26 |

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 93 (78%), Referenced to phase 4:EBT and 8:WBT, Start of Green
 Natural Cycle: 90
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.78
 Intersection Signal Delay: 24.3
 Intersection Capacity Utilization 81.6%
 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.

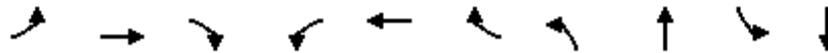
Intersection LOS: C
 ICU Level of Service D

Splits and Phases: 2: Clyde Ave/Cole Ave & Carling Ave



Lanes, Volumes, Timings
3: Broadview Ave & Carling Ave

12/06/2022

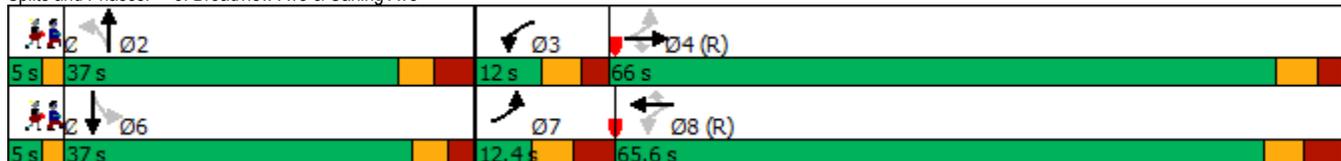


| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | SBL | SBT | Ø1 | Ø5 |
|------------------------|-------|-------|-------|-------|--------|-------|-------|-------|-------|-------|------|------|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 94 | 893 | 31 | 67 | 1558 | 66 | 181 | 35 | 68 | 23 | | |
| Future Volume (vph) | 94 | 893 | 31 | 67 | 1558 | 66 | 181 | 35 | 68 | 23 | | |
| Lane Group Flow (vph) | 94 | 893 | 31 | 67 | 1558 | 66 | 181 | 68 | 68 | 173 | | |
| Turn Type | pm+pt | NA | Perm | pm+pt | NA | Perm | Perm | NA | Perm | NA | | |
| Protected Phases | 7 | 4 | | 3 | 8 | | | 2 | | 6 | 1 | 5 |
| Permitted Phases | 4 | | 4 | 8 | | 8 | 2 | | 6 | | | |
| Detector Phase | 7 | 4 | 4 | 3 | 8 | 8 | 2 | 2 | 6 | 6 | | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 5.0 | 10.0 | 10.0 | 5.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 3.0 | 3.0 |
| Minimum Split (s) | 12.4 | 23.2 | 23.2 | 11.2 | 24.4 | 24.4 | 37.0 | 37.0 | 35.8 | 35.8 | 5.0 | 5.0 |
| Total Split (s) | 12.4 | 66.0 | 66.0 | 12.0 | 65.6 | 65.6 | 37.0 | 37.0 | 37.0 | 37.0 | 5.0 | 5.0 |
| Total Split (%) | 10.3% | 55.0% | 55.0% | 10.0% | 54.7% | 54.7% | 30.8% | 30.8% | 30.8% | 30.8% | 4% | 4% |
| Yellow Time (s) | 3.7 | 3.7 | 3.7 | 3.7 | 3.7 | 3.7 | 3.3 | 3.3 | 3.3 | 3.3 | 2.0 | 2.0 |
| All-Red Time (s) | 3.7 | 2.5 | 2.5 | 2.5 | 3.7 | 3.7 | 3.7 | 3.7 | 2.5 | 2.5 | 0.0 | 0.0 |
| 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) | 7.4 | 6.2 | 6.2 | 6.2 | 7.4 | 7.4 | 7.0 | 7.0 | 5.8 | 5.8 | | |
| Lead/Lag | Lead | Lag | Lag | Lead | Lag | Lag | Lag | Lag | Lag | Lag | Lead | Lead |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Recall Mode | None | C-Max | C-Max | None | C-Max | C-Max | Max | Max | Max | Max | Min | Min |
| Act Effct Green (s) | 65.0 | 62.2 | 62.2 | 65.2 | 58.2 | 58.2 | 30.0 | 30.0 | 31.2 | 31.2 | | |
| Actuated g/C Ratio | 0.54 | 0.52 | 0.52 | 0.54 | 0.48 | 0.48 | 0.25 | 0.25 | 0.26 | 0.26 | | |
| v/c Ratio | 0.73 | 0.51 | 0.04 | 0.22 | 0.95 | 0.09 | 0.74 | 0.16 | 0.21 | 0.35 | | |
| Control Delay | 49.2 | 20.8 | 0.1 | 16.9 | 46.2 | 3.4 | 60.4 | 21.3 | 36.9 | 10.0 | | |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | |
| Total Delay | 49.2 | 20.8 | 0.1 | 16.9 | 46.2 | 3.4 | 60.4 | 21.3 | 36.9 | 10.0 | | |
| LOS | D | C | A | B | D | A | E | C | D | B | | |
| Approach Delay | | 22.8 | | | 43.3 | | | 49.8 | | 17.6 | | |
| Approach LOS | | C | | | D | | | D | | B | | |
| Queue Length 50th (m) | 9.2 | 73.1 | 0.0 | 8.4 | 205.1 | 0.6 | 39.3 | 6.3 | 12.6 | 4.1 | | |
| Queue Length 95th (m) | #34.1 | 91.0 | 0.0 | m10.9 | #227.2 | m2.5 | #72.9 | 17.9 | 24.9 | 21.7 | | |
| Internal Link Dist (m) | | 239.1 | | | 369.5 | | | 434.9 | | 268.8 | | |
| Turn Bay Length (m) | 70.0 | | 30.0 | 50.0 | | 30.0 | 20.0 | | 45.0 | | | |
| Base Capacity (vph) | 129 | 1757 | 779 | 298 | 1644 | 709 | 246 | 432 | 325 | 496 | | |
| 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 | 0.73 | 0.51 | 0.04 | 0.22 | 0.95 | 0.09 | 0.74 | 0.16 | 0.21 | 0.35 | | |

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 77 (64%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green
 Natural Cycle: 110
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.95
 Intersection Signal Delay: 35.3
 Intersection LOS: D
 Intersection Capacity Utilization 109.5%
 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: 3: Broadview Ave & Carling Ave



Lanes, Volumes, Timings
4: Clyde Ave & Doheny St

12/06/2022



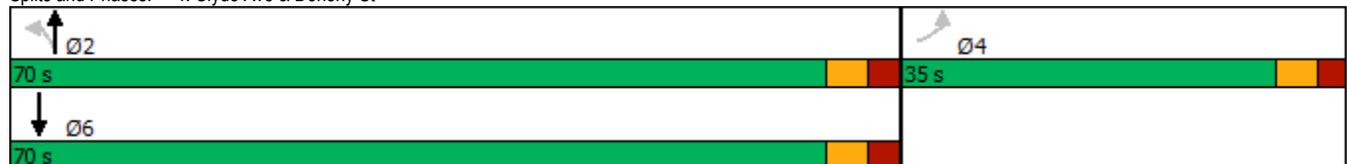
| Lane Group | EBL | NBL | NBT | SBT |
|------------------------|-------|-------|-------|-------|
| Lane Configurations | | | | |
| Traffic Volume (vph) | 24 | 32 | 305 | 264 |
| Future Volume (vph) | 24 | 32 | 305 | 264 |
| Lane Group Flow (vph) | 76 | 32 | 305 | 319 |
| Turn Type | Perm | Perm | NA | NA |
| Protected Phases | | | 2 | 6 |
| Permitted Phases | 4 | 2 | | |
| Detector Phase | 4 | 2 | 2 | 6 |
| Switch Phase | | | | |
| Minimum Initial (s) | 10.0 | 10.0 | 10.0 | 10.0 |
| Minimum Split (s) | 24.6 | 29.0 | 29.0 | 29.0 |
| Total Split (s) | 35.0 | 70.0 | 70.0 | 70.0 |
| Total Split (%) | 33.3% | 66.7% | 66.7% | 66.7% |
| Yellow Time (s) | 3.3 | 3.3 | 3.3 | 3.3 |
| All-Red Time (s) | 2.3 | 2.7 | 2.7 | 2.7 |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | 5.6 | 6.0 | 6.0 | 6.0 |
| Lead/Lag | | | | |
| Lead-Lag Optimize? | | | | |
| Recall Mode | None | Max | Max | Max |
| Act Effct Green (s) | 10.1 | 77.7 | 77.7 | 77.7 |
| Actuated g/C Ratio | 0.11 | 0.82 | 0.82 | 0.82 |
| v/c Ratio | 0.35 | 0.04 | 0.21 | 0.23 |
| Control Delay | 22.0 | 2.8 | 3.1 | 3.1 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 22.0 | 2.8 | 3.1 | 3.1 |
| LOS | C | A | A | A |
| Approach Delay | 22.0 | | 3.1 | 3.1 |
| Approach LOS | C | | A | A |
| Queue Length 50th (m) | 4.4 | 1.1 | 12.2 | 12.1 |
| Queue Length 95th (m) | 16.2 | 3.1 | 19.9 | 20.0 |
| Internal Link Dist (m) | 281.3 | | 265.7 | 16.3 |
| Turn Bay Length (m) | | 45.0 | | |
| Base Capacity (vph) | 532 | 825 | 1422 | 1382 |
| 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 | 0.14 | 0.04 | 0.21 | 0.23 |

Intersection Summary

Cycle Length: 105
 Actuated Cycle Length: 94.7
 Natural Cycle: 55
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.35
 Intersection Signal Delay: 5.0
 Intersection Capacity Utilization 46.1%
 Analysis Period (min) 15

Intersection LOS: A
 ICU Level of Service A

Splits and Phases: 4: Clyde Ave & Doheny St



Lanes, Volumes, Timings
5: Saigon Ct & Carling Ave WB

12/06/2022



| Lane Group | WBL | WBT | WBR | NBL | NBT | SBT |
|------------------------|-------|-------|-------|-------|-------|-------|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 32 | 1668 | 12 | 37 | 9 | 87 |
| Future Volume (vph) | 32 | 1668 | 12 | 37 | 9 | 87 |
| Lane Group Flow (vph) | 32 | 1668 | 12 | 0 | 46 | 102 |
| Turn Type | Perm | NA | Perm | Perm | NA | NA |
| Protected Phases | | 8 | | | 2 | 6 |
| Permitted Phases | 8 | | 8 | 2 | | |
| Detector Phase | 8 | 8 | 8 | 2 | 2 | 6 |
| Switch Phase | | | | | | |
| Minimum Initial (s) | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 |
| Minimum Split (s) | 29.7 | 29.7 | 29.7 | 26.7 | 26.7 | 26.7 |
| Total Split (s) | 92.0 | 92.0 | 92.0 | 28.0 | 28.0 | 28.0 |
| Total Split (%) | 76.7% | 76.7% | 76.7% | 23.3% | 23.3% | 23.3% |
| Yellow Time (s) | 3.7 | 3.7 | 3.7 | 3.3 | 3.3 | 3.3 |
| All-Red Time (s) | 2.0 | 2.0 | 2.0 | 2.4 | 2.4 | 2.4 |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 |
| Total Lost Time (s) | 5.7 | 5.7 | 5.7 | | 5.7 | 5.7 |
| Lead/Lag | | | | | | |
| Lead-Lag Optimize? | | | | | | |
| Recall Mode | C-Max | C-Max | C-Max | None | None | None |
| Act Effct Green (s) | 95.2 | 95.2 | 95.2 | | 13.4 | 13.4 |
| Actuated g/C Ratio | 0.79 | 0.79 | 0.79 | | 0.11 | 0.11 |
| v/c Ratio | 0.02 | 0.62 | 0.01 | | 0.35 | 0.51 |
| Control Delay | 3.4 | 6.8 | 0.7 | | 42.0 | 55.4 |
| Queue Delay | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 |
| Total Delay | 3.4 | 6.8 | 0.7 | | 42.0 | 55.4 |
| LOS | A | A | A | | D | E |
| Approach Delay | | 6.7 | | | 42.0 | 55.4 |
| Approach LOS | | A | | | D | E |
| Queue Length 50th (m) | 1.2 | 63.6 | 0.0 | | 9.0 | 21.9 |
| Queue Length 95th (m) | 4.4 | 116.9 | 0.8 | | 20.3 | 36.6 |
| Internal Link Dist (m) | | 298.8 | | | 45.3 | 50.2 |
| Turn Bay Length (m) | 50.0 | | 40.0 | | | |
| Base Capacity (vph) | 1338 | 2689 | 1161 | | 217 | 328 |
| 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 | 0.02 | 0.62 | 0.01 | | 0.21 | 0.31 |

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 62 (52%), Referenced to phase 8:WBTL, Start of Green
 Natural Cycle: 70
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.62
 Intersection Signal Delay: 10.2
 Intersection Capacity Utilization 69.1%
 Analysis Period (min) 15
 Intersection LOS: B
 ICU Level of Service C

Splits and Phases: 5: Saigon Ct & Carling Ave WB



Lanes, Volumes, Timings
6: Carling Ave EB & Saigon Ct

12/06/2022

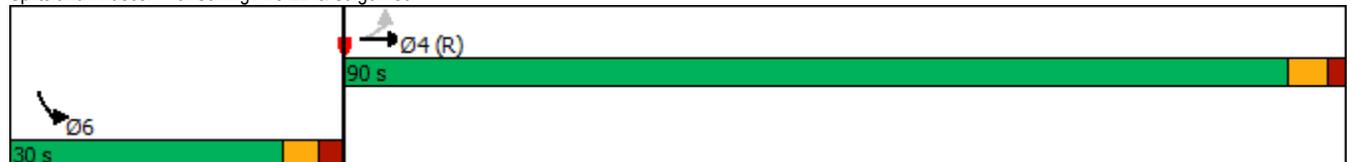


| Lane Group | EBT | SBL |
|------------------------|-------|-------|
| Lane Configurations | | |
| Traffic Volume (vph) | 1026 | 119 |
| Future Volume (vph) | 1026 | 119 |
| Lane Group Flow (vph) | 1071 | 119 |
| Turn Type | NA | Prot |
| Protected Phases | 4 | 6 |
| Permitted Phases | | |
| Detector Phase | 4 | 6 |
| Switch Phase | | |
| Minimum Initial (s) | 10.0 | 5.0 |
| Minimum Split (s) | 15.4 | 22.6 |
| Total Split (s) | 90.0 | 30.0 |
| Total Split (%) | 75.0% | 25.0% |
| Yellow Time (s) | 3.7 | 3.3 |
| All-Red Time (s) | 1.7 | 2.3 |
| Lost Time Adjust (s) | 0.0 | 0.0 |
| Total Lost Time (s) | 5.4 | 5.6 |
| Lead/Lag | | |
| Lead-Lag Optimize? | | |
| Recall Mode | C-Max | None |
| Act Effct Green (s) | 99.3 | 9.7 |
| Actuated g/C Ratio | 0.83 | 0.08 |
| v/c Ratio | 0.38 | 0.45 |
| Control Delay | 0.9 | 43.9 |
| Queue Delay | 0.0 | 0.0 |
| Total Delay | 0.9 | 43.9 |
| LOS | A | D |
| Approach Delay | 0.9 | 43.9 |
| Approach LOS | A | D |
| Queue Length 50th (m) | 4.8 | 15.1 |
| Queue Length 95th (m) | 6.3 | 24.7 |
| Internal Link Dist (m) | 110.2 | 45.3 |
| Turn Bay Length (m) | | |
| Base Capacity (vph) | 2799 | 668 |
| Starvation Cap Reductn | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 |
| Storage Cap Reductn | 0 | 0 |
| Reduced v/c Ratio | 0.38 | 0.18 |

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 105 (88%), Referenced to phase 4:EBTL, Start of Green
 Natural Cycle: 50
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.45
 Intersection Signal Delay: 5.2
 Intersection Capacity Utilization 44.6%
 Analysis Period (min) 15
 Intersection LOS: A
 ICU Level of Service A

Splits and Phases: 6: Carling Ave EB & Saigon Ct



Lanes, Volumes, Timings
 7: Clyde Ave & Laperriere Ave

12/06/2022



| Lane Group | WBL | NBT | SBT |
|---|------|------------------------|------|
| Lane Configurations | | | |
| Traffic Volume (vph) | 249 | 195 | 237 |
| Future Volume (vph) | 249 | 195 | 237 |
| Lane Group Flow (vph) | 438 | 358 | 380 |
| Sign Control | Stop | Stop | Stop |
| Intersection Summary | | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization 80.3% | | ICU Level of Service D | |
| Analysis Period (min) 15 | | | |

HCM Unsignalized Intersection Capacity Analysis
 7: Clyde Ave & Laperriere Ave

12/06/2022



| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|-----------------------------------|-------|-------|-------|----------------------|------|------|
| Lane Configurations | | | | | | |
| Sign Control | Stop | | Stop | | | Stop |
| Traffic Volume (vph) | 249 | 189 | 195 | 163 | 143 | 237 |
| Future Volume (vph) | 249 | 189 | 195 | 163 | 143 | 237 |
| Peak Hour Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Hourly flow rate (vph) | 249 | 189 | 195 | 163 | 143 | 237 |
| Direction, Lane # | WB 1 | NB 1 | SB 1 | | | |
| Volume Total (vph) | 438 | 358 | 380 | | | |
| Volume Left (vph) | 249 | 0 | 143 | | | |
| Volume Right (vph) | 189 | 163 | 0 | | | |
| Hadj (s) | -0.09 | -0.16 | 0.16 | | | |
| Departure Headway (s) | 5.9 | 5.9 | 6.1 | | | |
| Degree Utilization, x | 0.72 | 0.58 | 0.65 | | | |
| Capacity (veh/h) | 577 | 579 | 563 | | | |
| Control Delay (s) | 22.5 | 16.7 | 19.6 | | | |
| Approach Delay (s) | 22.5 | 16.7 | 19.6 | | | |
| Approach LOS | C | C | C | | | |
| Intersection Summary | | | | | | |
| Delay | | | 19.8 | | | |
| Level of Service | | | C | | | |
| Intersection Capacity Utilization | | | 80.3% | ICU Level of Service | D | |
| Analysis Period (min) | | | 15 | | | |

Lanes, Volumes, Timings
 8: Clyde Ave & Woodward Dr

12/06/2022



| Lane Group | EBL | EBR | NBT | SBT | SBR |
|---|------|-----|------------------------|------|-----|
| Lane Configurations | | | | | |
| Traffic Volume (vph) | 306 | 17 | 52 | 18 | 470 |
| Future Volume (vph) | 306 | 17 | 52 | 18 | 470 |
| Lane Group Flow (vph) | 306 | 17 | 73 | 18 | 470 |
| Sign Control | Free | | Stop | Stop | |
| Intersection Summary | | | | | |
| Control Type: Unsignalized | | | | | |
| Intersection Capacity Utilization 41.5% | | | ICU Level of Service A | | |
| Analysis Period (min) 15 | | | | | |

HCM Unsignalized Intersection Capacity Analysis
 8: Clyde Ave & Woodward Dr

12/06/2022



| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|-----------------------------------|-------------|-------------|-------------|----------------------|------|------|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 306 | 17 | 21 | 52 | 18 | 470 |
| Future Volume (Veh/h) | 306 | 17 | 21 | 52 | 18 | 470 |
| Sign Control | Free | | | Stop | Stop | |
| Grade | 0% | | | 0% | 0% | |
| Peak Hour Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Hourly flow rate (vph) | 306 | 17 | 21 | 52 | 18 | 470 |
| Pedestrians | | | | | | |
| Lane Width (m) | | | | | | |
| Walking Speed (m/s) | | | | | | |
| Percent Blockage | | | | | | |
| Right turn flare (veh) | 3 | | | | | |
| Median type | None | | | | | |
| Median storage (veh) | | | | | | |
| Upstream signal (m) | | | | | | |
| pX, platoon unblocked | | | | | | |
| vC, conflicting volume | 0 | | 621 | 612 | 612 | 0 |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | 0 | | 621 | 612 | 612 | 0 |
| tC, single (s) | 4.1 | | 7.1 | 6.5 | 6.5 | 6.2 |
| tC, 2 stage (s) | | | | | | |
| tF (s) | 2.2 | | 3.5 | 4.0 | 4.0 | 3.3 |
| p0 queue free % | 81 | | 89 | 84 | 95 | 57 |
| cM capacity (veh/h) | 1623 | | 186 | 331 | 331 | 1085 |
| Direction, Lane # | EB 1 | EB 2 | NB 1 | SB 1 | | |
| Volume Total | 306 | 17 | 73 | 488 | | |
| Volume Left | 306 | 0 | 21 | 0 | | |
| Volume Right | 0 | 17 | 0 | 470 | | |
| cSH | 1623 | 1700 | 270 | 1127 | | |
| Volume to Capacity | 0.19 | 0.01 | 0.27 | 0.43 | | |
| Queue Length 95th (m) | 5.3 | 0.0 | 8.1 | 17.0 | | |
| Control Delay (s) | 7.7 | 0.0 | 23.2 | 11.0 | | |
| Lane LOS | A | | C | B | | |
| Approach Delay (s) | 7.3 | | 23.2 | 11.0 | | |
| Approach LOS | | | C | B | | |
| Intersection Summary | | | | | | |
| Average Delay | | | 10.7 | | | |
| Intersection Capacity Utilization | | | 41.5% | ICU Level of Service | A | |
| Analysis Period (min) | | | 15 | | | |

Lanes, Volumes, Timings
 9: Clyde Ave & Clyde Access

12/06/2022



| Lane Group | WBL | NBT | SBT |
|---|------|------------------------|------|
| Lane Configurations | | | |
| Traffic Volume (vph) | 34 | 368 | 401 |
| Future Volume (vph) | 34 | 368 | 401 |
| Lane Group Flow (vph) | 64 | 395 | 456 |
| Sign Control | Stop | Free | Free |
| Intersection Summary | | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization 39.0% | | ICU Level of Service A | |
| Analysis Period (min) 15 | | | |

HCM Unsignalized Intersection Capacity Analysis
 9: Clyde Ave & Clyde Access

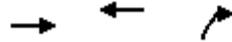
12/06/2022



| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|-----------------------------------|-------------|-------------|-------------|-------------|----------------------|------|
| Lane Configurations | W | | T | | | T |
| Traffic Volume (veh/h) | 34 | 30 | 368 | 27 | 55 | 401 |
| Future Volume (Veh/h) | 34 | 30 | 368 | 27 | 55 | 401 |
| Sign Control | Stop | | Free | | | Free |
| Grade | 0% | | 0% | | | 0% |
| Peak Hour Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Hourly flow rate (vph) | 34 | 30 | 368 | 27 | 55 | 401 |
| Pedestrians | | | | | | |
| Lane Width (m) | | | | | | |
| Walking Speed (m/s) | | | | | | |
| Percent Blockage | | | | | | |
| Right turn flare (veh) | | | | | | |
| Median type | | | None | | | None |
| Median storage (veh) | | | | | | |
| Upstream signal (m) | | | 40 | | | 108 |
| pX, platoon unblocked | | | | | | |
| vC, conflicting volume | 692 | 198 | | | 395 | |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | 692 | 198 | | | 395 | |
| tC, single (s) | 6.8 | 6.9 | | | 4.1 | |
| tC, 2 stage (s) | | | | | | |
| tF (s) | 3.5 | 3.3 | | | 2.2 | |
| p0 queue free % | 91 | 96 | | | 95 | |
| cM capacity (veh/h) | 360 | 811 | | | 1160 | |
| Direction, Lane # | WB 1 | NB 1 | NB 2 | SB 1 | SB 2 | |
| Volume Total | 64 | 245 | 150 | 189 | 267 | |
| Volume Left | 34 | 0 | 0 | 55 | 0 | |
| Volume Right | 30 | 0 | 27 | 0 | 0 | |
| cSH | 487 | 1700 | 1700 | 1160 | 1700 | |
| Volume to Capacity | 0.13 | 0.14 | 0.09 | 0.05 | 0.16 | |
| Queue Length 95th (m) | 3.4 | 0.0 | 0.0 | 1.1 | 0.0 | |
| Control Delay (s) | 13.5 | 0.0 | 0.0 | 2.7 | 0.0 | |
| Lane LOS | B | | | A | | |
| Approach Delay (s) | 13.5 | 0.0 | | 1.1 | | |
| Approach LOS | B | | | | | |
| Intersection Summary | | | | | | |
| Average Delay | | | 1.5 | | | |
| Intersection Capacity Utilization | | | 39.0% | | ICU Level of Service | A |
| Analysis Period (min) | | | 15 | | | |

Lanes, Volumes, Timings
 10: Carling Access & Carling Ave

12/06/2022



| Lane Group | EBT | WBT | NBR |
|---|------|------------------------|-----|
| Lane Configurations | | | |
| Traffic Volume (vph) | 898 | 1754 | 32 |
| Future Volume (vph) | 898 | 1754 | 32 |
| Lane Group Flow (vph) | 950 | 1754 | 32 |
| Sign Control | Free | Free | |
| Intersection Summary | | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization 54.5% | | ICU Level of Service A | |
| Analysis Period (min) 15 | | | |

HCM Unsignalized Intersection Capacity Analysis
 10: Carling Access & Carling Ave

12/06/2022

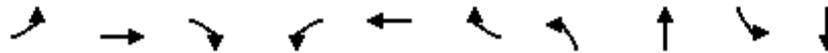


| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
|-----------------------------------|-------------|-------------|-------------|-------------|----------------------|------|
| Lane Configurations | ↕↕ | | | ↕↕ | | ↗ |
| Traffic Volume (veh/h) | 898 | 52 | 0 | 1754 | 0 | 32 |
| Future Volume (Veh/h) | 898 | 52 | 0 | 1754 | 0 | 32 |
| Sign Control | Free | | | Free | Stop | |
| Grade | 0% | | | 0% | 0% | |
| Peak Hour Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Hourly flow rate (vph) | 898 | 52 | 0 | 1754 | 0 | 32 |
| Pedestrians | | | | | | |
| Lane Width (m) | | | | | | |
| Walking Speed (m/s) | | | | | | |
| Percent Blockage | | | | | | |
| Right turn flare (veh) | | | | | | |
| Median type | None | | | None | | |
| Median storage (veh) | | | | | | |
| Upstream signal (m) | 112 | | | 186 | | |
| pX, platoon unblocked | | | 0.85 | | 0.69 | 0.85 |
| vC, conflicting volume | | | 950 | | 1801 | 475 |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | | | 599 | | 321 | 43 |
| tC, single (s) | | | 4.1 | | 6.8 | 6.9 |
| tC, 2 stage (s) | | | | | | |
| tF (s) | | | 2.2 | | 3.5 | 3.3 |
| p0 queue free % | | | 100 | | 100 | 96 |
| cM capacity (veh/h) | | | 831 | | 448 | 869 |
| Direction, Lane # | EB 1 | EB 2 | WB 1 | WB 2 | NB 1 | |
| Volume Total | 599 | 351 | 877 | 877 | 32 | |
| Volume Left | 0 | 0 | 0 | 0 | 0 | |
| Volume Right | 0 | 52 | 0 | 0 | 32 | |
| cSH | 1700 | 1700 | 1700 | 1700 | 869 | |
| Volume to Capacity | 0.35 | 0.21 | 0.52 | 0.52 | 0.04 | |
| Queue Length 95th (m) | 0.0 | 0.0 | 0.0 | 0.0 | 0.9 | |
| Control Delay (s) | 0.0 | 0.0 | 0.0 | 0.0 | 9.3 | |
| Lane LOS | | | | | A | |
| Approach Delay (s) | 0.0 | | 0.0 | | 9.3 | |
| Approach LOS | | | | | A | |
| Intersection Summary | | | | | | |
| Average Delay | | | 0.1 | | | |
| Intersection Capacity Utilization | | | 54.5% | | ICU Level of Service | A |
| Analysis Period (min) | | | 15 | | | |

Total Projected 2036 with Demand Rationalization

Lanes, Volumes, Timings
1: Churchill Ave & Carling Ave

12/06/2022

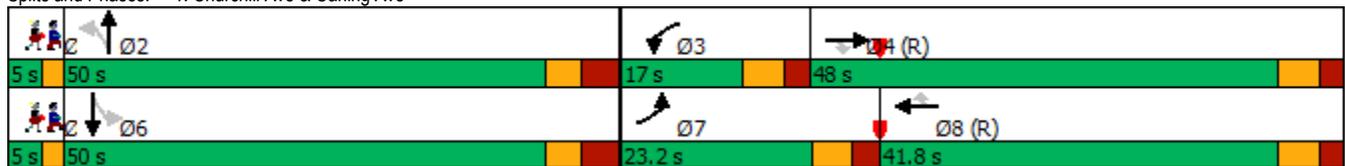


| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | SBL | SBT | Ø1 | Ø5 |
|------------------------|-------|--------|-------|-------|-------|-------|-------|-------|--------|-------|------|------|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 180 | 1274 | 98 | 181 | 615 | 154 | 11 | 44 | 347 | 44 | | |
| Future Volume (vph) | 180 | 1274 | 98 | 181 | 615 | 154 | 11 | 44 | 347 | 44 | | |
| Lane Group Flow (vph) | 180 | 1274 | 98 | 181 | 615 | 154 | 11 | 288 | 347 | 291 | | |
| Turn Type | Prot | NA | Perm | Prot | NA | Perm | Perm | NA | Perm | NA | | |
| Protected Phases | 7 | 4 | | 3 | 8 | | | 2 | | 6 | 1 | 5 |
| Permitted Phases | | | 4 | | | 8 | 2 | | 6 | | | |
| Detector Phase | 7 | 4 | 4 | 3 | 8 | 8 | 2 | 2 | 6 | 6 | | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 5.0 | 10.0 | 10.0 | 5.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 3.0 | 3.0 |
| Minimum Split (s) | 11.1 | 34.1 | 34.1 | 11.1 | 34.1 | 34.1 | 39.8 | 39.8 | 39.8 | 39.8 | 5.0 | 5.0 |
| Total Split (s) | 23.2 | 48.0 | 48.0 | 17.0 | 41.8 | 41.8 | 50.0 | 50.0 | 50.0 | 50.0 | 5.0 | 5.0 |
| Total Split (%) | 19.3% | 40.0% | 40.0% | 14.2% | 34.8% | 34.8% | 41.7% | 41.7% | 41.7% | 41.7% | 4% | 4% |
| Yellow Time (s) | 3.7 | 3.7 | 3.7 | 3.7 | 3.7 | 3.7 | 3.3 | 3.3 | 3.3 | 3.3 | 2.0 | 2.0 |
| All-Red Time (s) | 2.4 | 2.4 | 2.4 | 2.4 | 2.4 | 2.4 | 3.5 | 3.5 | 3.5 | 3.5 | 0.0 | 0.0 |
| 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) | 6.1 | 6.1 | 6.1 | 6.1 | 6.1 | 6.1 | 6.8 | 6.8 | 6.8 | 6.8 | | |
| Lead/Lag | Lead | Lag | Lag | Lead | Lag | Lag | Lag | Lag | Lag | Lag | Lead | Lead |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Recall Mode | None | C-Max | C-Max | None | C-Max | C-Max | Max | Max | Max | Max | None | None |
| Act Effct Green (s) | 15.8 | 41.9 | 41.9 | 10.9 | 37.0 | 37.0 | 48.2 | 48.2 | 48.2 | 48.2 | | |
| Actuated g/C Ratio | 0.13 | 0.35 | 0.35 | 0.09 | 0.31 | 0.31 | 0.40 | 0.40 | 0.40 | 0.40 | | |
| v/c Ratio | 0.81 | 1.08 | 0.17 | 1.18 | 0.60 | 0.29 | 0.03 | 0.38 | 0.99 | 0.40 | | |
| Control Delay | 79.3 | 88.1 | 14.2 | 174.4 | 36.2 | 6.3 | 22.3 | 6.4 | 82.8 | 6.6 | | |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | |
| Total Delay | 79.3 | 88.1 | 14.2 | 174.4 | 36.2 | 6.3 | 22.3 | 6.4 | 82.8 | 6.6 | | |
| LOS | E | F | B | F | D | A | C | A | F | A | | |
| Approach Delay | | 82.4 | | | 57.7 | | | 7.0 | | 48.0 | | |
| Approach LOS | | F | | | E | | | A | | D | | |
| Queue Length 50th (m) | 44.8 | ~169.4 | 4.8 | ~51.2 | 66.1 | 2.5 | 1.6 | 6.3 | 80.0 | 6.3 | | |
| Queue Length 95th (m) | m58.7 | #212.5 | m10.5 | #92.6 | 85.4 | 16.0 | 5.4 | 24.7 | #141.4 | 25.2 | | |
| Internal Link Dist (m) | | 162.3 | | | 176.6 | | | 177.0 | | 412.2 | | |
| Turn Bay Length (m) | 65.0 | | 30.0 | 65.0 | | 40.0 | 20.0 | | 20.0 | | | |
| Base Capacity (vph) | 241 | 1183 | 573 | 153 | 1024 | 527 | 351 | 754 | 350 | 734 | | |
| 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 | 0.75 | 1.08 | 0.17 | 1.18 | 0.60 | 0.29 | 0.03 | 0.38 | 0.99 | 0.40 | | |

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 92 (77%), Referenced to phase 4:EBT and 8:WBT, Start of Green
 Natural Cycle: 140
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.18
 Intersection Signal Delay: 62.7
 Intersection Capacity Utilization 117.1%
 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.
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: Churchill Ave & Carling Ave



Lanes, Volumes, Timings
2: Clyde Ave/Cole Ave & Carling Ave

12/06/2022



| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT |
|------------------------|-------|--------|-------|--------|-------|-------|-------|-------|-------|-------|-------|
| Lane Configurations | | | | | | | | | | | |
| Traffic Volume (vph) | 61 | 1309 | 142 | 237 | 614 | 52 | 184 | 51 | 157 | 35 | 63 |
| Future Volume (vph) | 61 | 1309 | 142 | 237 | 614 | 52 | 184 | 51 | 157 | 35 | 63 |
| Lane Group Flow (vph) | 61 | 1309 | 142 | 237 | 614 | 52 | 184 | 51 | 157 | 35 | 129 |
| Turn Type | Prot | NA | Perm | Prot | NA | Perm | Perm | NA | Perm | Perm | NA |
| Protected Phases | 7 | 4 | | 3 | 8 | | | 2 | | | 6 |
| Permitted Phases | | | 4 | | | 8 | 2 | | 2 | 6 | |
| Detector Phase | 7 | 4 | 4 | 3 | 8 | 8 | 2 | 2 | 2 | 6 | 6 |
| Switch Phase | | | | | | | | | | | |
| Minimum Initial (s) | 5.0 | 10.0 | 10.0 | 5.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 |
| Minimum Split (s) | 10.4 | 30.8 | 30.8 | 10.4 | 30.8 | 30.8 | 36.6 | 36.6 | 36.6 | 36.6 | 36.6 |
| Total Split (s) | 15.5 | 57.4 | 57.4 | 26.0 | 67.9 | 67.9 | 36.6 | 36.6 | 36.6 | 36.6 | 36.6 |
| Total Split (%) | 12.9% | 47.8% | 47.8% | 21.7% | 56.6% | 56.6% | 30.5% | 30.5% | 30.5% | 30.5% | 30.5% |
| Yellow Time (s) | 3.7 | 3.7 | 3.7 | 3.7 | 3.7 | 3.7 | 3.3 | 3.3 | 3.3 | 3.3 | 3.3 |
| All-Red Time (s) | 1.7 | 2.1 | 2.1 | 1.7 | 2.1 | 2.1 | 3.3 | 3.3 | 3.3 | 3.3 | 3.3 |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | 5.4 | 5.8 | 5.8 | 5.4 | 5.8 | 5.8 | 6.6 | 6.6 | 6.6 | 6.6 | 6.6 |
| Lead/Lag | Lead | Lag | Lag | Lead | Lag | Lag | | | | | |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | Yes | Yes | | | | | |
| Recall Mode | None | C-Max | C-Max | None | C-Max | C-Max | None | None | None | None | None |
| Act Effct Green (s) | 8.8 | 57.5 | 57.5 | 20.6 | 71.5 | 71.5 | 24.1 | 24.1 | 24.1 | 24.1 | 24.1 |
| Actuated g/C Ratio | 0.07 | 0.48 | 0.48 | 0.17 | 0.60 | 0.60 | 0.20 | 0.20 | 0.20 | 0.20 | 0.20 |
| v/c Ratio | 0.49 | 0.81 | 0.18 | 0.85 | 0.31 | 0.06 | 0.84 | 0.14 | 0.40 | 0.14 | 0.36 |
| Control Delay | 69.5 | 15.1 | 0.6 | 84.3 | 6.9 | 0.2 | 76.2 | 37.8 | 8.8 | 37.9 | 28.8 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 69.5 | 15.1 | 0.6 | 84.3 | 6.9 | 0.2 | 76.2 | 37.8 | 8.8 | 37.9 | 28.8 |
| LOS | E | B | A | F | A | A | E | D | A | D | C |
| Approach Delay | | 15.9 | | | 26.8 | | | 44.2 | | | 30.7 |
| Approach LOS | | B | | | C | | | D | | | C |
| Queue Length 50th (m) | 15.2 | 32.7 | 0.2 | 57.7 | 16.3 | 0.1 | 41.6 | 9.9 | 0.0 | 6.8 | 17.3 |
| Queue Length 95th (m) | m20.4 | #127.3 | m0.7 | #100.6 | 25.5 | m0.3 | #66.1 | 19.6 | 16.3 | 14.9 | 33.2 |
| Internal Link Dist (m) | | 369.5 | | | 87.5 | | | 83.7 | | | 136.4 |
| Turn Bay Length (m) | 20.0 | | 105.0 | 120.0 | | 30.0 | 95.0 | | 5.0 | 20.0 | |
| Base Capacity (vph) | 143 | 1624 | 786 | 291 | 1981 | 906 | 272 | 446 | 447 | 318 | 438 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 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 |
| Reduced v/c Ratio | 0.43 | 0.81 | 0.18 | 0.81 | 0.31 | 0.06 | 0.68 | 0.11 | 0.35 | 0.11 | 0.29 |

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 93 (78%), Referenced to phase 4:EBT and 8:WBT, Start of Green

Natural Cycle: 100

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.85

Intersection Signal Delay: 23.8

Intersection LOS: C

Intersection Capacity Utilization 95.4%

ICU Level of Service F

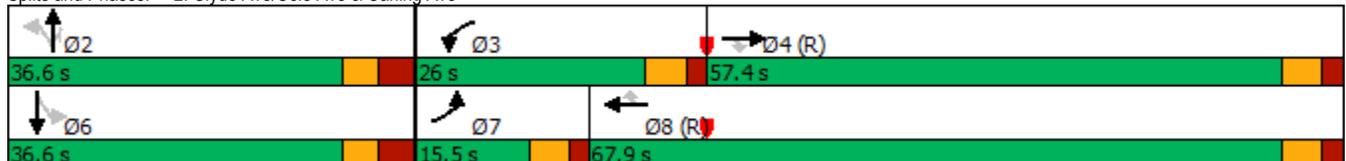
Analysis Period (min) 15

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: Clyde Ave/Cole Ave & Carling Ave



Lanes, Volumes, Timings
3: Broadview Ave & Carling Ave

12/06/2022

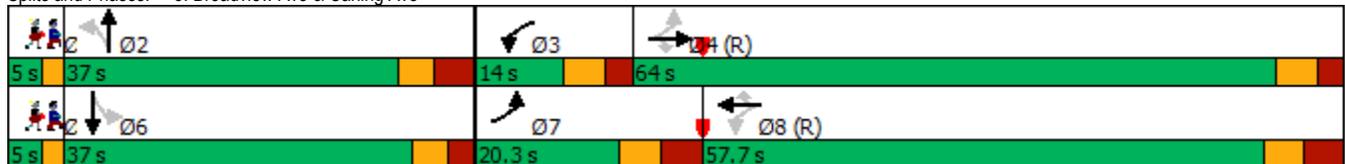


| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | SBL | SBT | Ø1 | Ø5 |
|------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|------|------|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 197 | 1336 | 104 | 99 | 655 | 124 | 112 | 24 | 160 | 20 | | |
| Future Volume (vph) | 197 | 1336 | 104 | 99 | 655 | 124 | 112 | 24 | 160 | 20 | | |
| Lane Group Flow (vph) | 197 | 1336 | 104 | 99 | 655 | 124 | 112 | 96 | 160 | 155 | | |
| Turn Type | pm+pt | NA | Perm | pm+pt | NA | Perm | Perm | NA | Perm | NA | | |
| Protected Phases | 7 | 4 | | 3 | 8 | | | 2 | | 6 | 1 | 5 |
| Permitted Phases | 4 | | 4 | 8 | | 8 | 2 | | 6 | | | |
| Detector Phase | 7 | 4 | 4 | 3 | 8 | 8 | 2 | 2 | 6 | 6 | | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 5.0 | 10.0 | 10.0 | 5.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 3.0 | 3.0 |
| Minimum Split (s) | 12.4 | 23.2 | 23.2 | 11.2 | 24.4 | 24.4 | 37.0 | 37.0 | 35.8 | 35.8 | 5.0 | 5.0 |
| Total Split (s) | 20.3 | 64.0 | 64.0 | 14.0 | 57.7 | 57.7 | 37.0 | 37.0 | 37.0 | 37.0 | 5.0 | 5.0 |
| Total Split (%) | 16.9% | 53.3% | 53.3% | 11.7% | 48.1% | 48.1% | 30.8% | 30.8% | 30.8% | 30.8% | 4% | 4% |
| Yellow Time (s) | 3.7 | 3.7 | 3.7 | 3.7 | 3.7 | 3.7 | 3.3 | 3.3 | 3.3 | 3.3 | 2.0 | 2.0 |
| All-Red Time (s) | 3.7 | 2.5 | 2.5 | 2.5 | 3.7 | 3.7 | 3.7 | 3.7 | 2.5 | 2.5 | 0.0 | 0.0 |
| 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) | 7.4 | 6.2 | 6.2 | 6.2 | 7.4 | 7.4 | 7.0 | 7.0 | 5.8 | 5.8 | | |
| Lead/Lag | Lead | Lag | Lag | Lead | Lag | Lag | Lag | Lag | Lag | Lag | Lead | Lead |
| Lead-Lag Optimize? | Yes | Yes | Yes |
| Recall Mode | None | C-Max | C-Max | None | C-Max | C-Max | Max | Max | Max | Max | Min | Min |
| Act Effct Green (s) | 68.3 | 58.2 | 58.2 | 60.5 | 51.9 | 51.9 | 30.0 | 30.0 | 31.2 | 31.2 | | |
| Actuated g/C Ratio | 0.57 | 0.48 | 0.48 | 0.50 | 0.43 | 0.43 | 0.25 | 0.25 | 0.26 | 0.26 | | |
| v/c Ratio | 0.48 | 0.81 | 0.16 | 0.56 | 0.46 | 0.20 | 0.46 | 0.22 | 0.52 | 0.34 | | |
| Control Delay | 15.6 | 31.4 | 3.3 | 31.6 | 38.1 | 15.9 | 45.3 | 13.7 | 45.0 | 10.3 | | |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | |
| Total Delay | 15.6 | 31.4 | 3.3 | 31.6 | 38.1 | 15.9 | 45.3 | 13.7 | 45.0 | 10.3 | | |
| LOS | B | C | A | C | D | B | D | B | D | B | | |
| Approach Delay | | 27.7 | | | 34.2 | | | 30.7 | | 27.9 | | |
| Approach LOS | | C | | | C | | | C | | C | | |
| Queue Length 50th (m) | 20.4 | 137.8 | 0.0 | 13.1 | 69.1 | 9.6 | 22.4 | 4.3 | 32.4 | 3.6 | | |
| Queue Length 95th (m) | 32.2 | 168.0 | 8.1 | m24.2 | 83.1 | m21.4 | 40.8 | 17.8 | 54.5 | 20.2 | | |
| Internal Link Dist (m) | | 239.1 | | | 369.5 | | | 434.9 | | 268.8 | | |
| Turn Bay Length (m) | 70.0 | | 30.0 | 50.0 | | 30.0 | 20.0 | | 45.0 | | | |
| Base Capacity (vph) | 435 | 1642 | 660 | 183 | 1409 | 615 | 244 | 432 | 309 | 458 | | |
| 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 | 0.45 | 0.81 | 0.16 | 0.54 | 0.46 | 0.20 | 0.46 | 0.22 | 0.52 | 0.34 | | |

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 77 (64%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green
 Natural Cycle: 90
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.81
 Intersection Signal Delay: 29.8
 Intersection LOS: C
 Intersection Capacity Utilization 100.1%
 ICU Level of Service G
 Analysis Period (min) 15
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 3: Broadview Ave & Carling Ave



Lanes, Volumes, Timings
4: Clyde Ave & Doheny St

12/06/2022



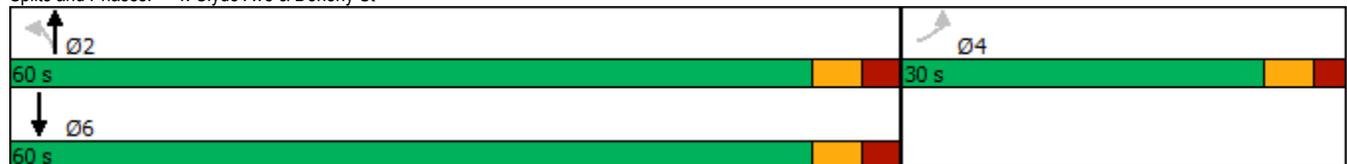
| Lane Group | EBL | NBL | NBT | SBT |
|------------------------|-------|-------|-------|-------|
| Lane Configurations | | | | |
| Traffic Volume (vph) | 34 | 91 | 338 | 363 |
| Future Volume (vph) | 34 | 91 | 338 | 363 |
| Lane Group Flow (vph) | 94 | 91 | 338 | 443 |
| Turn Type | Perm | Perm | NA | NA |
| Protected Phases | | | 2 | 6 |
| Permitted Phases | 4 | 2 | | |
| Detector Phase | 4 | 2 | 2 | 6 |
| Switch Phase | | | | |
| Minimum Initial (s) | 10.0 | 10.0 | 10.0 | 10.0 |
| Minimum Split (s) | 24.6 | 29.0 | 29.0 | 29.0 |
| Total Split (s) | 30.0 | 60.0 | 60.0 | 60.0 |
| Total Split (%) | 33.3% | 66.7% | 66.7% | 66.7% |
| Yellow Time (s) | 3.3 | 3.3 | 3.3 | 3.3 |
| All-Red Time (s) | 2.3 | 2.7 | 2.7 | 2.7 |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | 5.6 | 6.0 | 6.0 | 6.0 |
| Lead/Lag | | | | |
| Lead-Lag Optimize? | | | | |
| Recall Mode | None | Max | Max | Max |
| Act Effct Green (s) | 11.8 | 66.0 | 66.0 | 66.0 |
| Actuated g/C Ratio | 0.14 | 0.78 | 0.78 | 0.78 |
| v/c Ratio | 0.35 | 0.13 | 0.26 | 0.34 |
| Control Delay | 18.0 | 4.8 | 4.8 | 5.1 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.3 |
| Total Delay | 18.0 | 4.8 | 4.8 | 5.4 |
| LOS | B | A | A | A |
| Approach Delay | 18.0 | | 4.8 | 5.4 |
| Approach LOS | B | | A | A |
| Queue Length 50th (m) | 5.4 | 3.3 | 14.0 | 18.5 |
| Queue Length 95th (m) | 16.3 | 11.3 | 35.1 | 46.3 |
| Internal Link Dist (m) | 281.3 | | 265.7 | 16.3 |
| Turn Bay Length (m) | | 45.0 | | |
| Base Capacity (vph) | 497 | 693 | 1302 | 1315 |
| Starvation Cap Reductn | 0 | 0 | 0 | 393 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.19 | 0.13 | 0.26 | 0.48 |

Intersection Summary

Cycle Length: 90
 Actuated Cycle Length: 84.6
 Natural Cycle: 55
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.35
 Intersection Signal Delay: 6.4
 Intersection Capacity Utilization 57.6%
 Analysis Period (min) 15

Intersection LOS: A
 ICU Level of Service B

Splits and Phases: 4: Clyde Ave & Doheny St



Lanes, Volumes, Timings
5: Saigon Ct & Carling Ave WB

12/06/2022



| Lane Group | WBL | WBT | WBR | NBL | NBT | SBT |
|------------------------|-------|-------|-------|-------|-------|-------|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 29 | 896 | 58 | 22 | 52 | 26 |
| Future Volume (vph) | 29 | 896 | 58 | 22 | 52 | 26 |
| Lane Group Flow (vph) | 29 | 896 | 58 | 0 | 74 | 35 |
| Turn Type | Perm | NA | Perm | Perm | NA | NA |
| Protected Phases | | 8 | | | 2 | 6 |
| Permitted Phases | 8 | | 8 | 2 | | |
| Detector Phase | 8 | 8 | 8 | 2 | 2 | 6 |
| Switch Phase | | | | | | |
| Minimum Initial (s) | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 |
| Minimum Split (s) | 29.7 | 29.7 | 29.7 | 26.7 | 26.7 | 26.7 |
| Total Split (s) | 84.0 | 84.0 | 84.0 | 36.0 | 36.0 | 36.0 |
| Total Split (%) | 70.0% | 70.0% | 70.0% | 30.0% | 30.0% | 30.0% |
| Yellow Time (s) | 3.7 | 3.7 | 3.7 | 3.3 | 3.3 | 3.3 |
| All-Red Time (s) | 2.0 | 2.0 | 2.0 | 2.4 | 2.4 | 2.4 |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 |
| Total Lost Time (s) | 5.7 | 5.7 | 5.7 | | 5.7 | 5.7 |
| Lead/Lag | | | | | | |
| Lead-Lag Optimize? | | | | | | |
| Recall Mode | C-Max | C-Max | C-Max | None | None | None |
| Act Effct Green (s) | 101.2 | 101.2 | 101.2 | | 11.7 | 11.7 |
| Actuated g/C Ratio | 0.84 | 0.84 | 0.84 | | 0.10 | 0.10 |
| v/c Ratio | 0.02 | 0.32 | 0.05 | | 0.48 | 0.20 |
| Control Delay | 2.6 | 3.2 | 0.8 | | 47.4 | 41.7 |
| Queue Delay | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 |
| Total Delay | 2.6 | 3.2 | 0.8 | | 47.4 | 41.7 |
| LOS | A | A | A | | D | D |
| Approach Delay | | 3.0 | | | 47.4 | 41.7 |
| Approach LOS | | A | | | D | D |
| Queue Length 50th (m) | 1.0 | 22.0 | 0.0 | | 15.3 | 5.8 |
| Queue Length 95th (m) | 3.2 | 35.0 | 2.5 | | m24.5 | 15.2 |
| Internal Link Dist (m) | | 298.8 | | | 45.3 | 50.2 |
| Turn Bay Length (m) | 50.0 | | 40.0 | | | |
| Base Capacity (vph) | 1429 | 2777 | 1238 | | 399 | 441 |
| Starvation Cap Reductn | 0 | 0 | 0 | | 14 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | | 0 | 0 |
| Reduced v/c Ratio | 0.02 | 0.32 | 0.05 | | 0.19 | 0.08 |

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 62 (52%), Referenced to phase 8:WBTL, Start of Green
 Natural Cycle: 60
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.48
 Intersection Signal Delay: 7.3
 Intersection Capacity Utilization 46.5%
 Analysis Period (min) 15
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 5: Saigon Ct & Carling Ave WB



Lanes, Volumes, Timings
6: Carling Ave EB & Saigon Ct

12/06/2022

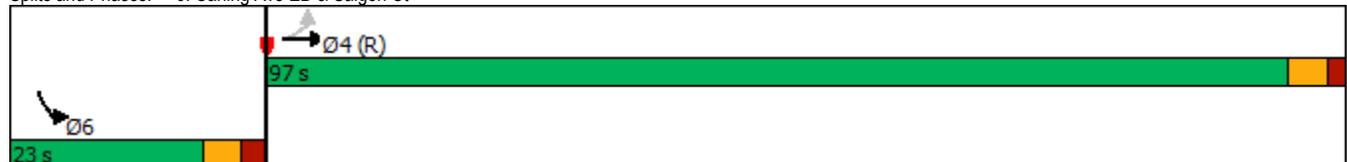


| Lane Group | EBT | SBL |
|------------------------|-------|-------|
| Lane Configurations | | |
| Traffic Volume (vph) | 1757 | 42 |
| Future Volume (vph) | 1757 | 42 |
| Lane Group Flow (vph) | 1862 | 42 |
| Turn Type | NA | Prot |
| Protected Phases | 4 | 6 |
| Permitted Phases | | |
| Detector Phase | 4 | 6 |
| Switch Phase | | |
| Minimum Initial (s) | 10.0 | 5.0 |
| Minimum Split (s) | 15.4 | 22.6 |
| Total Split (s) | 97.0 | 23.0 |
| Total Split (%) | 80.8% | 19.2% |
| Yellow Time (s) | 3.7 | 3.3 |
| All-Red Time (s) | 1.7 | 2.3 |
| Lost Time Adjust (s) | 0.0 | 0.0 |
| Total Lost Time (s) | 5.4 | 5.6 |
| Lead/Lag | | |
| Lead-Lag Optimize? | | |
| Recall Mode | C-Max | None |
| Act Effct Green (s) | 105.3 | 7.0 |
| Actuated g/C Ratio | 0.88 | 0.06 |
| v/c Ratio | 0.63 | 0.22 |
| Control Delay | 3.3 | 53.8 |
| Queue Delay | 0.0 | 0.0 |
| Total Delay | 3.3 | 53.8 |
| LOS | A | D |
| Approach Delay | 3.3 | 53.8 |
| Approach LOS | A | D |
| Queue Length 50th (m) | 20.6 | 5.2 |
| Queue Length 95th (m) | m11.5 | 11.1 |
| Internal Link Dist (m) | 110.2 | 45.3 |
| Turn Bay Length (m) | | |
| Base Capacity (vph) | 2966 | 476 |
| Starvation Cap Reductn | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 |
| Storage Cap Reductn | 0 | 0 |
| Reduced v/c Ratio | 0.63 | 0.09 |

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 105 (88%), Referenced to phase 4:EBTL, Start of Green
 Natural Cycle: 70
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.63
 Intersection Signal Delay: 4.4
 Intersection Capacity Utilization 67.8%
 Analysis Period (min) 15
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 6: Carling Ave EB & Saigon Ct



Lanes, Volumes, Timings
 7: Clyde Ave & Laperriere Ave

12/06/2022



| Lane Group | WBL | NBT | SBT |
|---|------|------------------------|------|
| Lane Configurations | | | |
| Traffic Volume (vph) | 128 | 233 | 282 |
| Future Volume (vph) | 128 | 233 | 282 |
| Lane Group Flow (vph) | 368 | 405 | 491 |
| Sign Control | Stop | Stop | Stop |
| Intersection Summary | | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization 85.4% | | ICU Level of Service E | |
| Analysis Period (min) 15 | | | |

HCM Unsignalized Intersection Capacity Analysis
 7: Clyde Ave & Laperriere Ave

12/06/2022



| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|-----------------------------------|-------|-------|-------|----------------------|------|------|
| Lane Configurations | W | | T | | | T |
| Sign Control | Stop | | Stop | | | Stop |
| Traffic Volume (vph) | 128 | 240 | 233 | 172 | 209 | 282 |
| Future Volume (vph) | 128 | 240 | 233 | 172 | 209 | 282 |
| Peak Hour Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Hourly flow rate (vph) | 128 | 240 | 233 | 172 | 209 | 282 |
| Direction, Lane # | WB 1 | NB 1 | SB 1 | | | |
| Volume Total (vph) | 368 | 405 | 491 | | | |
| Volume Left (vph) | 128 | 0 | 209 | | | |
| Volume Right (vph) | 240 | 172 | 0 | | | |
| Hadj (s) | -0.27 | -0.09 | 0.19 | | | |
| Departure Headway (s) | 6.1 | 5.9 | 6.0 | | | |
| Degree Utilization, x | 0.62 | 0.66 | 0.82 | | | |
| Capacity (veh/h) | 551 | 582 | 577 | | | |
| Control Delay (s) | 18.7 | 19.8 | 30.8 | | | |
| Approach Delay (s) | 18.7 | 19.8 | 30.8 | | | |
| Approach LOS | C | C | D | | | |
| Intersection Summary | | | | | | |
| Delay | | | 23.7 | | | |
| Level of Service | | | C | | | |
| Intersection Capacity Utilization | | | 85.4% | ICU Level of Service | | E |
| Analysis Period (min) | | | 15 | | | |

Lanes, Volumes, Timings
 8: Clyde Ave & Woodward Dr

12/06/2022



| Lane Group | EBL | EBR | NBT | SBT | SBR |
|---|------|-----|------------------------|------|-----|
| Lane Configurations | | | | | |
| Traffic Volume (vph) | 367 | 8 | 38 | 47 | 363 |
| Future Volume (vph) | 367 | 8 | 38 | 47 | 363 |
| Lane Group Flow (vph) | 367 | 8 | 50 | 47 | 363 |
| Sign Control | Free | | Stop | Stop | |
| Intersection Summary | | | | | |
| Control Type: Unsignalized | | | | | |
| Intersection Capacity Utilization 37.6% | | | ICU Level of Service A | | |
| Analysis Period (min) 15 | | | | | |

HCM Unsignalized Intersection Capacity Analysis
 8: Clyde Ave & Woodward Dr

12/06/2022



| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|-----------------------------------|-------------|-------------|-------------|----------------------|------|------|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 367 | 8 | 12 | 38 | 47 | 363 |
| Future Volume (Veh/h) | 367 | 8 | 12 | 38 | 47 | 363 |
| Sign Control | Free | | | Stop | Stop | |
| Grade | 0% | | | 0% | 0% | |
| Peak Hour Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Hourly flow rate (vph) | 367 | 8 | 12 | 38 | 47 | 363 |
| Pedestrians | | | | | | |
| Lane Width (m) | | | | | | |
| Walking Speed (m/s) | | | | | | |
| Percent Blockage | | | | | | |
| Right turn flare (veh) | 3 | | | | | |
| Median type | None | | | | | |
| Median storage (veh) | | | | | | |
| Upstream signal (m) | | | | | | |
| pX, platoon unblocked | | | | | | |
| vC, conflicting volume | 0 | | 758 | 734 | 734 | 0 |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | 0 | | 758 | 734 | 734 | 0 |
| tC, single (s) | 4.1 | | 7.1 | 6.5 | 6.5 | 6.2 |
| tC, 2 stage (s) | | | | | | |
| tF (s) | 2.2 | | 3.5 | 4.0 | 4.0 | 3.3 |
| p0 queue free % | 77 | | 92 | 86 | 83 | 67 |
| cM capacity (veh/h) | 1623 | | 155 | 269 | 269 | 1085 |
| Direction, Lane # | EB 1 | EB 2 | NB 1 | SB 1 | | |
| Volume Total | 367 | 8 | 50 | 410 | | |
| Volume Left | 367 | 0 | 12 | 0 | | |
| Volume Right | 0 | 8 | 0 | 363 | | |
| cSH | 1623 | 1700 | 228 | 1225 | | |
| Volume to Capacity | 0.23 | 0.00 | 0.22 | 0.33 | | |
| Queue Length 95th (m) | 6.6 | 0.0 | 6.2 | 11.3 | | |
| Control Delay (s) | 7.9 | 0.0 | 25.1 | 11.3 | | |
| Lane LOS | A | | D | B | | |
| Approach Delay (s) | 7.7 | | 25.1 | 11.3 | | |
| Approach LOS | | | D | B | | |
| Intersection Summary | | | | | | |
| Average Delay | | | 10.5 | | | |
| Intersection Capacity Utilization | | | 37.6% | ICU Level of Service | A | |
| Analysis Period (min) | | | 15 | | | |

Lanes, Volumes, Timings
 9: Clyde Ave & Clyde Access

12/06/2022



| Lane Group | WBL | NBT | SBT |
|---|------|------------------------|------|
| Lane Configurations | | | |
| Traffic Volume (vph) | 45 | 357 | 400 |
| Future Volume (vph) | 45 | 357 | 400 |
| Lane Group Flow (vph) | 90 | 369 | 426 |
| Sign Control | Stop | Free | Free |
| Intersection Summary | | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization 38.8% | | ICU Level of Service A | |
| Analysis Period (min) 15 | | | |

HCM Unsignalized Intersection Capacity Analysis
 9: Clyde Ave & Clyde Access

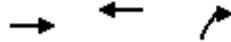
12/06/2022



| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|-----------------------------------|-------------|-------------|-------------|-------------|----------------------|------|
| Lane Configurations | W | R | T | R | L | T |
| Traffic Volume (veh/h) | 45 | 45 | 357 | 12 | 26 | 400 |
| Future Volume (Veh/h) | 45 | 45 | 357 | 12 | 26 | 400 |
| Sign Control | Stop | | Free | | | Free |
| Grade | 0% | | 0% | | | 0% |
| Peak Hour Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Hourly flow rate (vph) | 45 | 45 | 357 | 12 | 26 | 400 |
| Pedestrians | | | | | | |
| Lane Width (m) | | | | | | |
| Walking Speed (m/s) | | | | | | |
| Percent Blockage | | | | | | |
| Right turn flare (veh) | | | | | | |
| Median type | | | None | | | None |
| Median storage (veh) | | | | | | |
| Upstream signal (m) | | | 40 | | | 108 |
| pX, platoon unblocked | | | | | | |
| vC, conflicting volume | 615 | 184 | | | 369 | |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | 615 | 184 | | | 369 | |
| tC, single (s) | 6.8 | 6.9 | | | 4.1 | |
| tC, 2 stage (s) | | | | | | |
| tF (s) | 3.5 | 3.3 | | | 2.2 | |
| p0 queue free % | 89 | 95 | | | 98 | |
| cM capacity (veh/h) | 414 | 826 | | | 1186 | |
| Direction, Lane # | WB 1 | NB 1 | NB 2 | SB 1 | SB 2 | |
| Volume Total | 90 | 238 | 131 | 159 | 267 | |
| Volume Left | 45 | 0 | 0 | 26 | 0 | |
| Volume Right | 45 | 0 | 12 | 0 | 0 | |
| cSH | 551 | 1700 | 1700 | 1186 | 1700 | |
| Volume to Capacity | 0.16 | 0.14 | 0.08 | 0.02 | 0.16 | |
| Queue Length 95th (m) | 4.4 | 0.0 | 0.0 | 0.5 | 0.0 | |
| Control Delay (s) | 12.8 | 0.0 | 0.0 | 1.5 | 0.0 | |
| Lane LOS | B | | | A | | |
| Approach Delay (s) | 12.8 | 0.0 | | 0.6 | | |
| Approach LOS | B | | | | | |
| Intersection Summary | | | | | | |
| Average Delay | | | 1.6 | | | |
| Intersection Capacity Utilization | | | 38.8% | | ICU Level of Service | A |
| Analysis Period (min) | | | 15 | | | |

Lanes, Volumes, Timings
 10: Carling Access & Carling Ave

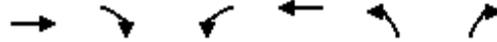
12/06/2022



| Lane Group | EBT | WBT | NBR |
|---|------|------------------------|-----|
| Lane Configurations | ↕↔ | ↕↕ | ↕↗ |
| Traffic Volume (vph) | 1411 | 776 | 39 |
| Future Volume (vph) | 1411 | 776 | 39 |
| Lane Group Flow (vph) | 1431 | 776 | 39 |
| Sign Control | Free | Free | |
| Intersection Summary | | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization 51.8% | | ICU Level of Service A | |
| Analysis Period (min) 15 | | | |

HCM Unsignalized Intersection Capacity Analysis
 10: Carling Access & Carling Ave

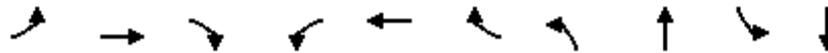
12/06/2022



| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
|-----------------------------------|-------------|-------------|-------------|----------------------|-------------|------|
| Lane Configurations | ↕↕ | | | ↕↕ | | ↗ |
| Traffic Volume (veh/h) | 1411 | 20 | 0 | 776 | 0 | 39 |
| Future Volume (Veh/h) | 1411 | 20 | 0 | 776 | 0 | 39 |
| Sign Control | Free | | | Free | Stop | |
| Grade | 0% | | | 0% | 0% | |
| Peak Hour Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Hourly flow rate (vph) | 1411 | 20 | 0 | 776 | 0 | 39 |
| Pedestrians | | | | | | |
| Lane Width (m) | | | | | | |
| Walking Speed (m/s) | | | | | | |
| Percent Blockage | | | | | | |
| Right turn flare (veh) | | | | | | |
| Median type | None | | None | | | |
| Median storage (veh) | | | | | | |
| Upstream signal (m) | 112 | | | 186 | | |
| pX, platoon unblocked | | | 0.67 | | 0.74 | 0.67 |
| vC, conflicting volume | | | 1431 | | 1809 | 716 |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | | | 666 | | 550 | 0 |
| tC, single (s) | | | 4.1 | | 6.8 | 6.9 |
| tC, 2 stage (s) | | | | | | |
| tF (s) | | | 2.2 | | 3.5 | 3.3 |
| p0 queue free % | | | 100 | | 100 | 95 |
| cM capacity (veh/h) | | | 618 | | 345 | 729 |
| Direction, Lane # | EB 1 | EB 2 | WB 1 | WB 2 | NB 1 | |
| Volume Total | 941 | 490 | 388 | 388 | 39 | |
| Volume Left | 0 | 0 | 0 | 0 | 0 | |
| Volume Right | 0 | 20 | 0 | 0 | 39 | |
| cSH | 1700 | 1700 | 1700 | 1700 | 729 | |
| Volume to Capacity | 0.55 | 0.29 | 0.23 | 0.23 | 0.05 | |
| Queue Length 95th (m) | 0.0 | 0.0 | 0.0 | 0.0 | 1.3 | |
| Control Delay (s) | 0.0 | 0.0 | 0.0 | 0.0 | 10.2 | |
| Lane LOS | | | | | | B |
| Approach Delay (s) | 0.0 | | 0.0 | | 10.2 | |
| Approach LOS | | | | | | B |
| Intersection Summary | | | | | | |
| Average Delay | | | 0.2 | | | |
| Intersection Capacity Utilization | | | 51.8% | ICU Level of Service | A | |
| Analysis Period (min) | | | 15 | | | |

Lanes, Volumes, Timings
1: Churchill Ave & Carling Ave

12/06/2022

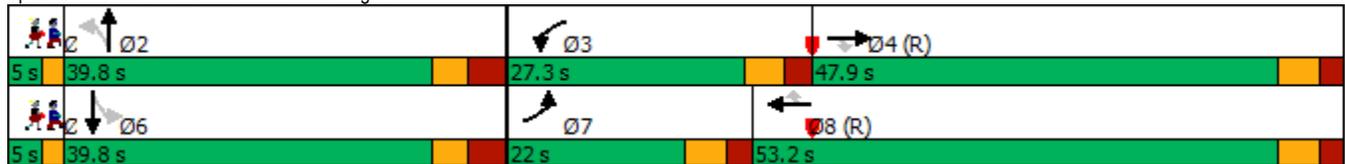


| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | SBL | SBT | Ø1 | Ø5 |
|------------------------|--------|-------|-------|-------|--------|-------|-------|-------|-------|-------|------|------|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 248 | 761 | 18 | 236 | 1467 | 218 | 96 | 54 | 187 | 40 | | |
| Future Volume (vph) | 248 | 761 | 18 | 236 | 1467 | 218 | 96 | 54 | 187 | 40 | | |
| Lane Group Flow (vph) | 248 | 761 | 18 | 236 | 1467 | 218 | 96 | 202 | 187 | 326 | | |
| Turn Type | Prot | NA | Perm | Prot | NA | Perm | Perm | NA | Perm | NA | | |
| Protected Phases | 7 | 4 | | 3 | 8 | | | 2 | | 6 | 1 | 5 |
| Permitted Phases | | | 4 | | | 8 | 2 | | 6 | | | |
| Detector Phase | 7 | 4 | 4 | 3 | 8 | 8 | 2 | 2 | 6 | 6 | | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 5.0 | 10.0 | 10.0 | 5.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 3.0 | 3.0 |
| Minimum Split (s) | 11.1 | 34.1 | 34.1 | 11.1 | 34.1 | 34.1 | 39.8 | 39.8 | 39.8 | 39.8 | 5.0 | 5.0 |
| Total Split (s) | 22.0 | 47.9 | 47.9 | 27.3 | 53.2 | 53.2 | 39.8 | 39.8 | 39.8 | 39.8 | 5.0 | 5.0 |
| Total Split (%) | 18.3% | 39.9% | 39.9% | 22.8% | 44.3% | 44.3% | 33.2% | 33.2% | 33.2% | 33.2% | 4% | 4% |
| Yellow Time (s) | 3.7 | 3.7 | 3.7 | 3.7 | 3.7 | 3.7 | 3.3 | 3.3 | 3.3 | 3.3 | 2.0 | 2.0 |
| All-Red Time (s) | 2.4 | 2.4 | 2.4 | 2.4 | 2.4 | 2.4 | 3.5 | 3.5 | 3.5 | 3.5 | 0.0 | 0.0 |
| 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) | 6.1 | 6.1 | 6.1 | 6.1 | 6.1 | 6.1 | 6.8 | 6.8 | 6.8 | 6.8 | | |
| Lead/Lag | Lead | Lag | Lag | Lead | Lag | Lag | Lag | Lag | Lag | Lag | Lead | Lead |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Recall Mode | None | C-Max | C-Max | None | C-Max | C-Max | Max | Max | Max | Max | None | None |
| Act Effct Green (s) | 15.9 | 43.4 | 43.4 | 19.6 | 47.1 | 47.1 | 38.0 | 38.0 | 38.0 | 38.0 | | |
| Actuated g/C Ratio | 0.13 | 0.36 | 0.36 | 0.16 | 0.39 | 0.39 | 0.32 | 0.32 | 0.32 | 0.32 | | |
| v/c Ratio | 1.11 | 0.62 | 0.03 | 0.85 | 1.10 | 0.35 | 0.44 | 0.35 | 0.58 | 0.49 | | |
| Control Delay | 145.0 | 31.0 | 0.1 | 79.3 | 86.7 | 9.2 | 40.1 | 15.7 | 43.1 | 8.3 | | |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | |
| Total Delay | 145.0 | 31.0 | 0.1 | 79.3 | 86.7 | 9.2 | 40.1 | 15.7 | 43.1 | 8.3 | | |
| LOS | F | C | A | E | F | A | D | B | D | A | | |
| Approach Delay | | 58.0 | | | 77.0 | | | 23.6 | | 21.0 | | |
| Approach LOS | | E | | | E | | | C | | C | | |
| Queue Length 50th (m) | ~68.8 | 66.8 | 0.0 | 47.4 | ~207.7 | 11.0 | 17.9 | 15.2 | 36.8 | 6.6 | | |
| Queue Length 95th (m) | #120.6 | 65.7 | m0.0 | #91.2 | #247.6 | 14.4 | 35.0 | 34.7 | 61.8 | 29.9 | | |
| Internal Link Dist (m) | | 162.3 | | | 176.6 | | | 177.0 | | 412.2 | | |
| Turn Bay Length (m) | 65.0 | | 30.0 | 65.0 | | 40.0 | 20.0 | | 20.0 | | | |
| Base Capacity (vph) | 224 | 1224 | 585 | 299 | 1330 | 631 | 220 | 571 | 320 | 669 | | |
| 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 | 1.11 | 0.62 | 0.03 | 0.79 | 1.10 | 0.35 | 0.44 | 0.35 | 0.58 | 0.49 | | |

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 92 (77%), Referenced to phase 4:EBT and 8:WBT, Start of Green
 Natural Cycle: 140
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.11
 Intersection Signal Delay: 59.9
 Intersection Capacity Utilization 117.2%
 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.
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: Churchill Ave & Carling Ave



Total Projected 2036 (with Reductions) PM

Synchro 11 Report

Lanes, Volumes, Timings
2: Clyde Ave/Cole Ave & Carling Ave

12/06/2022



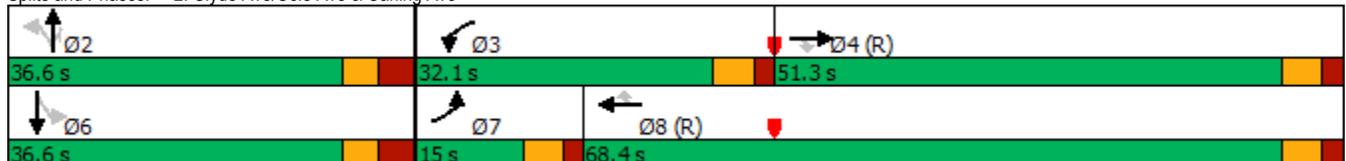
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT |
|------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Lane Configurations | | | | | | | | | | | |
| Traffic Volume (vph) | 77 | 756 | 165 | 229 | 1496 | 58 | 138 | 87 | 152 | 22 | 54 |
| Future Volume (vph) | 77 | 756 | 165 | 229 | 1496 | 58 | 138 | 87 | 152 | 22 | 54 |
| Lane Group Flow (vph) | 77 | 756 | 165 | 229 | 1496 | 58 | 138 | 87 | 152 | 22 | 116 |
| Turn Type | Prot | NA | Perm | Prot | NA | Perm | Perm | NA | Perm | Perm | NA |
| Protected Phases | 7 | 4 | | 3 | 8 | | | 2 | | | 6 |
| Permitted Phases | | | 4 | | | 8 | 2 | | 2 | 6 | |
| Detector Phase | 7 | 4 | 4 | 3 | 8 | 8 | 2 | 2 | 2 | 6 | 6 |
| Switch Phase | | | | | | | | | | | |
| Minimum Initial (s) | 5.0 | 10.0 | 10.0 | 5.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 |
| Minimum Split (s) | 10.4 | 30.8 | 30.8 | 10.4 | 30.8 | 30.8 | 36.6 | 36.6 | 36.6 | 36.6 | 36.6 |
| Total Split (s) | 15.0 | 51.3 | 51.3 | 32.1 | 68.4 | 68.4 | 36.6 | 36.6 | 36.6 | 36.6 | 36.6 |
| Total Split (%) | 12.5% | 42.8% | 42.8% | 26.8% | 57.0% | 57.0% | 30.5% | 30.5% | 30.5% | 30.5% | 30.5% |
| Yellow Time (s) | 3.7 | 3.7 | 3.7 | 3.7 | 3.7 | 3.7 | 3.3 | 3.3 | 3.3 | 3.3 | 3.3 |
| All-Red Time (s) | 1.7 | 2.1 | 2.1 | 1.7 | 2.1 | 2.1 | 3.3 | 3.3 | 3.3 | 3.3 | 3.3 |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | 5.4 | 5.8 | 5.8 | 5.4 | 5.8 | 5.8 | 6.6 | 6.6 | 6.6 | 6.6 | 6.6 |
| Lead/Lag | Lead | Lag | Lag | Lead | Lag | Lag | | | | | |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | Yes | Yes | | | | | |
| Recall Mode | None | C-Max | C-Max | None | C-Max | C-Max | None | None | None | None | None |
| Act Effct Green (s) | 9.1 | 60.1 | 60.1 | 21.0 | 74.3 | 74.3 | 21.1 | 21.1 | 21.1 | 21.1 | 21.1 |
| Actuated g/C Ratio | 0.08 | 0.50 | 0.50 | 0.18 | 0.62 | 0.62 | 0.18 | 0.18 | 0.18 | 0.18 | 0.18 |
| v/c Ratio | 0.60 | 0.45 | 0.20 | 0.77 | 0.71 | 0.06 | 0.66 | 0.28 | 0.42 | 0.10 | 0.36 |
| Control Delay | 72.9 | 12.2 | 0.9 | 57.9 | 17.0 | 2.9 | 59.3 | 42.4 | 13.7 | 38.3 | 27.2 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 72.9 | 12.2 | 0.9 | 57.9 | 17.0 | 2.9 | 59.3 | 42.4 | 13.7 | 38.3 | 27.2 |
| LOS | E | B | A | E | B | A | E | D | B | D | C |
| Approach Delay | | 15.0 | | | 21.8 | | | 37.1 | | | 29.0 |
| Approach LOS | | B | | | C | | | D | | | C |
| Queue Length 50th (m) | 18.1 | 25.2 | 0.0 | 56.8 | 72.8 | 0.7 | 31.3 | 18.3 | 5.7 | 4.5 | 14.7 |
| Queue Length 95th (m) | #36.4 | 31.1 | 2.2 | m58.5 | m75.0 | m0.9 | 47.9 | 29.9 | 22.0 | 10.8 | 28.7 |
| Internal Link Dist (m) | | 369.5 | | | 87.5 | | | 83.7 | | | 136.4 |
| Turn Bay Length (m) | 20.0 | | 105.0 | 120.0 | | 30.0 | 95.0 | | 5.0 | 20.0 | |
| Base Capacity (vph) | 138 | 1697 | 819 | 377 | 2100 | 910 | 298 | 446 | 459 | 307 | 440 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 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 |
| Reduced v/c Ratio | 0.56 | 0.45 | 0.20 | 0.61 | 0.71 | 0.06 | 0.46 | 0.20 | 0.33 | 0.07 | 0.26 |

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 93 (78%), Referenced to phase 4:EBT and 8:WBT, Start of Green
 Natural Cycle: 90
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.77
 Intersection Signal Delay: 21.8
 Intersection Capacity Utilization 82.0%
 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.

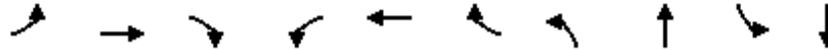
Intersection LOS: C
 ICU Level of Service D

Splits and Phases: 2: Clyde Ave/Cole Ave & Carling Ave



Lanes, Volumes, Timings
3: Broadview Ave & Carling Ave

12/06/2022

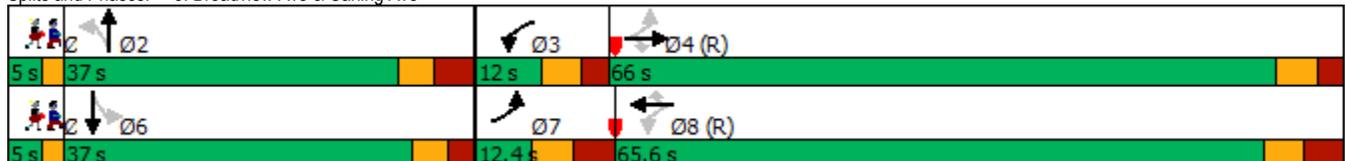


| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | SBL | SBT | Ø1 | Ø5 |
|------------------------|-------|-------|-------|-------|--------|-------|-------|-------|-------|-------|------|------|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 94 | 903 | 31 | 67 | 1566 | 65 | 181 | 35 | 67 | 23 | | |
| Future Volume (vph) | 94 | 903 | 31 | 67 | 1566 | 65 | 181 | 35 | 67 | 23 | | |
| Lane Group Flow (vph) | 94 | 903 | 31 | 67 | 1566 | 65 | 181 | 68 | 67 | 173 | | |
| Turn Type | pm+pt | NA | Perm | pm+pt | NA | Perm | Perm | NA | Perm | NA | | |
| Protected Phases | 7 | 4 | | 3 | 8 | | | 2 | | 6 | 1 | 5 |
| Permitted Phases | 4 | | 4 | 8 | | 8 | 2 | | 6 | | | |
| Detector Phase | 7 | 4 | 4 | 3 | 8 | 8 | 2 | 2 | 6 | 6 | | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 5.0 | 10.0 | 10.0 | 5.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 3.0 | 3.0 |
| Minimum Split (s) | 12.4 | 23.2 | 23.2 | 11.2 | 24.4 | 24.4 | 37.0 | 37.0 | 35.8 | 35.8 | 5.0 | 5.0 |
| Total Split (s) | 12.4 | 66.0 | 66.0 | 12.0 | 65.6 | 65.6 | 37.0 | 37.0 | 37.0 | 37.0 | 5.0 | 5.0 |
| Total Split (%) | 10.3% | 55.0% | 55.0% | 10.0% | 54.7% | 54.7% | 30.8% | 30.8% | 30.8% | 30.8% | 4% | 4% |
| Yellow Time (s) | 3.7 | 3.7 | 3.7 | 3.7 | 3.7 | 3.7 | 3.3 | 3.3 | 3.3 | 3.3 | 2.0 | 2.0 |
| All-Red Time (s) | 3.7 | 2.5 | 2.5 | 2.5 | 3.7 | 3.7 | 3.7 | 3.7 | 2.5 | 2.5 | 0.0 | 0.0 |
| 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) | 7.4 | 6.2 | 6.2 | 6.2 | 7.4 | 7.4 | 7.0 | 7.0 | 5.8 | 5.8 | | |
| Lead/Lag | Lead | Lag | Lag | Lead | Lag | Lag | Lag | Lag | Lag | Lag | Lead | Lead |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Recall Mode | None | C-Max | C-Max | None | C-Max | C-Max | Max | Max | Max | Max | Min | Min |
| Act Effct Green (s) | 65.0 | 62.2 | 62.2 | 65.2 | 58.2 | 58.2 | 30.0 | 30.0 | 31.2 | 31.2 | | |
| Actuated g/C Ratio | 0.54 | 0.52 | 0.52 | 0.54 | 0.48 | 0.48 | 0.25 | 0.25 | 0.26 | 0.26 | | |
| v/c Ratio | 0.73 | 0.51 | 0.04 | 0.23 | 0.95 | 0.09 | 0.74 | 0.16 | 0.21 | 0.35 | | |
| Control Delay | 49.2 | 20.9 | 0.1 | 17.0 | 46.7 | 3.5 | 60.4 | 21.3 | 36.8 | 10.0 | | |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | |
| Total Delay | 49.2 | 20.9 | 0.1 | 17.0 | 46.7 | 3.5 | 60.4 | 21.3 | 36.8 | 10.0 | | |
| LOS | D | C | A | B | D | A | E | C | D | B | | |
| Approach Delay | | 22.8 | | | 43.9 | | | 49.8 | | 17.5 | | |
| Approach LOS | | C | | | D | | | D | | B | | |
| Queue Length 50th (m) | 9.2 | 74.2 | 0.0 | 8.6 | 183.6 | 0.6 | 39.3 | 6.3 | 12.4 | 4.1 | | |
| Queue Length 95th (m) | #34.1 | 92.4 | 0.0 | m11.0 | #229.7 | m2.3 | #72.9 | 17.9 | 24.7 | 21.7 | | |
| Internal Link Dist (m) | | 239.1 | | | 369.5 | | | 434.9 | | 268.8 | | |
| Turn Bay Length (m) | 70.0 | | 30.0 | 50.0 | | 30.0 | 20.0 | | 45.0 | | | |
| Base Capacity (vph) | 129 | 1757 | 779 | 294 | 1644 | 709 | 246 | 432 | 325 | 496 | | |
| 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 | 0.73 | 0.51 | 0.04 | 0.23 | 0.95 | 0.09 | 0.74 | 0.16 | 0.21 | 0.35 | | |

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 77 (64%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green
 Natural Cycle: 110
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.95
 Intersection Signal Delay: 35.6
 Intersection LOS: D
 Intersection Capacity Utilization 109.8%
 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: 3: Broadview Ave & Carling Ave



Lanes, Volumes, Timings
4: Clyde Ave & Doheny St

12/06/2022

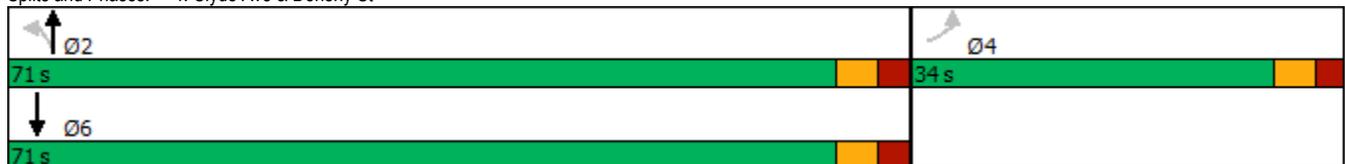


| Lane Group | EBL | NBL | NBT | SBT |
|------------------------|-------|-------|-------|-------|
| Lane Configurations | | | | |
| Traffic Volume (vph) | 24 | 32 | 320 | 291 |
| Future Volume (vph) | 24 | 32 | 320 | 291 |
| Lane Group Flow (vph) | 76 | 32 | 320 | 346 |
| Turn Type | Perm | Perm | NA | NA |
| Protected Phases | | | 2 | 6 |
| Permitted Phases | 4 | 2 | | |
| Detector Phase | 4 | 2 | 2 | 6 |
| Switch Phase | | | | |
| Minimum Initial (s) | 10.0 | 10.0 | 10.0 | 10.0 |
| Minimum Split (s) | 24.6 | 29.0 | 29.0 | 29.0 |
| Total Split (s) | 34.0 | 71.0 | 71.0 | 71.0 |
| Total Split (%) | 32.4% | 67.6% | 67.6% | 67.6% |
| Yellow Time (s) | 3.3 | 3.3 | 3.3 | 3.3 |
| All-Red Time (s) | 2.3 | 2.7 | 2.7 | 2.7 |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | 5.6 | 6.0 | 6.0 | 6.0 |
| Lead/Lag | | | | |
| Lead-Lag Optimize? | | | | |
| Recall Mode | None | Max | Max | Max |
| Act Effct Green (s) | 10.2 | 78.7 | 78.7 | 78.7 |
| Actuated g/C Ratio | 0.11 | 0.82 | 0.82 | 0.82 |
| v/c Ratio | 0.35 | 0.04 | 0.22 | 0.25 |
| Control Delay | 22.2 | 2.7 | 3.2 | 3.1 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 22.2 | 2.7 | 3.2 | 3.1 |
| LOS | C | A | A | A |
| Approach Delay | 22.2 | | 3.1 | 3.1 |
| Approach LOS | C | | A | A |
| Queue Length 50th (m) | 4.4 | 1.1 | 12.9 | 13.5 |
| Queue Length 95th (m) | 16.4 | 3.0 | 21.0 | 22.1 |
| Internal Link Dist (m) | 281.3 | | 265.7 | 16.3 |
| Turn Bay Length (m) | | 45.0 | | |
| Base Capacity (vph) | 510 | 807 | 1425 | 1387 |
| 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 | 0.15 | 0.04 | 0.22 | 0.25 |

Intersection Summary

| | |
|---|------------------------|
| Cycle Length: 105 | |
| Actuated Cycle Length: 95.7 | |
| Natural Cycle: 55 | |
| Control Type: Actuated-Uncoordinated | |
| Maximum v/c Ratio: 0.35 | |
| Intersection Signal Delay: 5.0 | Intersection LOS: A |
| Intersection Capacity Utilization 46.1% | ICU Level of Service A |
| Analysis Period (min) 15 | |

Splits and Phases: 4: Clyde Ave & Doheny St



Lanes, Volumes, Timings
5: Saigon Ct & Carling Ave WB

12/06/2022



| Lane Group | WBL | WBT | WBR | NBL | NBT | SBT |
|------------------------|-------|-------|-------|-------|-------|-------|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 32 | 1782 | 12 | 37 | 9 | 87 |
| Future Volume (vph) | 32 | 1782 | 12 | 37 | 9 | 87 |
| Lane Group Flow (vph) | 32 | 1782 | 12 | 0 | 46 | 102 |
| Turn Type | Perm | NA | Perm | Perm | NA | NA |
| Protected Phases | | 8 | | | 2 | 6 |
| Permitted Phases | 8 | | 8 | 2 | | |
| Detector Phase | 8 | 8 | 8 | 2 | 2 | 6 |
| Switch Phase | | | | | | |
| Minimum Initial (s) | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 |
| Minimum Split (s) | 29.7 | 29.7 | 29.7 | 26.7 | 26.7 | 26.7 |
| Total Split (s) | 92.0 | 92.0 | 92.0 | 28.0 | 28.0 | 28.0 |
| Total Split (%) | 76.7% | 76.7% | 76.7% | 23.3% | 23.3% | 23.3% |
| Yellow Time (s) | 3.7 | 3.7 | 3.7 | 3.3 | 3.3 | 3.3 |
| All-Red Time (s) | 2.0 | 2.0 | 2.0 | 2.4 | 2.4 | 2.4 |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 |
| Total Lost Time (s) | 5.7 | 5.7 | 5.7 | | 5.7 | 5.7 |
| Lead/Lag | | | | | | |
| Lead-Lag Optimize? | | | | | | |
| Recall Mode | C-Max | C-Max | C-Max | None | None | None |
| Act Effct Green (s) | 95.2 | 95.2 | 95.2 | | 13.4 | 13.4 |
| Actuated g/C Ratio | 0.79 | 0.79 | 0.79 | | 0.11 | 0.11 |
| v/c Ratio | 0.02 | 0.66 | 0.01 | | 0.35 | 0.51 |
| Control Delay | 3.4 | 7.5 | 0.7 | | 44.0 | 55.4 |
| Queue Delay | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 |
| Total Delay | 3.4 | 7.5 | 0.7 | | 44.0 | 55.4 |
| LOS | A | A | A | | D | E |
| Approach Delay | | 7.3 | | | 44.0 | 55.4 |
| Approach LOS | | A | | | D | E |
| Queue Length 50th (m) | 1.2 | 72.9 | 0.0 | | 10.1 | 21.9 |
| Queue Length 95th (m) | 4.4 | 134.1 | 0.8 | | 20.7 | 36.6 |
| Internal Link Dist (m) | | 298.8 | | | 45.3 | 50.2 |
| Turn Bay Length (m) | 50.0 | | 40.0 | | | |
| Base Capacity (vph) | 1338 | 2689 | 1161 | | 217 | 328 |
| 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 | 0.02 | 0.66 | 0.01 | | 0.21 | 0.31 |

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 62 (52%), Referenced to phase 8:WBTL, Start of Green
 Natural Cycle: 75
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.66
 Intersection Signal Delay: 10.7
 Intersection Capacity Utilization 72.4%
 Analysis Period (min) 15

Intersection LOS: B
 ICU Level of Service C

Splits and Phases: 5: Saigon Ct & Carling Ave WB



Lanes, Volumes, Timings
6: Carling Ave EB & Saigon Ct

12/06/2022

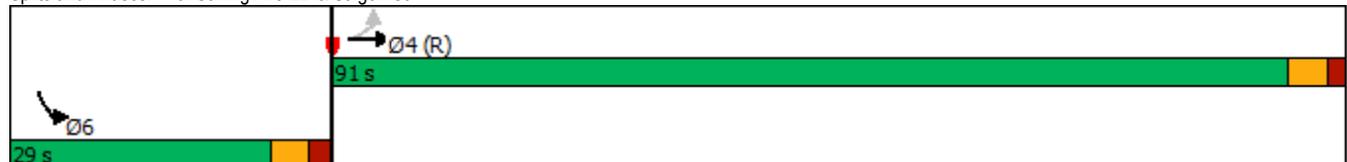


| Lane Group | EBT | SBL |
|------------------------|-------|-------|
| Lane Configurations | ↕↕ | ↕↕ |
| Traffic Volume (vph) | 1095 | 119 |
| Future Volume (vph) | 1095 | 119 |
| Lane Group Flow (vph) | 1140 | 119 |
| Turn Type | NA | Prot |
| Protected Phases | 4 | 6 |
| Permitted Phases | | |
| Detector Phase | 4 | 6 |
| Switch Phase | | |
| Minimum Initial (s) | 10.0 | 5.0 |
| Minimum Split (s) | 15.4 | 22.6 |
| Total Split (s) | 91.0 | 29.0 |
| Total Split (%) | 75.8% | 24.2% |
| Yellow Time (s) | 3.7 | 3.3 |
| All-Red Time (s) | 1.7 | 2.3 |
| Lost Time Adjust (s) | 0.0 | 0.0 |
| Total Lost Time (s) | 5.4 | 5.6 |
| Lead/Lag | | |
| Lead-Lag Optimize? | | |
| Recall Mode | C-Max | None |
| Act Effct Green (s) | 99.3 | 9.7 |
| Actuated g/C Ratio | 0.83 | 0.08 |
| v/c Ratio | 0.41 | 0.45 |
| Control Delay | 1.0 | 44.6 |
| Queue Delay | 0.0 | 0.0 |
| Total Delay | 1.0 | 44.6 |
| LOS | A | D |
| Approach Delay | 1.0 | 44.6 |
| Approach LOS | A | D |
| Queue Length 50th (m) | 4.3 | 15.1 |
| Queue Length 95th (m) | 5.6 | 24.7 |
| Internal Link Dist (m) | 110.2 | 45.3 |
| Turn Bay Length (m) | | |
| Base Capacity (vph) | 2799 | 641 |
| Starvation Cap Reductn | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 |
| Storage Cap Reductn | 0 | 0 |
| Reduced v/c Ratio | 0.41 | 0.19 |

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 105 (88%), Referenced to phase 4:EBTL, Start of Green
 Natural Cycle: 50
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.45
 Intersection Signal Delay: 5.1
 Intersection Capacity Utilization 46.7%
 Analysis Period (min) 15
 Intersection LOS: A
 ICU Level of Service A

Splits and Phases: 6: Carling Ave EB & Saigon Ct



Lanes, Volumes, Timings
 7: Clyde Ave & Laperriere Ave

12/06/2022



| Lane Group | WBL | NBT | SBT |
|---|------|------------------------|------|
| Lane Configurations | | | |
| Traffic Volume (vph) | 249 | 240 | 261 |
| Future Volume (vph) | 249 | 240 | 261 |
| Lane Group Flow (vph) | 455 | 403 | 414 |
| Sign Control | Stop | Stop | Stop |
| Intersection Summary | | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization 85.7% | | ICU Level of Service E | |
| Analysis Period (min) 15 | | | |

HCM Unsignalized Intersection Capacity Analysis
 7: Clyde Ave & Laperriere Ave

12/06/2022



| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|-----------------------------------|-------|-------|-------|----------------------|------|------|
| Lane Configurations | | | | | | |
| Sign Control | Stop | | Stop | | | Stop |
| Traffic Volume (vph) | 249 | 206 | 240 | 163 | 153 | 261 |
| Future Volume (vph) | 249 | 206 | 240 | 163 | 153 | 261 |
| Peak Hour Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Hourly flow rate (vph) | 249 | 206 | 240 | 163 | 153 | 261 |
| Direction, Lane # | WB 1 | NB 1 | SB 1 | | | |
| Volume Total (vph) | 455 | 403 | 414 | | | |
| Volume Left (vph) | 249 | 0 | 153 | | | |
| Volume Right (vph) | 206 | 163 | 0 | | | |
| Hadj (s) | -0.11 | -0.13 | 0.16 | | | |
| Departure Headway (s) | 6.2 | 6.2 | 6.4 | | | |
| Degree Utilization, x | 0.78 | 0.69 | 0.74 | | | |
| Capacity (veh/h) | 559 | 561 | 539 | | | |
| Control Delay (s) | 28.0 | 21.7 | 25.1 | | | |
| Approach Delay (s) | 28.0 | 21.7 | 25.1 | | | |
| Approach LOS | D | C | D | | | |
| Intersection Summary | | | | | | |
| Delay | | | 25.1 | | | |
| Level of Service | | | D | | | |
| Intersection Capacity Utilization | | | 85.7% | ICU Level of Service | E | |
| Analysis Period (min) | | | 15 | | | |

Lanes, Volumes, Timings
 8: Clyde Ave & Woodward Dr

12/06/2022



| Lane Group | EBL | EBR | NBT | SBT | SBR |
|---|------|-----|------------------------|------|-----|
| Lane Configurations | | | | | |
| Traffic Volume (vph) | 351 | 17 | 52 | 18 | 494 |
| Future Volume (vph) | 351 | 17 | 52 | 18 | 494 |
| Lane Group Flow (vph) | 351 | 17 | 73 | 18 | 494 |
| Sign Control | Free | | Stop | Stop | |
| Intersection Summary | | | | | |
| Control Type: Unsignalized | | | | | |
| Intersection Capacity Utilization 43.1% | | | ICU Level of Service A | | |
| Analysis Period (min) 15 | | | | | |

HCM Unsignalized Intersection Capacity Analysis
8: Clyde Ave & Woodward Dr

12/06/2022



| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|-----------------------------------|-------------|-------------|-------------|----------------------|------|------|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 351 | 17 | 21 | 52 | 18 | 494 |
| Future Volume (Veh/h) | 351 | 17 | 21 | 52 | 18 | 494 |
| Sign Control | Free | | | Stop | Stop | |
| Grade | 0% | | | 0% | 0% | |
| Peak Hour Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Hourly flow rate (vph) | 351 | 17 | 21 | 52 | 18 | 494 |
| Pedestrians | | | | | | |
| Lane Width (m) | | | | | | |
| Walking Speed (m/s) | | | | | | |
| Percent Blockage | | | | | | |
| Right turn flare (veh) | 3 | | | | | |
| Median type | None | | | | | |
| Median storage (veh) | | | | | | |
| Upstream signal (m) | | | | | | |
| pX, platoon unblocked | | | | | | |
| vC, conflicting volume | 0 | | 711 | 702 | 702 | 0 |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | 0 | | 711 | 702 | 702 | 0 |
| tC, single (s) | 4.1 | | 7.1 | 6.5 | 6.5 | 6.2 |
| tC, 2 stage (s) | | | | | | |
| tF (s) | 2.2 | | 3.5 | 4.0 | 4.0 | 3.3 |
| p0 queue free % | 78 | | 86 | 82 | 94 | 54 |
| cM capacity (veh/h) | 1623 | | 151 | 284 | 284 | 1085 |
| Direction, Lane # | EB 1 | EB 2 | NB 1 | SB 1 | | |
| Volume Total | 351 | 17 | 73 | 512 | | |
| Volume Left | 351 | 0 | 21 | 0 | | |
| Volume Right | 0 | 17 | 0 | 494 | | |
| cSH | 1623 | 1700 | 226 | 1125 | | |
| Volume to Capacity | 0.22 | 0.01 | 0.32 | 0.46 | | |
| Queue Length 95th (m) | 6.3 | 0.0 | 10.1 | 18.5 | | |
| Control Delay (s) | 7.8 | 0.0 | 28.3 | 11.3 | | |
| Lane LOS | A | | D | B | | |
| Approach Delay (s) | 7.5 | | 28.3 | 11.3 | | |
| Approach LOS | | | D | B | | |
| Intersection Summary | | | | | | |
| Average Delay | | | 11.1 | | | |
| Intersection Capacity Utilization | | | 43.1% | ICU Level of Service | A | |
| Analysis Period (min) | | | 15 | | | |

Lanes, Volumes, Timings
 9: Clyde Ave & Clyde Access

12/06/2022



| Lane Group | WBL | NBT | SBT |
|---|------|------------------------|------|
| Lane Configurations | | | |
| Traffic Volume (vph) | 33 | 388 | 434 |
| Future Volume (vph) | 33 | 388 | 434 |
| Lane Group Flow (vph) | 66 | 414 | 493 |
| Sign Control | Stop | Free | Free |
| Intersection Summary | | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization 40.7% | | ICU Level of Service A | |
| Analysis Period (min) 15 | | | |

HCM Unsignalized Intersection Capacity Analysis
 9: Clyde Ave & Clyde Access

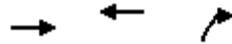
12/06/2022



| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|-----------------------------------|-------------|-------------|-------------|-------------|----------------------|------|
| Lane Configurations | W | | T | | | T |
| Traffic Volume (veh/h) | 33 | 33 | 388 | 26 | 59 | 434 |
| Future Volume (Veh/h) | 33 | 33 | 388 | 26 | 59 | 434 |
| Sign Control | Stop | | Free | | | Free |
| Grade | 0% | | 0% | | | 0% |
| Peak Hour Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Hourly flow rate (vph) | 33 | 33 | 388 | 26 | 59 | 434 |
| Pedestrians | | | | | | |
| Lane Width (m) | | | | | | |
| Walking Speed (m/s) | | | | | | |
| Percent Blockage | | | | | | |
| Right turn flare (veh) | | | | | | |
| Median type | | | None | | | None |
| Median storage (veh) | | | | | | |
| Upstream signal (m) | | | 40 | | | 108 |
| pX, platoon unblocked | | | | | | |
| vC, conflicting volume | 736 | 207 | | | 414 | |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | 736 | 207 | | | 414 | |
| tC, single (s) | 6.8 | 6.9 | | | 4.1 | |
| tC, 2 stage (s) | | | | | | |
| tF (s) | 3.5 | 3.3 | | | 2.2 | |
| p0 queue free % | 90 | 96 | | | 95 | |
| cM capacity (veh/h) | 336 | 799 | | | 1141 | |
| Direction, Lane # | WB 1 | NB 1 | NB 2 | SB 1 | SB 2 | |
| Volume Total | 66 | 259 | 155 | 204 | 289 | |
| Volume Left | 33 | 0 | 0 | 59 | 0 | |
| Volume Right | 33 | 0 | 26 | 0 | 0 | |
| cSH | 473 | 1700 | 1700 | 1141 | 1700 | |
| Volume to Capacity | 0.14 | 0.15 | 0.09 | 0.05 | 0.17 | |
| Queue Length 95th (m) | 3.7 | 0.0 | 0.0 | 1.2 | 0.0 | |
| Control Delay (s) | 13.8 | 0.0 | 0.0 | 2.7 | 0.0 | |
| Lane LOS | B | | | A | | |
| Approach Delay (s) | 13.8 | 0.0 | | 1.1 | | |
| Approach LOS | B | | | | | |
| Intersection Summary | | | | | | |
| Average Delay | | | 1.5 | | | |
| Intersection Capacity Utilization | | | 40.7% | | ICU Level of Service | A |
| Analysis Period (min) | | | 15 | | | |

Lanes, Volumes, Timings
 10: Carling Access & Carling Ave

12/06/2022



| Lane Group | EBT | WBT | NBR |
|---|------|------------------------|-----|
| Lane Configurations | ↕↔ | ↕↕ | ↕↗ |
| Traffic Volume (vph) | 884 | 1736 | 21 |
| Future Volume (vph) | 884 | 1736 | 21 |
| Lane Group Flow (vph) | 930 | 1736 | 21 |
| Sign Control | Free | Free | |
| Intersection Summary | | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization 54.0% | | ICU Level of Service A | |
| Analysis Period (min) 15 | | | |

HCM Unsignalized Intersection Capacity Analysis
 10: Carling Access & Carling Ave

12/06/2022



| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
|-----------------------------------|-------------|-------------|-------------|-------------|----------------------|------|
| Lane Configurations | ↕↕ | | | ↕↕ | | ↗ |
| Traffic Volume (veh/h) | 884 | 46 | 0 | 1736 | 0 | 21 |
| Future Volume (Veh/h) | 884 | 46 | 0 | 1736 | 0 | 21 |
| Sign Control | Free | | | Free | Stop | |
| Grade | 0% | | | 0% | 0% | |
| Peak Hour Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Hourly flow rate (vph) | 884 | 46 | 0 | 1736 | 0 | 21 |
| Pedestrians | | | | | | |
| Lane Width (m) | | | | | | |
| Walking Speed (m/s) | | | | | | |
| Percent Blockage | | | | | | |
| Right turn flare (veh) | | | | | | |
| Median type | None | | | None | | |
| Median storage (veh) | | | | | | |
| Upstream signal (m) | 112 | | | 186 | | |
| pX, platoon unblocked | | | 0.86 | | 0.69 | 0.86 |
| vC, conflicting volume | | | 930 | | 1775 | 465 |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | | | 593 | | 302 | 52 |
| tC, single (s) | | | 4.1 | | 6.8 | 6.9 |
| tC, 2 stage (s) | | | | | | |
| tF (s) | | | 2.2 | | 3.5 | 3.3 |
| p0 queue free % | | | 100 | | 100 | 98 |
| cM capacity (veh/h) | | | 842 | | 457 | 864 |
| Direction, Lane # | EB 1 | EB 2 | WB 1 | WB 2 | NB 1 | |
| Volume Total | 589 | 341 | 868 | 868 | 21 | |
| Volume Left | 0 | 0 | 0 | 0 | 0 | |
| Volume Right | 0 | 46 | 0 | 0 | 21 | |
| cSH | 1700 | 1700 | 1700 | 1700 | 864 | |
| Volume to Capacity | 0.35 | 0.20 | 0.51 | 0.51 | 0.02 | |
| Queue Length 95th (m) | 0.0 | 0.0 | 0.0 | 0.0 | 0.6 | |
| Control Delay (s) | 0.0 | 0.0 | 0.0 | 0.0 | 9.3 | |
| Lane LOS | | | | | A | |
| Approach Delay (s) | 0.0 | | 0.0 | | 9.3 | |
| Approach LOS | | | | | A | |
| Intersection Summary | | | | | | |
| Average Delay | | | 0.1 | | | |
| Intersection Capacity Utilization | | | 54.0% | | ICU Level of Service | A |
| Analysis Period (min) | | | 15 | | | |